





Library  
of  
Phillips Academy

Accession No.

9455

Shelf No.

217















New York. D. Appleton & Co

*R. W. Hunt.*







APPLETONS'  
ANNUAL CYCLOPÆDIA  
AND  
REGISTER OF IMPORTANT EVENTS  
OF THE YEAR  
1895.

EMBRACING POLITICAL, MILITARY, AND ECCLESIASTICAL AFFAIRS;  
PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE,  
FINANCE, LITERATURE, SCIENCE, AGRICULTURE,  
AND MECHANICAL INDUSTRY.

NEW SERIES, VOL. XX.

*WITH AN INDEX TO THE SERIES.*

WHOLE SERIES, VOL. XXXV.

NEW YORK:  
D. APPLETON AND COMPANY,  
72 FIFTH AVENUE.  
1896.

COPYRIGHT, 1896,  
BY D. APPLETON AND COMPANY.

R.  
031  
Ap 5  
v. 35  
(n.s., v. 20)

## P R E F A C E .

---

THE most exciting event of 1895, in this quarter of the world—and it may yet prove to be the most important—was the declaration by our Government of a purpose to apply the Monroe doctrine to the boundary dispute that has been going on so long between Great Britain and Venezuela concerning the westward extension of British Guiana. Whether the English claim is honest, or is merely an expression of the cupidity excited by the discovery of rich gold fields in eastern Venezuela, is a fair subject for discussion, and its examination will be greatly assisted by the history of the case in our article on “Venezuela” and the accompanying colored map. The assertion of the Monroe doctrine, with its possible results, naturally brings the inquiry, What have we to rely upon in case of sudden war? and this is answered in large part by the article in this volume on the “National Guard,” which has been compiled carefully from official sources and shows the strength of that organization in the several States and groups of States. It is illustrated with portraits of some of the best known of the commanding officers. For information as to actual wars waged in 1895 the reader will turn to the account of the Italian advance into Abyssinia, that of the British advance in Afghanistan, and the rebellion in Cuba.

Turning from the contemplation of war to the arts of peace, we have an important article on “Manufactures in the United States,” which shows the capital invested, the cost of material, and the value of the product, in 165 cities, wherever the capital in any one industry exceeds \$200,000.

The progress of science is recorded in the articles “Associations for the Advancement of Science,” “Astronomy,” “Chemistry,” “Metallurgy,” “Meteorology,” “Physics,” and “Physiology,” all of which are freely subheaded, so that the reader can readily find the specific subject in which he is interested. For matters mechanical rather than scientific the articles “Bicycles,” “Engineering,” “Horseless Carriages,” and “Patents” may be consulted.

The articles on the Dominion of Canada and the separate provinces, written by a native Canadian from direct information, will be found unusually full and interesting. And beyond Canada is our own Alaska. Material is not available for an article on this Territory every year, but in the present volume we present one from the pen of Prof. Russell, of the University of Michigan, who has studied the subject on the ground.

The articles on the great religious denominations will be found full as usual, and that class this year includes also some on the smaller and less known organizations, such as “Christian Endeavor,” “Congress of Free Churches,” “Evangelical Association,” “Independent Roman Catholic Church,” “Reunion of

Christendom," and "Reorganized Church of Jesus Christ of Latter-day Saints." The progress of humane work is indicated to some extent by the articles on "Dog Shelters" and "Peace Societies," while the opposite tendency may be read in the story of the atrocious massacres in Armenia, as set forth in the article "Turkey."

The article on the Congress of the United States, setting forth the acts and debates of the short session, covers the subjects of the Currency, the Bond Question, Silver Coinage, some Japanese matters, Hawaiian relations, the Seal question, Copyright, Lotteries, Military Parks, the Nicaragua Canal, and others. And for what took place in our monetary centers the "Financial Review of 1895" may be consulted, while minor happenings are briefly chronicled under "Disasters" and "Events." The annual record of the Fine Arts is contributed by John D. Champlin, author of the "Cyclopedia of Painters and Paintings," and there is a rapid review of the year's publications in the three Literature articles. The article "Gifts and Bequests" presents a gratifying record.

The most notable of the special articles in this volume is that on the "Cotton States and International Exhibition," held in Atlanta, Ga., which is illustrated with a map and seven views. Other special articles are those on "Elks, Order of," "Football," "Félix Faure," "Irish-American Alliance," "Oleomargarine," "Polish Alliance," "Search Light," "Sloyd," and "West Africa."

The death roll of 1895 is notable. The scientific world suffered the loss of Huxley in England, Pasteur in France, and Dana in our own country. Our losses of clergymen include Edward Beecher, John A. Broadus, Arthur Brooks, O. B. Frothingham, Alonzo A. Miner, John G. Morris, Samuel F. Smith, and William M. Taylor. In art we lost Charles B. Atwood, Edwin Forbes, M. F. H. de Haas, Thomas Hovenden, Peter F. Rothermel, William W. Story, Calvert Vaux, and Leonard W. Volk; of our authors, H. H. Boyesen, Eugene Field, and Charles Étienne Gayarré; of our educators, James R. Boise, Charlotte Emerson Brown, Norman A. Calkins, Henry A. Coit, Henry Coppee, A. C. Kendrick, Charles Northend, Julius H. Seeley, and John M. Waddell; of our jurists, Walter Q. Gresham, Ebenezer R. Hoar, William Strong, and Allen G. Thurman; of our soldiers, Joseph B. Carr, Philip St. George Cooke, Richard Irving Dodge, Michael T. Donohue, Augustus V. Kautz, Erasmus D. Keyes, and John Newton; of our composers, Harrison Millard and George F. Root; and of our orators, Frederick Douglass. Among the notable names in the European necrology are those of the statesmen Lord Aberdare, Lord Randolph Churchill, Nicholas Giers, Jules St.-Hilaire, Count Taaffe, and Stambuloff; the soldiers Sir Patrick Grant, Marshal Canrobert, and Archduke Albrecht; John Bell, the sculptor; Sir Roundell Palmer, Sir Henry Rawlinson; the authors John Stuart Blackie, Alexandre Dumas, Gustav Freytag, Frederick Locker-Lampson, John R. Seeley, Heinrich von Sybel, and Stepniak. In philanthropy we have lost Linda Gilbert, and England, Emily Faithful. Sketches of all these and many more, with numerous portraits, will be found in this volume.

The book closes with an index covering the twenty volumes of the series.

NEW YORK, *April 2, 1896.*



## CONTRIBUTORS.

---

*Among the Contributors to this Volume of the "Annual Cyclopædia" are the following:*

**Oscar Fay Adams,**

Author of "Handbook of American Authors."

FROTHINGHAM, OCTAVIUS BROOKS,  
GAYARRÉ, CHARLES ÉTIENNE,  
LOCKER-LAMPSON, FREDERICK,  
PALMER, ROUNDELL,  
SEELEY, JOHN ROBERT,  
STORY, WILLIAM WETMORE,  
and other articles.

**Mrs. Florence E. Angle.**

OKLAHOMA,  
WASHINGTON (State),  
and other articles.

**Marcus Benjamin, Ph. D.,**

Editor of department of chemistry in the "Standard Dictionary."

ASSOCIATIONS FOR ADVANCEMENT OF SCIENCE,  
HUXLEY, THOMAS HENRY,  
PASTEUR, LOUIS,  
and other articles.

**J. H. A. Bone.**

OHIO.

**Arthur E. Bostwick, Ph. D.,**

Associate Editor of "Standard Dictionary."  
PHYSICS.

**Hon. Jacob V. Brower.**

HILL, ALFRED JAMES.

**Thomas Campbell-Copeland,**

Author of "The Ladder of Journalism."

MANUFACTURES IN THE UNITED STATES,  
NATIONAL GUARD.

**James P. Carey,**

Formerly Financial Editor of "Journal of Commerce."

FINANCIAL REVIEW OF 1895.

**John Denison Champlin,**

Editor of "Cyclopedia of Painters and Paintings."

FINE ARTS IN 1895.

**Hon. Benjamin F. Clayton,**

President of the Farmers' Congress.

FARMERS' CONGRESS.

**Mrs. Bessie Nicholls Croffut.**

EXPOSITION, COTTON STATES AND INTERNATIONAL,  
LITERATURE, AMERICAN,  
LITERATURE, BRITISH,  
RILEY, CHARLES VALENTINE.

**Austin E. Ford,**

Editor of "Freeman's Journal."

ROMAN CATHOLIC CHURCH.

**Mrs. Fredericka B. Gilchrist,**

Author of "The True Story of Hamlet and Ophelia."

ARKANSAS,  
IDAHO,  
NEW JERSEY,  
NEW MEXICO,  
PROTESTANT EPISCOPAL CHURCH,  
SOUTH DAKOTA,  
WISCONSIN,  
and other articles.

**Rev. William E. Griffis, D. D.,**

Formerly Professor of Physics in the University of Tokio.

JAPAN,  
KOREA.

**George J. Hagar,**

Editor of "Columbian Cyclopædia."

ALABAMA,  
CONNECTICUT,  
FLORIDA,  
GIFTS AND BEQUESTS,  
KANSAS,  
OBITUARIES, AMERICAN (in part),  
TEXAS,  
VIRGINIA.

**Rev. Moses Harvey,**

Author of "Text-book of Newfoundland History."

NEWFOUNDLAND.

**Ripley Hitchcock,**

Author of "Etching in America."

HAAS, MAURITZ F. H. DE,

**Benjamin B. Hoffman,**

Author of "The Sloyd System of Wood-Working."

SLOYD.

**J. Castell Hopkins,**

Author of "Life and Work of Mr. Gladstone."

CANADA, DOMINION OF,  
and articles on the Canadian provinces.

**Abram S. Isaacs, Ph. D.,**

Editor of "Jewish Messenger."

JEWS.

**Mrs. Helen Kendrick Johnson,**

DOUGLASS, FREDERICK.

**William H. Larrabee.**

ARCHÆOLOGY,  
CONGRESS OF FREE CHURCHES,  
EVANGELICAL ASSOCIATION,  
GERMAN EVANGELICAL SYNOD,  
MENNONITES,  
METHODISTS,  
MORAVIANS,  
PRESBYTERIANS,  
REUNION OF CHRISTENDOM,  
and other articles.

**Frederic G. Mather.**

ELKS, ORDER OF,  
IRISH NATIONAL ALLIANCE,  
PEACE SOCIETIES,  
and other articles.

**James Herbert Morse,**

Author of "Summer-Haven Songs."  
VAUX, CALVERT.

**Col. Charles Ledyard Norton,**

Author of "Political Americanisms."  
EVENTS OF 1895.  
ENGINEERING,  
PATENTS AND INVENTIONS.  
YACHTING.

**Rev. Solomon E. Ochsenford.**

HAWKINS, JACOB,  
HOLLAND, GEORGE,  
MORRIS, JOHN GOTTLIEB,  
LUTHERANS.

**Mrs. Evangeline M. O'Connor,**

Author of "Index to Shakespeare."  
GEORGIA,  
IOWA,  
KENTUCKY,  
MASSACHUSETTS,  
MICHIGAN,  
MINNESOTA,  
MISSISSIPPI,  
NEBRASKA,  
PENNSYLVANIA,  
VERMONT,  
and other articles.

**Mrs. Mary J. Reid.**

FIELD, EUGENE,  
PERKINS, WILLIAM RUFUS.

**Mrs. Alice Wellington Rollins,**

Author of "The Story of a Ranch."  
WELLINGTON, ARTHUR MELLON.

**Israel C. Russell,**

Professor of Geology in the University of Michigan.  
ALASKA.

**Hermann Schoenfeld, Ph. D.,**

Professor in Columbian University.  
VON SYBEL, HEINRICH.

**Lewis Swift, LL. D.,**

Director of Lowe Observatory, California.  
ASTRONOMY,  
SEARCH LIGHT.

**James B. T. Tupper,**

Of Internal Revenue Office.  
JUDICIARY (in UNITED STATES),  
OLEOMARGARINE.

**Robert K. Turnbull.**

BICYCLES,  
CARRIAGES, HORSELESS,  
DOG SHELTERS,  
FOOTBALL.

**J. Kendrick Upton,**

Of United States Life-saving Service.  
UNITED STATES, FINANCES OF THE.

**Frank Weitenkampf,**

Of the Astor Library.  
LITERATURE, CONTINENTAL,

**William J. Youmans, M. D.,**

Editor of "Popular Science Monthly."  
CHEMISTRY,  
METALLURGY,  
METEOROLOGY,  
PHYSIOLOGY.



## ILLUSTRATIONS.

### FULL-PAGE PORTRAITS.

RICHARD MORRIS HUNT . . . . .	Photogravure.	PAGE <i>Frontispiece</i>
FRANÇOIS FÉLIX FAURE . . . . .	Photogravure.	280
THOMAS HENRY HUXLEY . . . . .	Photogravure.	350

### PORTRAITS IN THE TEXT.

	PAGE		PAGE
DANIEL APPLETON . . . . .	513	CHARLES LANMAN . . . . .	580
CHARLES B. ATWOOD . . . . .	562	THOMAS R. MATHEWS . . . . .	512
ALFRED AUSTIN . . . . .	341	E. A. McALPIN . . . . .	506
CHARLES F. BEEBE . . . . .	510	HUGH McCULLOCH . . . . .	581
WENDELL P. BOWMAN . . . . .	516	EDWARD W. MORLEY . . . . .	32
WILLIAM K. CAFFEE . . . . .	514	JOHN NEWTON . . . . .	585
LORD RANDOLPH CHURCHILL . . . . .	606	LOUIS PASTEUR . . . . .	633
ALONZO B. COIT . . . . .	518	RUFUS W. PECKHAM . . . . .	729
HENRY AUGUSTUS COIT . . . . .	567	J. W. PLUME . . . . .	508
JAMES DWIGHT DANA . . . . .	225	FRANKLIN LEONARD POPE . . . . .	587
FREDERICK DOUGLASS . . . . .	570	CHARLES VALENTINE RILEY . . . . .	589
ALEXANDRE DUMAS . . . . .	608	CHARLES F. ROE . . . . .	511
JOHN W. EBEL . . . . .	515	GEORGE FREDERICK ROOT . . . . .	590
SIR DOUGLAS GALTON . . . . .	39	FREDERIC M. SACKETT . . . . .	509
CHARLES ÉTIENNE ARTHUR GAYARRÉ . . . . .	573	ROBERT WILSON SHUFELDT . . . . .	592
WOLCOTT GIBBS . . . . .	504	WILLIAM SMALLWOOD . . . . .	461
LINDA GILBERT . . . . .	573	GEORGE R. SNOWDEN . . . . .	507
A. C. GREGORY . . . . .	47	STEFAN STAMBULOFF . . . . .	618
JUDSON HARMON . . . . .	728	WILLIAM WETMORE STORY . . . . .	595
HENRY OSCAR HOUGHTON . . . . .	576	WILLIAM STRONG . . . . .	595
THOMAS HOVENDEN . . . . .	577	ALLEN GRANBERY THURMAN . . . . .	597
AUGUST VALENTINE KAUTZ . . . . .	578	HENRY L. TURNER . . . . .	517
ASAHEL CLARK KENDRICK . . . . .	578	WILLIAM LYNE WILSON . . . . .	728

### FULL-PAGE ILLUSTRATIONS.

#### COLORED PLATES—

MAP OF ALASKA . . . . .	12
MAP OF UTAH . . . . .	736
MAP SHOWING DISPUTED BOUNDARY OF VENEZUELA AND GUIANA . . . . .	740
SITKA, CAPITAL OF ALASKA . . . . .	13
RELICS OF A NEW RACE IN ANCIENT EGYPT . . . . .	23
SANTIAGO, CUBA . . . . .	212

COTTON STATES AND INTERNATIONAL EXPOSITION (seven views)—	PAGE
GENERAL VIEW OF THE EXPOSITION . . . . .	270
MANUFACTURES BUILDING AND ADMINISTRATION BUILDING . . . . .	271
TRANSPORTATION BUILDING AND AGRICULTURAL BUILDING . . . . .	274
ELECTRICITY BUILDING AND FINE ARTS BUILDING . . . . .	275
LAKE DWELLINGS NEAR MARACAIBO . . . . .	745
GALIBI HOUSE ON THE MARONI . . . . .	750

ILLUSTRATIONS IN THE TEXT.

	PAGE		PAGE
EXPEDITION ENTERING BAJAUR . . . . .	6	THE AIR LIFT (two figures) . . . . .	255
TOMB OF AN ALASKAN CHIEF . . . . .	11	COTTON STATES AND INTERNATIONAL EX-	
ORBITS OF VICO'S AND SWIFT'S COMETS . . . . .	57	POSITION, MAP OF . . . . .	271
BICYCLE AXLE . . . . .	87	MONUMENT AT YORKTOWN, VA. . . . .	349
BICYCLE SADDLE . . . . .	88	RESIDENCE OF THOMAS HENRY HUXLEY . . . . .	351
BICYCLE REPAIR TOOL . . . . .	90	THE WEST GATE OF SEOUL, KOREA . . . . .	385
MOTOR FOR HORSELESS CARRIAGE . . . . .	116	MEDAL PRESENTED TO PASTEUR (two	
HORSELESS CARRIAGE WITH PETROLEUM		views) . . . . .	635
ENGINE . . . . .	117	SPORTING BOAT (two views) . . . . .	636
CHINESE ANTI-CHRISTIAN CARTOONS . . . . .	139, 140	A PORTABLE ELECTRIC PROPELLER . . . . .	637
CHORRERA TOWER, CUBA . . . . .	218	A HOUSEHOLD GARBAGE CARBONIZER . . . . .	639
DOG-SHELTER AMBULANCE . . . . .	234	THE RUDOLPH CONTINUOUS INDEXER (two	
CORRIDOR IN DOG SHELTER . . . . .	235	views) . . . . .	639
COOKING APPARATUS IN DOG SHELTER . . . . .	236	SEARCH-LIGHT APPARATUS . . . . .	697
CATS IN CAGES . . . . .	237	TREBIZOND, SCENE OF AN ARMENIAN MAS-	
NORTH SEA AND BALTIC SHIP CANAL . . . . .	249	SACRE . . . . .	724

# THE ANNUAL CYCLOPÆDIA.

9455

973D

## A

**ABYSSINIA**, an empire in eastern Africa. The reigning emperor, called the Negus Negusti, is Menelek II., King of Shoa, who established himself on the throne in 1889, with Italian aid, as successor to Johannes II. By a treaty made by him on May 2, 1889, and confirmed in the following October, Italy acquired a nominal protectorate over Abyssinia, and this country is recognized as within the Italian sphere of influence in conventions made with Great Britain, and has been acknowledged to be so by Germany; but the Negus has since repudiated or denied the agreement, and both Russia—which, as protector of the Alexandrian Church, claims to have especial interest in this country—and France have refused to recognize the Italian protectorate.

The people cultivate a degenerate form of Christianity. The head of the Church, called the *abuna*, is chosen from among the Coptic clergy of Egypt by the Patriarch of Alexandria. Education is conducted by the monks and priests, who instruct a small proportion of the youth in religious music, grammar, poetry, and the Scriptures. The people raise cattle, goats, and sheep, but do not till the soil much. Indigo, cotton, and coffee grow wild, and timber and forest products are abundant. The chief exports are skins, ivory, butter, and gums. What foreign commerce there is passes through the Italian port of Massowah.

The territories administered by the Italian authorities are: The seaport of Massowah and the surrounding district, with Keren and Asmara, elevated districts where the troops are quartered, having together an area of 3,100 square miles; the Dahlak peninsula, 420 square miles, where pearls and pearl shells are gathered for export; and Assab, with an area of 580 square miles. The protectorate includes the empire of Abyssinia proper, consisting of the kingdoms of Tigre, Lasta, Amhara, Gojam, Shoa, with Kaffa, Harrar, and other territories, having a total area of about 190,000 square miles and 5,000,000 inhabitants; the territories of Habab, Bogos, Beni-Amer, Danakil, and the sultanate of Aussa; and Gallaland and the part of Somaliland conceded to Italy in the Anglo-Italian agreement of March 24, 1894. The total area recognized as under Italian influence is about 546,100 square miles, with 6,258,800 inhabitants.

The territories that have been brought under Italian jurisdiction are organized as the colony of Erythria or Eritria, which has for its seat of government the town of Massowah, containing 7,775 civil inhabitants, of whom 600 are Europeans and 480 are Asiatics. The area subject to Italian administration is 96,200 square miles, having a population of 3,452 Europeans and 191,127 natives, mostly nomads, who raise cattle, camels, sheep, and goats. There is a civil governor, appointed by the Italian Government. The military and naval commanders are independent of him, receiving their instructions from the Italian Ministry of War. The revenue and expenditure of the colony for 1894-'95 were estimated each at 9,212,117 lire, of which 1,448,000 lire were raised by local taxes and dues, and 7,764,117 lire were contributed by the Italian Government, which had expended 125,327,315 lire upon its African possessions from 1888 up to the end of 1892. Much of the trade of the country is carried on by Banians, who are British Indians. The imports of Massowah by land and sea in 1893 were 9,863,829 lire. A military railroad, 17 miles long, connects Massowah and Saati, and a telegraph line of 319 miles communicates with Assab, where it connects with one of 62 miles running to Perim. Massowah is also connected by wire with the military stations on the plateau of Keren, and a telegraph has been erected from Agordat to Kassala.

**Fighting in the Soudan.**—The walled city of Kassala in the Soudan was occupied by Gen. Baratieri, commander in chief of the Italian forces, in July, 1894, after he had administered a crushing defeat upon the dervishes and driven them across the Atbara. The place was fortified, and a garrison of 1,500 men was left there. In the winter a formidable body of dervishes laid siege to the town. Re-enforcements were sent from Agordat, and the friendly emirs of the district joined with the Italians in expelling the invaders.

**Italian Advance into Tigre.**—At the time when the dervishes appeared before Kassala Ras Mangascia, the Governor of Tigre, with an army of 10,000 men, moved toward Coatit with the evident intention of occupying the mountainous country of Ocule Kusai and beginning operations against the Italians from that vantage ground. Menelek had for some time been



supplying himself with arms and ammunition obtained from French merchants at Obok. Gen. Baratieri, who was at Asmara, decided to intercept Ras Mangascia at Coatit before he could enter the highlands. By a rapid march he gained a position on both sides of the road that the Abyssinians would have to take. His forces numbered 3,544 men, of whom 3,146 were native troops commanded by Italians. On the morning of Jan. 13, 1895, the two armies came into collision. The Italians opened fire with their artillery, to which the Abyssinians replied by a general advance. Gen. Baratieri was compelled to bring all his reserves into action to repel a flank attack on the left, before which the irregulars posted there gave way, endangering the line of retreat to Coatit. A vigorous counter-attack in front drove the Abyssinians across a ravine and held them in check while the line was being re-established on the left. The Tigrins returned to the attack on the Italian position repeatedly till night fell, and were repelled every time with severe losses.

The Italian commander had disposed his troops for a general attack on the following morning, when Ras Mangascia broke up his camp and began to retreat. The entire Italian force followed in pursuit, and overtook the enemy in the evening at Senafa, occupying the heights before the Abyssinians were able to form for attack. Two detachments took position on the right and the left to prevent a flank attack, while the guns poured shot and shell into Ras Mangascia's camp, inflicting heavy losses. The Abyssinians were seized with terror, and during the night the whole army fled, abandoning arms, ammunition, food, transport animals, and camp furniture. In the first day's fighting the Italians lost about 400 men, including 5 European officers; in the second battle they lost not a man. Ras Mangascia fled to the south, and his army broke up completely. The chieftains and priests of the country offered their friendship and submission to Gen. Baratieri, who returned after a few days to Asmara with the main body of his troops and dismissed the militia, leaving small detachments of regulars to garrison Senafa and Coatit.

The Italian Government consented, after this victory, to the continued occupation of a part of Tigre, and sent out 5 battalions of infantry and 5 squadrons of cavalry, admonishing the general not to extend his operations or to occupy territory beyond the necessities of defense. The measures to be taken were left to the discretion of the commander, who, after the re-enforcements arrived, set out with a strong force to occupy as much of Tigre as he considered necessary to hold the colony against a combined attack of Ras Mangascia and Menelek. He took possession of Adigrat on March 25, and fortified the town. Later he occupied Adowa, the chief town of the province. Ras Mangascia retired southward to seek aid of Menelek, and Gen. Baratieri, expecting war with the Abyssinian emperor, obtained from Italy several thousand rifles with which to arm native allies.

**International Relations.**—The Russian Government is the only one that has constantly refused to recognize the Italian protectorate over Abyssinia. The Russian Czar has assumed

the rôle of a protector of Abyssinian independence on the ground of the primacy of the Russian Church, of which he is the head, among the Churches of the Alexandrian creed. France disputes the Italian protectorate, moved by her *entente* with Russia and her hostility to the triple alliance. She denies especially that Harrar lies within the Italian sphere, because by an agreement with England the independence and inviolability of Harrar was affirmed, and French commercial interests demand that that independence be preserved. In May, 1891, overtures were made by the French Government toward a recognition of the Italian influence and protectorate over the whole of Abyssinia and over Harrar with the exception of Lake Assal and the surrounding region, which the Italian Government agreed to concede to France subject to certain conditions regarding freedom of trade in the salt coming from the lake. This proposed arrangement came to naught, as France broke off negotiations on account of the renewal of the triple alliance. The French and the Russians sustained the claim of Menelek that he abrogated in due form the treaty of Ucciali, in which he accepted an Italian protectorate, by denouncing it on May 24, 1894, before the expiration of the stipulated period.

The treaty arranged between Menelek and Count Antonelli contained no provision establishing the full protectorate asserted by Italy and recognized by England and Germany. The Italian text, indeed, said that Menelek should treat with foreign powers through the medium of the Italian Government, but the Amharic text merely stated that Abyssinia might make use of the Italian Government as an intermediary. When Menelek, after he had been seated on the throne with the assistance of Italy, first disputed the significance attributed to the treaty of alliance by Italy, Antonelli was sent to arrange the matter. A new convention was agreed to, regulating the boundary between Erythria and Tigre. The clause providing for an Italian protectorate Menelek would not accept, and Antonelli broke off diplomatic relations.

In January, 1895, a Russian scientific expedition set out for Abyssinia at the expense of the Geographical Society of St. Petersburg. The leader was Lieut. Nicholas Leontieff, a celebrated traveler. The party was accompanied by a Russian archimandrite, who was charged with a religious mission by the ecclesiastical authorities. Proceeding by way of Constantinople, Cairo, and Obok, through Harrar, the Russian emissaries reached Menelek's capital, where they received a cordial welcome. The religious mission was, by persuading the Abyssinians of the historical and doctrinal affiliation of the Russian and Coptic Churches, to bring the ecclesiastical authorities of the two countries into communication with each other and counteract the propaganda of the Roman Catholics, who have endeavored to convince the native Christians that their creed was identical with the Roman in essential points—viz., the sacrifice of the mass, the seven sacraments, and the reverence paid to the Virgin Mary and the saints. When the Russians returned to their own country, in June, the Negus sent with them an Abyssinian embassy to the Czar, consisting of his cousin Damto as en-

voy extraordinary; with Belyako, the King's nephew; Genemi, a general; and the bishop or chief priest of Harrar. In Russia the members of the mission were entertained in a way to impress them with the power and magnificence of the Czar, and especially with the grandeur and solemnity of the Russian Church, and when they went away they were loaded with presents for the Negus and many holy images and other symbols of the Orthodox faith.

**AFGHANISTAN**, a monarchy in central Asia. The Ameer or ruler is Abdurrahman Khan, a grandson of Dost Mohammed, who was placed on the throne in July, 1880, when British troops occupied the capital.

The population is about 4,000,000, consisting of tribes of Pathan, Iranian, Uzbeg, and Mongol as well as of Afghan extraction, Sunnite Mohammedans except 2 Shiite tribes, some peaceful in disposition and engaged in agriculture, handicrafts, and trading, others pastoral, warlike, and frequently rebellious. The present Ameer has established a firmer central government than his predecessors, aided by money and arms granted by the Government of British India. His subsidy from the Indian exchequer was increased in 1893 from 1,200,000 to 1,800,000 rupees a year. He maintains a regular army in addition to the feudal militia, and is said to have 20,000 men under arms. There are nearly 8,000 infantry and an artillery force of 76 guns. Powder is manufactured at Cabul, the capital, under the superintendence of Europeans.

The exports to India by the Sind-Pishin Railroad are fresh and preserved fruits, asafoetida, and nuts, and the imports consist of cotton goods, indigo, and sugar. Chinese tea is forwarded by this route to Russian Central Asia, with which there is a growing trade in Afghan wool and other products. Russian cotton goods constitute 40 per cent. of the total imports, and Indian cottons 20 per cent. The imports from India were valued at 4,052,000 rupees in 1894. They were twice as great in 1890.

**The British Alliance.**—The policy of the British Government is to preserve a strong, united, and independent Afghanistan as a buffer state between India and the Russian dominions in Asia. Great Britain is bound by her treaty with the present Ameer to aid him with troops in case of an unprovoked encroachment upon his frontiers. Abdurrahman has been aided and encouraged in his efforts to create a modern army, and was prompted to defend Penjdeh and to seize the native states of Roshan and Shignan in order to prevent the Pamirs from falling into the hands of Russia. British strategists no longer expect, however, to defend the northern frontiers of Afghanistan against a Russian advance upon India, but only to foster the military spirit and prowess of the Afghans, and preserve their friendship, so that they will make a stand in defense of their own country instead of allowing a free passage, or perhaps joining the invaders, as they have done in former invasions of India. The latter contingency has not been overlooked in the calculations of the British, who rely mainly on the new scientific military frontier of northwestern India, which has been fortified at enormous expense, and to obtain which not only have independent Hima-

layan states been conquered and Beloochistan annexed, but parts of Afghanistan itself have been overrun and forcibly occupied at the risk of forfeiting the friendship of the Afghans.

Abdurrahman has established in Cabul workshops in which everything requisite for an army is manufactured on a large scale under the superintendence of an English engineer, Sir Salter Pyne. In the gun factory Hotchkiss, Gardner, and Maxim machine guns, rifled cannon, and Martini and Snider breechloading rifles are turned out by means of steam machinery brought from England. Cartridges are made at the rate of 13,000 a day. Of field guns 48 are made per annum. Gunpowder is manufactured from saltpeter found in the soil, and charcoal obtained from willows planted in abundance for the purpose. Swords, sabers, and knives of fine temper are forged in quantities. In other shops are manufactured saddlery, boots, band instruments, military clothing, etc. There is a foundry in which 6 tons of metal can be cast in one piece. The rolling mills, steam hammers, boring machines, and lathes are capable of all kinds of work.

There are also large soap and candle factories. The mint has a maximum capacity of 180,000 silver rupees *per diem*. The Ameer has had a light railway laid down to bring limestone from the hills, 7 miles from Cabul, for the walls of his new palace and citadel. To improve the breed of army horses the Ameer maintains a stud of 17,000 or 18,000 animals in which the best blood of Asia and Europe is cross-bred under the direction of an English veterinarian.

Abdurrahman Khan, who was so ill in 1894 that his life was despaired of, subsequently recovered sufficiently to take up again the reins of government. He contemplated making his long-promised visit to England, but finally sent his second son, Nasrullah Khan, in his stead. When Abdurrahman dies, there may be a contest for the succession, as has often happened in this country. His chosen successor is Habibullah Khan, the eldest son, who is already his father's deputy for the administration of justice in the capital. There is already a party in favor of a younger son of the Ameer related through his mother to the Barakzai clan, the former rulers of the country, who were supplanted by the Sadozai dynasty. Ishak Khan, the pretender, who has already attempted to overthrow Abdurrahman, is now a fugitive in Turkestan, and a pensioner of the Russian treasury.

Nasrullah Khan arrived in England on May 23, 1895, with a retinue of 120 persons. He was received in state and entertained with official ceremony for several months.

**The Pamir Agreement.**—The southern limit of the Russian sphere of interest in the Pamir region was declared in the original agreement between Great Britain and Russia to be the Oxus river up to its source. The Russians have held that the Panja or southern branch of the Oxus is the true upper course of the river, being the larger and longer. The British claimed at first that the Murghab was meant, but discovered that this contention was untenable. The Chinese, instigated, as the Russians supposed, by English agents, occupied the eastern part of the Pamirs, beyond the lakes of



Yashikul and Sirikul, and the Afghans, prompted, no doubt, by the English, invaded and conquered the states of Shignan and Roshan, occupying the rest of the Pamirs. The Afghans, in their usual way, robbed and oppressed the inhabitants of the country that they sought to subjugate. The Russian authorities were immediately aware of the acts of the Chinese and Afghans, and took prompt measures to avoid being embarrassed in their legal position, by a *fait accompli*. The Chinese intruders were first expelled and the fortifications that they had erected were occupied by Russian troops. Col. Yonoff entered the country occupied by the Afghans with a detachment of Russian troops in the summer of 1894, and drove the invaders across the Panja. The British ambassador at St. Petersburg protested, and a truce was arranged. Col. Yonoff's Cossacks were withdrawn to the northern side of the Murghab, and the Afghans promised to interfere no more in Shignan and Roshan pending a settlement of the disputed points in the Anglo-Russian boundary treaty. The Afghans, after the retirement of the Russian force, re-entered the disputed territory and harassed the Tajik natives. Still the Russians remained on the Murghab while negotiations proceeded in London. The British diplomats did not persist in contending that Shignan and Roshan belonged to Afghanistan. An agreement was reached by the Earl of Kimberley and M. de Staal on March 11, 1895. The Pamirs, with the exception of the Little Pamir, were conceded to Russia, inclusive of Shignan and Roshan and all the country lying north of the Panja up to Lake Victoria or Sarikul. From that lake eastward the two spheres of influence are divided by a line which, starting from a point on that lake near its eastern extremity, follows the crests of the mountain range running somewhat to the south of the latitude of the lake as far as the Bendersky and Orta Bel passes. Thence the line runs along the same range, while it remains to the south of the latitude of the lake. On reaching that latitude it shall descend a spur of the range toward Kizil Rabat, on the Aksu river, if that locality is found not to be north of the latitude of Lake Victoria, and thence it shall be prolonged in an easterly direction so as to meet the Chinese frontier. If it is found that Kizil Rabat is situated north of the latitude of Lake Victoria, the line of demarcation shall be drawn to the nearest convenient point on the Aksu river south of that latitude, and thence prolonged as aforesaid.

It was arranged that a joint commission, composed of British and Russian delegates, with technical assistants and a military escort no larger than would be necessary for protection, should demarcate the boundary as thus defined. The British Government was permitted to arrange for the representation on the Commission of the Ameer of Afghanistan. The commissioners were charged with the duty of reporting any facts that could be ascertained on the spot regarding the situation of the Chinese frontier, with a view to enable the two governments to come to an agreement with the Chinese Government as to the limits of Chinese territory in the vicinity of the line. The British and the Russian governments engaged to abstain from ex-

ercising any political influence or control, the one to the north and the other to the south of the line of demarcation. The British Government engaged that the territory lying within the British sphere of influence between the Hindu Kush and the line running from the east end of Lake Victoria to the Chinese frontier shall form part of the territory of the Ameer of Afghanistan, and it shall not be annexed to Great Britain, and that no military posts or forts shall be established in it.

The execution of this agreement was made contingent upon the evacuation by the Ameer of Afghanistan of all the territories occupied by his troops on the right bank of the Panja, and on the evacuation by the Ameer of Bokhara of the portion of Darwaz which lies south of the Oxus, in regard to which the British Government and the Government of Russia agreed to use their influence respectively with the two Ameers.

The British commission was constituted with Col. Gerard as chief commissioner, and Col. Holdich and Major Wahab as survey officers. The Russian commission was composed of Gen. Schweikoffsky as chief officer, with M. Panafidin and Col. Galkin as assistants. The commissioners proceeded to the ground in July.

**Chitral.**—The extending of British political power over the border tribes between the Indus valley and the Hindu Kush began before the Russians became active in the Pamirs. Costly little wars have been carried on under the name of punitive expeditions against the tribes that have hitherto owed allegiance to Cabul, and political agents have been placed in the independent states bordering upon Afghanistan and the Pamirs from Khelat to Cashmere. Chitral, a state that has been politically dependent upon Afghanistan, occupies a valley into which lead three passes of the Hindu Kush. This is a Mohammedan state that was consolidated by the Mehtar Aman-ul-Mulk. The people are Afghans, speaking the Afghan language. A British mission was sent to that ruler in 1885 under Col. Lockhart. When the old Mehtar died, in 1892, Afzul-ul-Mulk seized the throne, murdered a number of his half brothers, marched against Nizam-ul-Mulk, his own brother and the legitimate heir, who was Governor of Yasin, and drove him to take refuge under British protection at Gilgit. The Government of India recognized this usurping Mehtar, but he was killed in defending the throne against a rival, his uncle Sher Afzul, who raised a force in the neighboring Afghan province of Badakshan, where he lived in exile, killed the governor of the province, and captured the citadel of Chitral by surprise. The new usurper won the affections of the Chitralis by dispensing munificently the hoarded treasure of old Aman-ul-Mulk; but he was not acceptable to the British, having attained power with the help of the Afghan Ameer, to whom he looked for further support. They therefore set free their prisoner, Nizam-ul-Mulk, and enabled him to enter Chitral with a force recruited in Gilgit, supporting him with British troops, which moved upon Yasin and permanently occupied that province. Sher Afzul, after a single brush with the invaders, fled back to Afghanistan and was interned at Cabul.

Having established Nizam-ul-Mulk upon the throne, the British stationed a political agent in Chitral, Mr. Robinson, who arrived in January, 1893. He remained in the capital till the September following, and then removed his headquarters to Mastuj, nearer Gilgit. Nizam never was popular, and after he came back as the puppet of the English and the betrayer of the ancient independence of the country he led a lonely life, having no pleasure but hunting and hawking. On Jan. 1, 1895, he was murdered at the instance of his half brother Amir-ul-Mulk, a young man of nineteen, who proclaimed himself Mehtar and asked Lieut. Gurden, who happened to be in Chitral with a guard of only 8 soldiers, to recognize him as the ruler. While the British political agent temporized, and before the new pretender had won many adherents or obtained popular recognition, Umra Khan, chief of the neighboring state of Jandol, who had murdered his brother and seized the throne in 1879, and since then pursued a career of conquest, aided and encouraged by the British authorities, who furnished him with modern arms and military instructors, invaded Chitral, a slice of which he had annexed to his dominions some years before. Probably his aid was solicited by Amir-ul-Mulk, who had married his daughter. But he, having no confidence in this incompetent young man, summoned Sher Afzul in Cabul to join him in expelling the British, promising to establish the exile as Mehtar. The army of Umra Khan fought a successful battle with the Chitralis on Jan. 25, and laid siege to the fortress of Drosh. Meanwhile the Sikh guard of 50 men had come down from Mastuj to protect the British resident, and on Jan. 30 Dr. G. S. Robertson, the political agent at Gilgit, who had been ordered to go to Chitral to inquire and report in regard to the succession to the throne, arrived with 150 Gurkha troops and 33 Sikhs. This escort was strengthened a few weeks later by another hundred, making 341 men, provided with 200 rounds of ammunition and rations for three months. Kala Drosh, defended by 300 Chitralis, two thirds of whom had Snider rifles, was captured by the Pathan army of 3,000 men, of whom 500 had Snider and Martini rifles, in the middle of February. About the same time Sher Afzul, whom the Ameer of Cabul had permitted to escape at this critical juncture, appeared in the camp of Umra Khan, who received him with open arms and put him forward as a candidate for the throne as the champion of national independence. Sher Afzul was jubilantly greeted as their sovereign and hero by the Chitralis, especially in Lower Chitral, who passionately demanded deliverance from British subjugation. The British shut themselves up in the fortress at Chitral, which was closely invested. The Indian Government ordered 1,000 troops to Chitral from Gilgit, one third of the garrison that was kept there to defend the whole frontier, and prepared to send a division of 14,000 men from Peshawur, which was only 186 miles from Chitral, nearer than Gilgit, but the route went over a snowy pass, 10,000 feet high, the one Umra Khan's army had traversed. While arrangements were being made for this difficult march, warning was sent

to Umra Khan to evacuate Chitral before April 1, else he would be forcibly expelled, for the country was under the suzerainty of Cashmere, as he had been already informed on the occasion of his previous aggression upon Chitral territory. At the same time the Indian Government issued a proclamation to the tribes living along the line of march, saying that they would not be molested if they remained quiet, and stating that the object of the expedition was to put an end to the present and to prevent any future unlawful aggression upon Chitral territory.

Sher Afzul established himself in the town of Chitral and was received as Mehtar by the people of the country, while Amir-ul-Mulk took refuge with the British in the fortress. Capt. Baird led out a reconnoitering party on March 3, when Sher Afzul first arrived, and, not knowing that the whole place was in the possession of the enemy, he was taken in the rear and fought his way back with heavy loss. He received a wound from which he died, and a general and a major of the imperial service troops were killed, with 21 noncommissioned officers and sepoy, while Capt. Campbell and 28 men were wounded. The fort was closely invested on the following day. On March 8 the enemy attempted to fire the water tower, but were driven off. On March 14 they assailed the eastern side of the fort, and were again repelled. On April 5 they occupied a summerhouse in the garden of the fort, within 50 yards of the gun tower, and on the 7th they attacked the tower and set it on fire, and at the same time attempted to destroy the water way by which the garrison was supplied with water from the river. The defenders finally beat them off, but not without suffering heavy losses in killed and wounded. The besiegers were armed with excellent rifles, and displayed wonderful marksmanship. They renewed their attempt to fire the gun tower on the 8th, and on the 11th carried out a general attack on all sides of the fort, in repelling which Mr. Robertson was badly wounded. The besiegers advanced then with regular siege works, bringing their mines up to within 30 feet of the walls. On April 17 the officers in the fort decided on a sortie. Lieut. Harley led a bayonet charge, captured the summerhouse after a desperate fight at close quarters, and blew up the enemy's mine. The garrison lost 8 men killed and 13 wounded, while of the enemy 60 were killed, more than half of them with the bayonet. In the meanwhile relief was approaching from both the north and the south, and on April 18 Sher Afzul raised the siege and withdrew with his forces to Kala Drosh.

The garrison at Mastuj, 300 strong, endeavored to keep up communications with Chitral. While on their way to that place Lieut. Fowler and Lieut. Edwardes were besieged at Reshun, 30 miles north of Chitral. After resisting for seven days the intermittent attacks of the tribesmen, the British officers and 9 sepoy were captured and taken as prisoners to Sher Afzul at Chitral, and afterward to Umra Khan's headquarters at Barwa. They were treated well by the chief, who finally released them to save their lives from his own fanatical followers.

A detachment of 74 Sikhs under Capt. Ross





THE CHITRAL EXPEDITION ENTERING BAJAUR, VALLEY OF THE PANJKORA.

hastened on from Mastuj to succor Lieut. Fowler and Lieut. Edwardes in Reshun. The Chitralis attacked and almost annihilated this force on Feb. 9 in a defile near Karagh, killing Capt. Ross and 54 men. The enemy, outnumbering the Indian troops tenfold, caught them in a difficult position where their rifles were ineffective against stones that were hurled by the tribesmen down the hillsides, knocking down men in the ranks. Lieut. Jones, who was wounded, retreated to Boni with only 14 men left, and remained there until he was relieved a week later by a detachment from Mastuj.

Lieut.-Col. J. G. Kelly, commanding a regiment of pioneers in Gilgit, was ordered to march toward Chitral to relieve the pressure on the garrisons in Mastuj and Chitral, and avert, if possible, a general uprising against British authority in both Chitral and Yasin and the destruction of the 4 military posts held by fewer than 700 men. Col. Kelly set out from Gilgit on March 23 with 400 pioneers and 2 mountain guns. At Ghizr the force was augmented by 40 Cashmere sappers and miners and 100 Hunza-Nagar levies, making in all about 600 fighting men, afterward increased by 50 levies under Rajah Akbar, Khan of Punyal.

Capt. Borrodale succeeded in making a road over the Shandur pass, 12,230 feet high, which was covered so deep with snow as to be impracticable for beasts of burden. For 7 miles the guns were carried on the shoulders of men. As the expedition descended into the valley of Chitral the enemy were found posted at Chakalwat and other places. Their positions were turned by the Hunza levies, who flanked them from the

crag above and cleared the *sangars*, or stone breastworks, with the aid of the artillery, driving the Chitralis in precipitate flight down the valley. In this action, which opened the way to Mastuj, Col. Kelly lost only 5 men wounded, and inflicted on the enemy a loss of 25 killed and 50 wounded. The first division reached Mastuj on the same day, April 9, and halted there three days for the rest of the force to come up. A second engagement took place when the march was resumed. Mohammed Isa held a strong position at Nisa Gol with 1,500 men against 622 who advanced to the attack; but with their guns the British cleared the road and henceforth they encountered no opposition, and on April 20 reached Chitral.

A part of the re-enforcements were sent by the Maharajah of Cashmere, the suzerain of Chitral, belonging to the imperial service troops which he held at the disposal of his suzerain. The Ameer of Afghanistan, who was ready to re-establish his rule over Chitral and the states that Umra Khan had conquered, sent a division of his army to the frontier to watch, with orders not to interpose unless the Indian Government decided to withdraw from the country and permit the Afghans to come in. This the Indian statesmen would not consent to, fearing that the Chitralis at least would find Afghan rule as irksome as it proved to their neighbors of Wakhan, Shignan, and Roshan.

Gen. Sir Robert Cunliffe Low started with his expeditionary force on April 1, no satisfactory answer having been received from Umra Khan. A metalled road was constructed, and the rough stairs that served as a path over the Malakand



pass were converted into a road for camels and artillery. The Swatis and Yusufzais, numbering 30,000 fighting men, prepared to resist the British columns in accord with Umra Khan, who attempted to proclaim a *jehad* or religious war, but was not supported in this by the Mollah of Manki. The Malakand pass was the only strong position. Reaching this point after three days' march, Sir Robert Low sent one of his three brigades to the Shahkot Pass for a diversion, while with another under Col. Waterfield he ascended the Malakand. The British worked their way slowly onward, shelling with mountain guns the Swatis out of the stone breastworks behind which they were posted, and sweeping the road and the heights with machine guns. The other brigade came up with artillery at a critical bend in the road where the Swatis had placed their strongest defenses, and where they terrified the troops by rolling pieces of rock down upon them. The Gordon Highlanders, the Scottish Borderers, and a regiment of Dogras here charged up the hill and dislodged with their bayonets the Swatis, who fought stubbornly until they were taken in the flank by the Guide Corps, when they fled, leaving the pass in the hands of the British. The latter lost 11 killed and 33 wounded, including 8 officers. The brigade constituting the advanced guard encountered 5,000 Swatis, who blocked the road to the Swat river and fought another sharp battle, which was ended by a dashing cavalry charge of the Guides. Over the river a trestle bridge, succeeded later by a permanent suspension bridge, was built under a heavy fire, and after crossing the river a Bengal regiment charged and routed the enemy, and Chakrana was occupied, while the Scottish Borderers, fording the river farther up, took Thana fort, where a brother of Umra Khan was in command. The Swatis and Bajaul tribesmen, after being defeated, made their submission and settled down at once, and Umra Khan's followers dwindled as the British advanced. On April 13 the Guides were attacked by the enemy, and Col. Battye, the commanding officer, was killed. The force retreated, but resumed the advance almost immediately. The second brigade attacked Dir, capturing the fort by storm, with the garrison and its commander, Umra Khan's brother Mohammed. Gen. Low gained the friendship of the Khan of Dir in order to get his assistance in relieving the beleaguered garrison at Chitral.

Umra Khan's force, reduced to 600 men, offered slight resistance to Sir Robert Low's column, which advanced to Miankalai, the principal town of Bajaur, skirmished with the enemy for two days, and on April 18 prepared to attack Munda, the chief fort; but they found it deserted, Umra Khan evacuating the country with all his men. He threw himself upon the protection of the Ameer at Cabul, who upbraided him for his wrongdoing, but accorded him the hospitality that he claimed as a Mohammedan. He gave him two villages, but on complaints from the British placed him under guard.

Col. Kelly had by this time reached Mastuj and relieved the garrison, which had been closely invested for eighteen days. He pushed on, defeating the enemy at Nisagal on April 13, and approached Chitral simultaneously with some

tribesmen from Dir whom Gen. Low had taken into his service and sent ahead in all haste to raise the siege. Sher Afzul's forces, thus caught as in a vise, melted away. Sher Afzul, with his principal lieutenants and about 1,500 men, was surrendered to the Khan of Dir. The relieving force from the north arrived before Gen. Gatacre with the advanced guard of Gen. Low's force had crossed the Lowarai pass. The casualties sustained during the investment were 39 killed and 62 wounded. The total cost of the campaign exceeded £1,000,000.

The British, being now established as masters of Chitral, deposed the Mehtar Amir-ul-Mulk and carried him off to India as a prisoner of state. In his place they set up his brother Shuja-ul-Mulk, who was only nine years old, but was the last remaining legitimate son of Aman-ul-Mulk. Sher Afzul was captured with his brothers and thrown into prison.

The future of Chitral was made the subject of a long controversy by the Indian statesmen and strategists. The Indian Government officials and the army officers in India generally favored its retention, although this would require the building of a road over the mountains and entail an addition of 3,000 men to the peace strength of the Indian army and a permanent increase of £250,000 in the annual budget. The reason that a British garrison was originally placed in Chitral was that, after Col. Yonoff had made a reconnoissance in the northern part of the country in 1891, Russian journalists boasted that in the event of a war between Great Britain and Russia a small force could cross the Hindu Kush at this point and start a rebellion against the British rule in Cashmere and the neighboring countries. Some of the British military men were now convinced that Chitral was of no strategical value, but that, having once established themselves there, the British could not now retire without weakening their prestige along the whole frontier. The Chitrali tribesmen continued to attack the British posts that were established in the country, and the Liberal Government decided to withdraw as soon as the operation could be carried out consistently with dignity and safety. To hold Chitral without a permanent road from Peshawur was out of the question, and such a road could not be built and kept open without breaking faith with the tribes, to whom Gen. Low had given the assurance that no occupation of their country was intended, nor without subjugating those tribes, the Swatis, Yusufzais, Bajauris, Mohmands, and Bunerwals, numbering over 60,000 fighting men. The Liberal Government in England having resigned without taking any definite steps to carry out their decision, their successors determined to give more study to the problem, meanwhile continuing the military occupation of Chitral. They decided to retain the country, promising the Indian Government that the army would not be increased and that only one native regiment would be added to the garrison previously posted in Gilgit and Chitral, native levies being depended upon to guard the road between Kila Doshi and the Swat river, for which a shorter and easier route was found than that followed by Gen. Low's expedition. As soon as was practicable the British troops would aban-

don the country west of the Panjkora river, comprising the former dominions of Umra Khan, the northern part being added to the territory of the Khan of Dir and Bajaur restored to tribal government.

**Waziristan.**—The survey and establishment of the agreed boundary between Afghanistan and Beloochistan necessitated the military occupation of Waziristan by a large force under Sir William Lockhart. Flying columns went through the country in January, 1895, and destroyed the villages of the Mahsuds, whose mollahs and chiefs had opposed the British occupation. The Waziris also fired upon them, and were punished by the destruction of their habitations and the confiscation of their cattle. The Waziris paid the fine that was imposed upon them and delivered up their arms. By the middle of February 350 miles of the border were demarcated, up to Chaman, half way to the Persian frontier. The Maliks, representing the Afghan Government, concurred in the line as surveyed by British officers. After the northern section, from Charkiaghur to Mount Laram, on the northern border of Waziristan, had been demarcated the commissioners returned to India in April.

**ALABAMA**, a Southern State, admitted to the Union Dec. 14, 1819; area, 52,250 square miles. The population, according to each decennial census since admission, was 127,901 in 1820; 309,527 in 1830; 590,756 in 1840; 771,623 in 1850; 964,201 in 1860; 996,992 in 1870; 1,262,505 in 1880; and 1,513,017 in 1890. Capital, Montgomery.

**Government.**—The following were the State officers during the year: Governor, William C. Oates; Secretary of State, James K. Jackson; Treasurer, J. Craig Smith; Auditor, John Purifoy; Attorney General, William C. Fitts; Commissioner of Agriculture, H. D. Lane; Superintendent of Public Instruction, John O. Turner; Adjutant General, Charles P. Jones; Chief Justice of the Supreme Court, Robert C. Brickall; Associate Justices, Thomas N. McClellan, Thomas W. Coleman, James B. Head, and Jonathan Haralson; Clerk, Sterling A. Wood—all Democrats.

**Finances.**—The total bonded debt of the State on Oct. 1, 1894, was \$9,299,400, of which \$8,345,400 are payable on July 1, 1906, and \$954,000 on Jan. 1, 1920. Under act of the Legislature these outstanding bonds may be increased by \$249,600 to exchange for old bonds, as follows: Class A, bonds bearing 4 per cent. interest till July, 1896, and 5 per cent. thereafter, \$195,600; Class B, bonds bearing 5 per cent. interest, \$18,000; and Class C, bonds bearing 4 per cent. interest, \$30,520. All bonds due in 1906 were issued in 1876; those due in 1920 were issued to retire the 6-per-cent. bonds of 1880. The annual interest charges on the bonds now outstanding aggregate \$377,756. In January, 1895, Gov. Oates reported that in addition to the regular bonded debt of the State there were liabilities amounting to \$3,214,356, comprising bonds in favor of the Agricultural and Mechanical College past due, \$253,500; indebtedness of the State to the State University for which the latter has never received any evidence, \$300,000; indebtedness of the State to the public schools on account of the "sixteenth section trust fund," \$1,991,770; and principal of money deposited

with the State by the United States Government in 1836, subject to be called for at any time, on which the State pays 4 per cent. interest, which goes to the support of the public schools, \$669,086. The Governor urged the Legislature to enact a sinking-fund law, by which the State debt might be gradually extinguished, and to amend the refunding act so that the bonds may be subject to call for redemption after ten or twenty years. He indicated measures which, in his judgment, would reduce the aggregate interest charged by \$140,000 per annum.

**Valuations.**—The total assessed valuation of taxable property in the State in 1894 was \$243,171,677, the tax rate was 5 mills, and the amount of taxes \$1,217,281. The assessed valuations in 1893 amounted to \$260,172,590, and the taxes to \$1,302,473, also on a 5-mill rate. In 1891 taxable property reached its highest valuation in the history of the State (\$275,316,491), and in 1893 the tax receipts were the largest.

**Banking.**—According to the last published report of the United States Comptroller of the Currency, Alabama had, on Oct. 31, 1894, 27 national banks. The combined capital was \$3,694,000; amount of United States bonds held to secure circulation, \$1,108,500; excess of such bonds beyond requirement, \$378,750; amount of coin and coin certificates held, \$594,869; notes issued for circulation, \$7,035,860; redeemed, \$5,839,647; outstanding, \$1,196,213; and loans and discounts, \$6,388,466. The State banks numbered 11, and had a combined capital of \$592,400, resources of \$1,213,108, deposits of \$340,889, and surplus and undivided profits of \$122,697. There were 4 savings banks, with combined capital of \$380,000, resources of \$855,420, deposits of \$368,051, and surplus and profits of \$64,513. Six private banks had a total capital of \$437,500, resources of \$1,042,515, deposits of \$450,242, and surplus and profits of \$118,222.

**Education.**—The State appropriation for public schools is about \$500,000 per annum, exclusive of the poll tax, which if fully collected would make the amount about \$750,000. The Governor, in a special message in January, called attention to the State's indebtedness to the school funds, reviewed the condition of the various institutions, and urged the imposition of a specific rate of taxation for schools, to be separate from other State taxes, believing that such taxation would be met more willingly by the people when they could see just how much they were paying directly for educational purposes and how much from the general fund as interest on the school trust funds. The following are the appropriations for the principal institutions: Agricultural and Mechanical College at Auburn, \$20,280; normal college for whites at Florence, \$7,500; normal college for whites at Troy, \$3,000; normal college for whites at Jacksonville, \$2,500; normal college for white girls at Livingston, \$2,500; normal college for the colored at Montgomery, \$7,500; normal college for the colored at Huntsville, \$4,000; and the normal college for the colored at Tuskegee, \$3,000. Besides the State appropriations, the Agricultural and Mechanical College receives annually from the congressional land grant under the



Morrill bill about \$11,000; the agricultural experiment station connected with the college receives annually under the Hatch bill about \$15,000; and the normal schools receive annually from the Peabody fund an aggregate of \$3,500; one of them from the Slater fund, \$2,500; one from the Morrill fund, \$8,000; and all, from cities, towns, and tuition fees, a total of about \$70,000.

**Railroads.**—On Dec. 31, 1893, the total single-track mileage was 3,627.89; during 1894 five lines added a total of 14.5 to their mileage; and on Dec. 31, 1894, the aggregate mileage was 3,642.39. The railroads represented a total capital investment of over \$117,750,000; had a funded debt of nearly \$60,000,000, and an investment in roadbed and equipment of over \$106,000,000; paid for interest on bonds over \$1,500,000; and had net earnings of nearly \$1,500,000.

**The Iron Industry.**—According to the report of the United States Geological Survey on "Mineral Resources" for the year 1894, issued in 1895, Alabama ranked third among the States in the production of iron ores. The total output was 1,493,086 long tons, or 12.57 per cent. of the whole production of the United States, valued at \$1,240,895. Of this total, 1,182,362 tons, or 79.19 per cent., was red hematite, and 310,724 tons, or 20.81 per cent., brown hematite. Although the State has an abundance of iron ores close to the coal basins, it has so far made no Bessemer pig iron, the ores exploited being too high in phosphorus. The average value of the iron ore in 1894 was 83 cents a ton, somewhat less than in the preceding year, but greater attention was being paid to the grading of ore used in furnaces. Manganese ores are found in the Murphrees valley, from 50 to 150 feet above the black shale of the lower siliceous group, with some traces in the La Grange sandstone. Dr. E. A. Smith, the State geologist, believes that the great bulk of these ores will be found in the Sand valley and on the northwest side of Red mountain; that the discoveries so far made are in the main accidental; and that probably the larger portion of the deposits that exist are as yet undiscovered. In October, 1895, the Tennessee Coal, Iron, and Railroad Company received a telegram from the Carnegie Steel Company, of Pittsburg, Pa., saying that 5,000 tons of low silicon iron, made of Alabama red ore, and shipped to Pittsburg, had been thoroughly tested and found to be in every respect suitable for direct conversion into steel. An additional shipment of 20,000 tons of the same grade was ordered. The results of this experiment remove all doubt as to the ability to make steel from low silicon Alabama iron, which is the product of ordinary red ore—a fact heretofore disputed. The production of iron ore in 1895 was expected to exceed the output of the preceding year, as the mines were being taxed to their utmost to supply the demand, the furnaces and mills were running on full time, and the railroads found it difficult to supply cars for the products.

**Coal.**—State Mine Inspector Hillhouse reported in October, 1895, that, from figures at hand and close estimates on the production for November and December, the output of coal for the year would be 6,000,000 tons, or 750,000 tons

in excess of that of 1893, which was the largest production in the history of the State to that time, and almost 2,000,000 tons more than were mined in 1894. All the old mines and many new ones were being worked to the utmost.

**Cotton and Woolen Mills.**—A census of the cotton and woolen manufacturing interests of the Southern States, in April, 1895, showed that Alabama had 26 mills, operating 164,898 spindles, 2,756 looms, and 517 cards. Twenty-one mills had a capital investment of \$3,678,000. The largest cotton-mill plant was in Huntsville, which was capitalized at \$650,000, and had 25,000 spindles and 750 looms. Other plants were capitalized at \$500,000, \$300,000, and \$250,000 each, and 7 at from \$200,000 to \$100,000 each. Besides the mills then in operation, 11 others were being constructed, one at Gadsden to employ a capital of \$600,000 and operate 25,000 spindles, and a similar one near Rome, both belonging to Massachusetts corporations.

**Taxable Manufactures.**—In the fiscal year ending June 30, 1894, the collections of internal revenue aggregated \$112,582.45 from the following sources: Distilled spirits, \$51,490.85; tobacco, \$15,458.31; fermented liquors, \$38,451.49; oleomargarine, \$5,609.60; and penalties, \$1,572.20. The same sources yielded a total of \$88,719.83 in the fiscal year ending June 30, 1895. The number of tobacco factories in 1894 was 47, which had a total output of 5,243,693 cigars; and of grain, molasses, and fruit distilleries, 105, of which 100 were in operation, producing 17,850 gallons of distilled spirits and 36,465 barrels of fermented liquors.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of 1894: Corn, 2,537,249 acres, 34,760,311 bushels, value \$18,422,965; wheat, 50,274 acres, 417,274 bushels, value \$325,474; oats, 371,996 acres, 4,910,347 bushels, value \$2,504,277; rye, 2,145 acres, 28,529 bushels, value \$27,103; potatoes, 5,913 acres, 254,259 bushels, value \$223,748; and hay, 72,803 acres, 195,112 tons, value \$1,855,515; total value, \$23,359,082. The same authority reported the cotton crop of the year as 825,746 bales, and the New Orleans Cotton Exchange reported it for 1895 as 1,000,000 bales.

**Live Stock.**—In January, 1895, the United States Department of Agriculture estimated the number and value of farm animals in the State as follows: Horses, 123,400, value \$5,769,369; mules, 125,936, value \$7,265,473; milch cows, 317,978, value \$3,434,162; oxen and other cattle, 545,134, value \$3,738,913; sheep, 326,640, value \$474,804; and swine, 1,680,816, value \$5,385,336; total value, \$26,068,057.

**Political.**—At a conference in Birmingham, Nov. 13, it was decided that the Populists should co-operate with Republicans and other anti-Democrats in the next State campaign.

**ALASKA.** The Territory known as Alaska was ceded by Russia to the United States in a treaty concluded March 30 and proclaimed June 20, 1867, in consideration of the payment of \$7,200,000.

**Boundaries.**—The main body of the Territory is bounded on the east by the one hundred and forty-first meridian, on the north by the Arctic Ocean, on the west by Bering Sea and

strait, and on the south by the Pacific Ocean. Southeast of the main body there is a strip of land, known as Southeast Alaska, 10 marine leagues ( $34\frac{1}{2}$  statute miles) broad and about 600 miles long, besides numerous islands. The position of the boundary of this southeastern extension is now a matter of dispute between Great Britain and the United States. The boundary agreed on in the purchase of Alaska is defined in a treaty between Russia and Great Britain, made in 1825, as follows:

Commencing from the southernmost point of the island called Prince of Wales island; which point lies in the parallel of  $54^{\circ} 40'$  north latitude, and between the one hundred and thirty-first and one hundred and thirty-third degree of west longitude (meridian of Greenwich), the said line shall ascend to the north along the channel called Portland channel as far as the point of the continent, where it strikes the fifty-sixth degree of north latitude; from this last mentioned point the line of demarcation shall follow the summit of the mountains situated parallel to the coast as far as the point of intersection of the one hundred and forty-first degree of west longitude (of the same meridian); and, finally, from the said point of intersection the said meridian line of the one hundred and forty-first degree, in its prolongation as far as the frozen ocean, shall form the limit between the Russian and British possessions on the continent of America to the northwest. With reference to the line of demarcation laid down in the preceding article it is understood—1, that the island called Prince of Wales island shall belong wholly to Russia; 2, that wherever the summit of the mountains which extend in a direction parallel to the coast from the fifty-sixth degree of north latitude to the point of intersection of the one hundred and forty-first degree of west longitude shall prove to be at the distance of more than 10 marine leagues from the ocean, the limit between the British possessions and the line of coast which is to belong to Russia, as above mentioned, shall be formed by a line parallel to the windings of the coast, and which shall never exceed the distance of 10 marine leagues therefrom.

**Area.**—The area of Alaska, as nearly as can be estimated, is 578,000 square miles, over eleven times as large as the State of New York. The general coast line is 4,000 miles long, and, including the shores of bays, islands, etc., is estimated to measure between 10,000 and 12,000 miles.

**Drainage.**—Alaska is drained principally by the Yukon river, which rises in the northwestern part of Canada, flows westward into Bering Sea, and divides the Territory into two nearly equal portions. The Yukon ranks among the great rivers of the world. It is about 2,000 miles long, and drains a forest-covered country 440,000 square miles in extent, half of which lies in Alaska. It has been ascended by small steamers as far as Selkirk House, 1,500 miles from its mouth. Many of its tributaries are navigable. The streams are usually open for navigation and free of ice by July 1, but are closed again about Oct. 1. The Kowak and Noatak rivers, which enter Bering Sea north of the delta of the Yukon, have been navigated by steam launches; and the Kuskokwim, flowing into Bering Sea south of the Yukon, drains an area of 800,000 square miles, and is said to be navigable. Of the several streams in southern and southeastern Alaska rising east of the mountains adjacent to the coast, the Stikine, the most southerly, has been ascended 200 miles.

**Mountains.**—The principal mountain systems of Alaska extend along the southern coast, and a partially submerged continuation of the same system forms the Aleutian Islands. The culminating points of this great mountain belt are Mount Logan, 19,500 feet high, in Canada (latitude  $60^{\circ} 34' 63''$ , longitude  $140^{\circ} 24' 17''$ ), and Mount St. Elias, 18,023 feet (latitude  $60^{\circ} 17' 35.1''$ , longitude  $140^{\circ} 55' 47.3''$ ), in the United States. Many neighboring peaks, several of which are more than 15,000 feet high, combine with the lofty summits just named to make the St. Elias region the most rugged and inaccessible on the continent. Mount Logan, named in honor of the first director of the Geological Survey of Canada, is, so far as now known, the highest peak in North America. Its nearest rival is Mount Orizaba, Mexico, which is between 18,200 and 18,300 feet high. A lofty peak west of Copper river, in about latitude  $63^{\circ} 30'$  and longitude  $147^{\circ}$ , is reported by the few frontiersmen who have seen it to rival Mount St. Elias in elevation.

**Volcanoes.**—The only active volcanoes in the United States are in Alaska. In the Alexander archipelago (where Sitka is situated), on the Alaskan peninsula and on the Aleutian Islands, there are many mountains of recent volcanic origin, about 10 of which have been in eruption since the purchase of the Territory. Several of these—as Shishaldin, on the island of Unimak; Makuskin, on Unalaska island; and Bogoslof, on a small island of the same name, about 60 miles west of Unalaska—are constantly emitting steam, and occasionally have a violent eruption. Recent examinations have shown that Mount St. Elias is not volcanic, but owes its origin to the upheaval of a block of the earth's crust bounded by fractures.

**Glaciers.**—The glaciers of Alaska are, with the exception of those of Greenland, the largest and most instructive in the northern hemisphere. The great glacier system to which they belong begins at the south in the High Sierra of California, in about latitude  $37^{\circ}$ , and extends northward along the Cordilleras, through western Canada and southern Alaska to the western extremity of the Alaskan peninsula, and embraces also some of the Aleutian Islands. This belt of snow fields and glaciers, 3,000 miles long, reaches its greatest development in the St. Elias region, where the mountains for 80 miles inland from the coast are literally buried beneath vast *névés*, or snow fields, from which streamlike glaciers of the same type as those of Switzerland flow both north and south. Those flowing south are much the larger, and in some instances have a length of over 50 miles. Many of the southward-flowing glaciers reach the sea, and, breaking off, send thousands of icebergs afloat. The best known of these tide-water glaciers end in Taku inlet and Glacier Bay, and are visited every summer by hundreds of tourists. Much larger glaciers of the same type occur at the head of Yakutat Bay, 250 miles west of Glacier Bay. Still farther west, about the base of Mount St. Elias, the alpine glaciers from the north unite on a plain adjacent to the sea, and form a plateau of ice, known as Malaspina glacier, that is 1,500 square miles in area, and not less than 1,500 feet thick. The outer or seaward



margin of this great Piedmont ice sheet is heavily covered with stones and earth, on which grow dense forests.

The snow line, or lowest limit of perennial snow, in the St. Elias region is about 2,500 feet above the sea. Below the snow line, in summer, every mountain spur and every island in the ice is covered with a luxuriant growth of brilliant alpine flowers.

In central and northern Alaska glaciers are absent; but beneath the forests in many localities, and under the luxuriant moss of the low, flat, swampy lands, known as *tundras*, that

forests are dense. The trees are frequently fine, and reach a height of 150 feet. Beneath the forests and extending above the timber line the ground is deeply covered with moss and luxuriant ferns. The majority of the trees are spruce, of which 2 species, the Menzies and the Mertens, are about equally abundant. Cedars are plentiful, the most valuable being the yellow cedar, celebrated for the beauty and durability of its fine yellow and fragrant wood. This is especially valuable for shipbuilding, but unfortunately the supply is limited. The timber laws in force in the older portions of the United



TOMB OF AN ALASKAN CHIEF.

fringe the coast of Bering Sea and the Arctic Ocean, the soil is always frozen. The depth of this subsoil ice is known in some instances to exceed 200 feet.

**Forests.**—In southeastern Alaska the upper limit of timber growth, or the "timber line," is at an elevation of 4,000 feet, but it decreases in elevation when followed westward along the coast. At the base of Mount St. Elias it is only 1,500 feet, and it reaches sea level on the Alaskan peninsula. Kodiak island, the Aleutian Islands, and a belt of country about 100 miles broad fringing the shores of Bering Sea and the Arctic Ocean (the tundra belt), are treeless. Throughout the southeastern portion of the Territory as far westward as Yakutat Bay the

States have not been extended to Alaska, and the forests are still practically untouched. A few sawmills have been established to meet the local demand for lumber, but exportation is prohibited.

In central Alaska, and especially in the region drained by the Yukon, the forests are dense, but of small growth. The trees are mostly white spruce, and of minor value for lumber. Cottonwood and small willows grow along the streams, but hard-wood trees are wanting.

Throughout the Territory berries of many kinds—including huckleberries, salmon berries, black currants, dwarf raspberries, and strawberries—grow luxuriantly, and are largely used by both the natives and white inhabitants.



**Climate.**—The climate of Alaska presents marked diversities. In the southeastern and southern part of the Territory the annual rainfall is heavy, sometimes exceeding 100 inches, and is distributed through every month of the year. The summers are cool and humid, the winters mild, with an increased rainfall and light snow at sea level. In the mountains the snowfall is excessive. On the shores of Bering Sea and the Aleutian Islands the summers are cold and humid, the winters prolonged, with rain and snow, but the temperature is not low, and not marked by great variations. In the interior, especially on the Yukon, the summers are short, dry, and hot; the winters long and extremely cold, but the snowfall is not heavy. The climate of the southeastern and southern shore, including the Aleutian Islands, although humid, is especially favorable to health.

**Inhabitants.**—The natives belong to two great stocks, the Eskimo and the Indian. The former inhabit some of the Aleutian Islands and the shores of Bering Sea and the Arctic Ocean; the latter occupy the interior and southeastern portion of the Territory. A few Russians still remain, although many emigrated at the time of the purchase of the Territory. Where the natives have come in contact with foreigners there are many half breeds. Since the beginning of American rule the white population has increased. The eleventh census (1890) gives the population as follows:

CLASSES.	Total.	Males.	Females.
Natives .....	23,532	12,106	11,426
White.....	4,298	3,853	445
Mixed.....	1,814	891	923
Total....	29,644	16,850	12,794

It is estimated that since 1890 the white population has been increased about 1,000 by immigrants, most of whom are miners that have settled at Juneau and other mining camps or gone to gold fields on the Yukon. The principal centers of the white population are: Juneau, 671; Sitka, 280; Wrangle, 71; Kadiak, 127; Unalaska, 66.

**Government.**—Alaska was without civil government from the time of its purchase to May 17, 1884, when it was made a "civil and judicial district" and the general laws of Oregon were extended to it. Although frequently designated as a Territory, it is not so legally. In the act referred to above it is expressly stated that "there shall be no legislative assembly in said district, nor shall any delegates be sent to Congress"; but in the same act it is referred to as the "Territory of Alaska."

The officers for Alaska, appointed by the President, are: Governor, salary \$3,000; marshal, \$2,500; judge, \$3,000; clerk, \$2,500; and four commissioners, who receive the customary fees.

The temporary seat of government is at Sitka, formerly the Russian capital.

The laws prohibit importation, manufacture, or sale of intoxicating liquors, except for medical, mechanical, and scientific purposes. But in spite of this stringent statute liquor is sold openly in Sitka, Juneau, Wrangle, and other places. Public sentiment is against the sale of

liquor to Indians, and several offenders in this direction have been prosecuted.

**Education.**—Schools for both white and native children have been established by the Russian Government, the United States Government, and various churches. In 1894 there were 14 day schools and 1 industrial home at (Metlakatla) supported by the General Government, and 20 schools deriving their support wholly or in part from other sources. Of the latter class, 5 are sustained by the Russian Government; 1 by the Holy Synod of Russia; 1 by the Board of Missions, Protestant Episcopal Church; 4 by the Presbyterian Board of Home Missions, assisted by appropriations from the General Government; 1 by the Sisters of St. Ann; 1 by the Catholic Church; 2 by the North American Commercial Company on the islands of St. Paul and St. George; 1 by the American Branch, Swedish Mission Friends; 1 by the Swedish Evangelical Union; and 2 by the Russian Church. In these schools 57 teachers were employed, and the attendance was about 1,800.

**Fisheries.**—Codfish, halibut, herring, and eulachen or candlefish (a very oily species of smelt) are plentiful in the ocean waters of the south coast, while several species of salmon and trout abound in the river at certain seasons. In 1890 the catch of codfish aggregated 506,000 fish, producing 760 tons of dried fish, valued at \$38,000. The principal station for this industry is on the Shunagin Islands.

The catching and canning of salmon has become a well-organized and profitable industry. Beginning in 1878 with a catch of 14,854 cases (of about 100 pounds each), it has increased rapidly. In 1891 800,000 cases were shipped, having an estimated value of over \$3,000,000. In addition 26,000 barrels of salted salmon were shipped, having an estimated value of \$200,000. In 1890 there were 36 salmon canneries in operation on Kadiak island and eastward, and more than 4,000 men, exclusive of native fishermen, were employed. Another branch of the fishing industry is the manufacture of oil and fertilizer. The Alaskan Oil and Guano Company, at Killosmoo, in 1894, produced 400,000 gallons of herring oil and 1,000 tons of "guano," besides 1,000 barrels of salted herring. They also make their own barrels from Alaskan timber, and pay annually about \$20,000 in wages.

**Furs.**—Alaska is still one of the leading fur-producing regions of the world. The character of the furs, their number, etc., from 1881 to 1890, is given thus:

CLASSIFICATION.	Number.	Value.
Sea otter.....	47,842	\$4,784,200
Fur seal.....	1,162,806	17,442,090
Land otter.....	27,730	138,650
Black fox.....	15,910	397,750
Coon fox.....	53,151	106,302
Red fox.....	62,718	62,718
Blue fox.....	21,314	106,570
Beaver.....	60,940	304,700
Martin.....	127,601	882,803

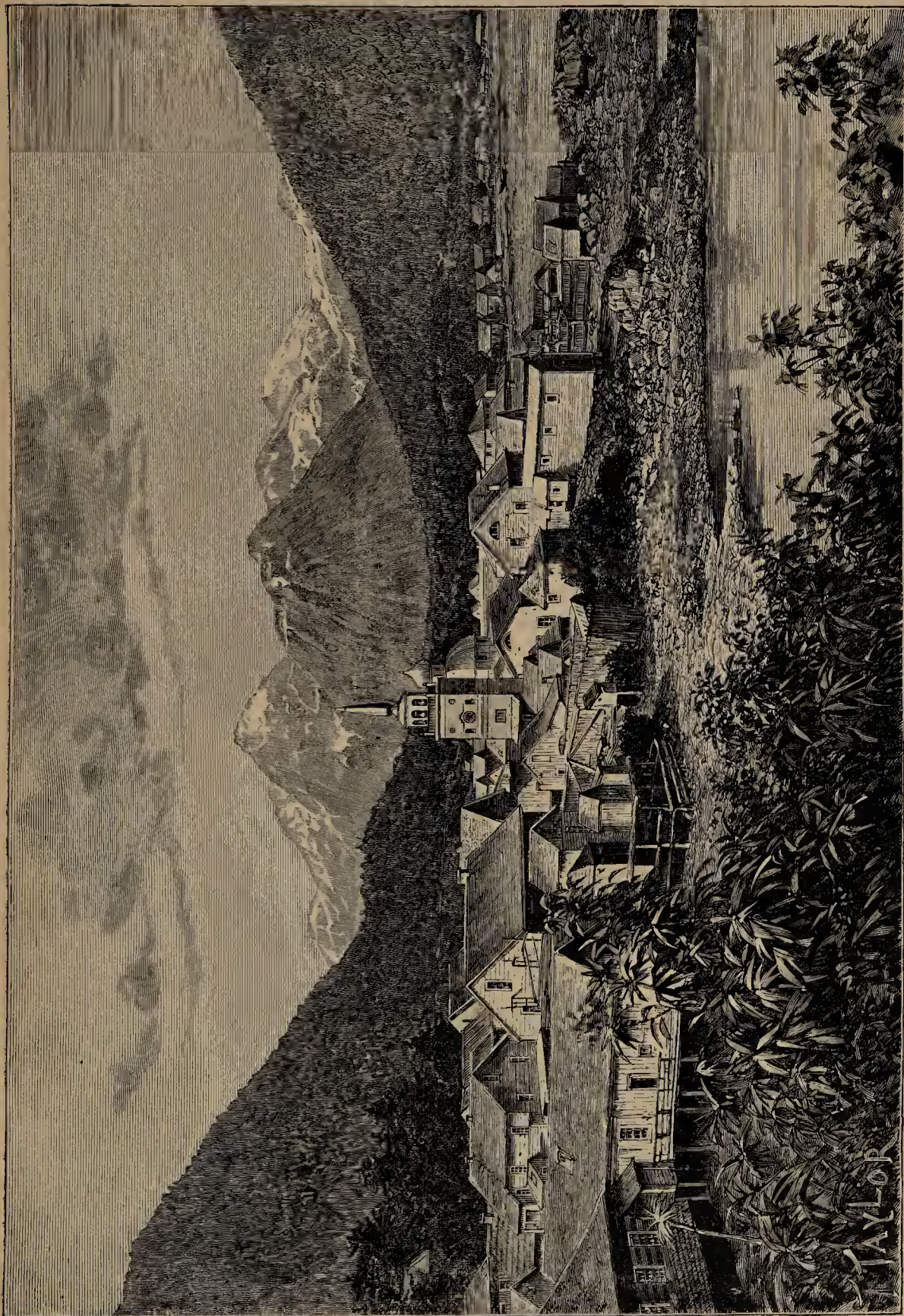
In addition the following fur-bearing animals are found in Alaska, and furnish large quantities of pelts, many of which are used in the Territory, but do not form an important article of export, viz., bear (polar, black, and brown), lynx,











SITKA, CAPITAL OF ALASKA.

J. TAYLOR



wolf, muskrat, wolverene rabbits, marmots, and squirrels. Moose and caribou were formerly abundant, but are now becoming scarce. The total value of furs shipped from the time when the Territory came into the possession of the United States to 1890 was \$48,518,929, and the total, under both Russian and American rule, was \$83,371,150.

**The Seal Islands.**—The seals of Alaska form two groups—the hair seal and the fur seal. The former, of which there are several species, is found throughout the coast line, and is the more important of the two, as it furnishes the natives with large supplies of food, oil, and skins. Their covering is of hair, and, although this is beautiful, their pelts are not used in civilized countries for clothing. Their skins make excellent leather for bookbinding and similar purposes, but thus far have not been exported from Alaska.

The fur seals are now confined to the Pribylov Islands, in Bering Sea, where they resort for breeding. These islands consist of St. Paul and St. George, 33 and 27 square miles in area, respectively, and 2 outlying rocks known as Otter and Walrus islands, which are seldom visited by the fur seals. The seals return to St. Paul and St. George islands each year about May 1, their young are born soon afterward, and they leave again in October and November. During the winter they live at sea and journey as far south as the coast of California.

The best estimates of the seals that visited the seal islands annually between 1871 and 1889 place their number at 4,000,000. Within the past few years they have greatly diminished, owing largely to capture at sea by poachers. In 1891 57 vessels were engaged in this occupation, and by estimate 52,000 skins were taken. In the following year the catch at sea was much larger.

The seal islands are a Government reserve, and are leased with the privilege of taking a certain number of male seals over one year old annually. The lease of the islands was held by the Alaskan Commercial Company from 1870 to 1890, and since 1890 it has been in the hands of the North American Commercial Company. Each of these organizations has its office in San Francisco. Under the terms of the contract with the Alaskan Commercial Company the lessees were allowed to take 100,000 skins a year; under the current contract the number that may be taken annually has been reduced. The revenues derived by the United States from the leasing of the islands between 1870 and 1890 were between \$7,000,000 and \$8,000,000.

The marked decrease in the number of seals visiting seal islands, owing to their destruction while at sea, largely by Canadian sealers, led to a diplomatic controversy between the United States and Great Britain, which was finally settled by a tribunal of arbitration that sat in Paris in the summer of 1893. (See *BERING SEA TRIBUNAL OF ARBITRATION* in the "Annual Cyclopædia" for 1893, page 79.)

**Whaling.**—The northern shores of Alaska are frequented by whales, and for several years have been the field of an important whaling industry. About 50 vessels are engaged in this occupation. The products of the catch in 1891 were 12,228 barrels of oil, 186,250 pounds of

whalebone, and 1,000 pounds of ivory; total, \$1,218,293. From 1874 to 1891 318,917 barrels of oil, 4,931,950 pounds of whalebone, and 272,410 pounds of ivory were obtained.

**Mining.**—The mining laws of the General Government have been extended to Alaska, and 8 mining districts established. The minerals that have been found in sufficient abundance to be of economic value are gold, silver, copper, and coal; and gold and silver are the only ones now mined. The largest and most profitable mine in operation is the Treadwell, on Douglas island, nearly opposite Juneau. The lode there worked is practically inexhaustible, but is of low grade, the yield being \$3 to \$4 to a ton of ore. In the year ending May 1, 1894, 240,000 tons of ore were crushed, yielding \$768,000, with a net profit of \$440,000. This is the largest quartz mill in America, and has 240 stamps.

Other mines, both of gold and silver, are being developed in the same regions. Mining on the Yukon river is now confined to washing gold from river gravels. In 1890 more than 1,000 miners were engaged in this occupation. Ledges of gold-bearing quartz have been discovered on the Yukon, but as yet no attempt has been made to work them.

The product of the mines of Alaska for the years 1880 to 1890, inclusive, as estimated by the Director of the United States Mint, was: Gold, \$4,604,500; silver, \$27,340.

Large deposits of coal exist at several widely separated localities in the Territory; but up to the present time coal mining has not been commercially successful. Copper is also known to exist, both as native copper and in various combinations, but has not been successfully mined.

**Agriculture.**—Nothing worthy of the name of agriculture has as yet been developed in Alaska. One of the chief reasons of this is, that the attention of the white population has been engrossed by other pursuits. The climate is exceedingly humid on the coast, and the mountainous character of the greater part of the land precludes extensive farming. Root crops—such as potatoes and turnips—as has been shown by many experiments, produce an abundant harvest, even as far north as the arctic circle. Much of the land is grass-covered and favorable to stock raising. This is true especially of Kodiak island and many of the islands westward, including the Aleutian chain. The summers in that region are too humid to admit of the curing of hay, but the preservation of fodder in a green condition is practicable, and, besides, the winter climate is so mild that cattle and sheep can graze almost throughout the year.

**Reindeer.**—Owing to the efforts of Capt. M. A. Healy, of the United States Revenue Marine, and Rev. Sheldon Jackson, reindeer have been introduced, at the expense of the General Government, into western Alaska, and they are reported to be thriving. The scarcity of food among the natives of central and western Alaska, owing to the marked decrease of large game since the introduction of firearms, will be counteracted when the natives are taught to raise and care for heads of domestic reindeer.

**Explorations and Surveys.**—Portions of Alaska are still unexplored, and only small areas, chiefly on the coast, have been accurately sur-

veyed. In recent years Government and private expeditions have traversed various portions of the country, following usually the river valleys, and have brought back much valuable information. Among these numerous expeditions, the most interesting and instructive are: A raft journey down the Yukon by Schwatka; exploration of Kowak river by Cantwell; of Copper river by Allen; of the head waters of the Yukon and an overland journey to Copper river by Schwatka and Hayes; of Chilkat pass and the country westward by Glave; of the St. Elias region by Russell; and of Glacier Bay by Reid. The United States Coast and Geodetic Survey has made careful determinations of the localities where the eastern boundary of the Territory crosses the Yukon and Porcupine rivers, and has also undertaken accurate surveys of several of the streams of southeastern Alaska, for the purpose of locating the disputed boundary. These surveys are still in progress. In the summer of 1895 an examination of the gold and coal deposits of southern and southeastern Alaska was begun by the United States Geological Survey.

**Commerce.**—The value of the exports of Alaska from 1868 to 1889, inclusive, as shown by the eleventh census, is as follows: Furs, \$48,518,929; canned salmon, \$9,008,497; salted salmon, \$603,548; codfish, \$1,246,650; ivory, \$147,047; gold and silver, \$4,631,840; whale oil, \$2,893,351; whalebone, \$8,204,067; total, \$75,213,929.

**ANGLICAN CHURCHES. Statistical.**—The statistical returns of the Church of England recorded in the Official Yearbook give evidence of continued vigor and progress. The voluntary offerings of Churchmen—excluding those which did not come under the immediate direction or cognizance of the clergy—for 1893 amounted to £5,650,490. Of this sum, £1,182,435 were spent on church building and restoration, £36,197 on burial grounds, £176,346 on the endowment of benefices, and £87,920 on parsonage houses. In Wales the total income of the clergy arising from tithe-rent charge, glebes, pew rents, fees, Easter offerings, interest on funded property, and from the Ecclesiastical Commissioners and other sources was £186,046, while the voluntary contributions for church work amounted to £240,643. Of the total amount collected in 1894 for the Metropolitan Hospital Sunday fund (£35,802) the Church of England contributed £28,368; and of the whole sum raised by the fund during the twenty-two years 1873 to 1894 (£695,504) the contributions from the Church of England were £534,995. The confirmations in 1894, reported from 2,728 centers, numbered 214,122. For the ten years preceding—1884 to 1893—the number of confirmations was 2,127,864; and for the previous ten years—1874 to 1883—it was 1,652,052.

Statistics of the Episcopal Church in Scotland for the year ending June, 1894, show that the congregations, including missions, numbered 303, and the membership of the Church had, as against the preceding year, risen from 96,251 to 99,971. The number of communicants during the same period had increased from 37,714 to 39,664. The amount raised by congregations, including income from endowments, was £90,850, as against £93,257 for the preceding year.

**Societies.**—The receipts of the Bishop of London's fund for 1894 were £24,708, or £1,743 less than in 1893. Grants were made during the year of £5,620 for clergy, £2,817 for lay agents, £7,476 for mission buildings, £6,788 for churches, £4,004 for vicarages and endowments, and £1,575 for schools.

The Incorporated Church Building Society, according to its report for 1894, holds 359 trust funds, amounting in all to £102,342 for the building and repair of churches. Its year's receipts were £4,481. It made during the year 89 grants of all kinds, amounting to £4,600.

The report of the Clergy Orphan Corporation, presented Feb. 20, represented the year past as having been one of steady progress as to the welfare of the society and its schools. The income had been £6,700 as compared with £6,241 in 1893. The Archbishop of Canterbury, presiding at the meeting, spoke of the necessity of securing the proper education of clergymen's children.

The report of the Continental and Church Society showed a gradual improvement in funds, with a total income for the year of £45,172, and several new and important developments in various parts of the world. Three new summer chaplaincies had been added—at Splügen, Stanserhorn, and Davos; and a lady had given £750 for the initiatory expenses of new chaplaincies. Particulars were given of the Church work helped by the society among the French Canadians and the scattered Indian and white populations of the Dominion, in Australia, South Africa, Mauritius, and India. Money and clothing had been sent to relieve the distress in Newfoundland.

The Central Church Committee has been organized, with the archbishops as joint presidents, with the object "of knitting together the great organization which has been established to consolidate the force of Church defenders and to further the cause of Church defense." The work of the committee is done wholly on Church lines. They have aimed at organizing the Church, the diocese, the rural deanery, and the parish. The Diocesan Committee has been asked to superintend the conduct of operations within the diocese. To the rural-diocesan committees has been intrusted the duty of seeing that each parish forms its committee and keeps it in active work; and each parish has been asked to organize its own band of workers, who will see that to each adult is brought home the facts upon which the Church bases its claims for support. There are now committees in every diocese and in nearly every rural deanery, and 3,000 parishes are associated with the movement.

The general work of the Church Association was represented in the report presented at the annual meeting, April 29, as having been exceptionally successful. Eleven vans had visited during the year 2,882 villages, 15 counties had colporteurs, the sale of publications had increased, and the income had exceeded that of any former year. A resolution was adopted condemning the Church Patronage bills before Parliament as "a menace alike to the rights of property, to the independence of the clergy, and to the best interests of the Church of England."

The annual meeting of the National Protestant Church Union was held in London, May 21, Viscount Middleton presiding. The chairman



referred in his opening address to the steps the union had taken to bring the ritualistic manuals of devotion and service books under the notice of the authorities, and said that while they rejoiced to know that their memorial had been discussed at the meeting of bishops, they regretted that no practical answer had been returned to them. A resolution was adopted declaring that "this meeting, while fully realizing the imperative duty of promoting spiritual unity among Christian people, of whatever Church or denomination, upon the basis of Holy Scripture, is nevertheless profoundly convinced that any corporate union with the Church of Rome, so long as she retains her distinctive doctrines and advances her present claims, is visionary and impossible, and this meeting further desires to express its respectful thanks to the Archbishop of Canterbury for his recent clear and explicit statement upon the subject made to the Council of the National Protestant Church Union through their representatives." In another resolution the meeting expressed the opinion "that the time has come when the Council of the National Protestant Church Union should consider in what mode English Churchmen can best publicly assert their firm determination not to submit to the practical introduction into the Established Church of the doctrines and practices of the first Prayer Book of Edward VI, which have been deliberately rejected by lawful authority, and how also they can best resist the attempts which are now being made to promote reunion with the Church of Rome."

The annual meeting of the Society for the Liberation of Religion from the Control and Patronage of the State was held in London, May 2, and the triennial conference of the society was opened May 1. The report of the committee dwelt on the advance of Welsh disestablishment since 1892; commended the Welsh Disestablishment bill, then before Parliament, as a whole, while criticising some of its details. Referring to the position of the Scottish disestablishment question, the committee advised their Scottish friends to adopt means to quicken the action of the Government, and to counteract the strenuous efforts that would be made to defeat disestablishment candidates at the next election. Other measures in the direction of "piecemeal disestablishment" were touched upon, the educational work of the society was referred to, and the supporters of the society were urged to seize the present golden opportunity for new efforts to instruct the public mind and to appeal to the public conscience. The report maintained that there was profound dissatisfaction within the Established Church at the growth of sacerdotalism within its pale, as well as at the impossibility of obtaining from Parliament reforms required to secure the liberty which is the truth and life to a progressive church. The receipts of the society had been £5,659, and the expenditure £5,348. There was urgent need of increased resources to enable the society to take advantage of the present opportunity of influencing the public mind. Resolutions were passed appealing to English nonconformists to be true to their principles with the question of Welsh disestablishment; expressing the opinion that the Scottish Disestablishment bill should be introduced and pushed forward at

the earliest practicable period; urging determined resistance to all attempts to sectarianize board schools; and calling upon the advocates of religious equality to take steps for such educational work in the constituencies in view of the next general election as would secure the return of a House of Commons pledged to promote the policy of disestablishment.

**Missionary Societies.**—The income from all sources for 1894 of the Society for the Propagation of the Gospel in Foreign Parts was £122,327, being £9,248 more than the gross total for 1893. In the home work of the society, the standing committee had reorganized its sub-committee on home organization, which was now a large body in which every diocese was represented; and its duty would be to deal with the society's home work throughout the country, to select organizing secretaries, to hold conferences with those officers from time to time in the progress of their work, to consider all matters relating to deputations, to confer with the committees in the several dioceses as to organization, to take measures for encouraging devotional gatherings for missionary intercession, united efforts in the various rural deaneries with a view to the lessening of deputation expenses, and the development of clerical and other missionary associations. The London Missionary Clergy Association, in connection with the society, had given an impetus to the society's work in the London districts, and had led to the multiplication of similar associations throughout the country in great centers of population. The Board of Examiners had during the year considered the applications of 11 clergymen and 29 laymen for work abroad, and had recommended 9 clergymen and 23 laymen to the society. Twelve of these were for Africa, 11 for America and the West Indies, 5 for Asia, and 4 for Australia. The number of ordained missionaries on the society's lists, including 9 bishops, was 719, of whom 233 were in Asia, 173 in Africa, 18 in Australia and the Pacific, 209 in North America, 38 in the West Indies, and 39 chaplains in Europe. Of these, 125 were natives working in Asia and 45 in Africa. There were also in the various missions about 2,900 lay teachers, 3,200 students in the society's colleges, and 38,000 children in the mission schools in Asia and Africa. The spiritual side of the society's work presented details of difficulties and progress, of fears and hopes. It had been many years since wars had filled so large a space in the story of missions as in the past year. In China, Japan, Korea, Madagascar, and at Lebonbo, in East Africa, there had been all the anxieties connected with wars and rumors of wars, but no word of quail from any of the missionaries. There were also brighter scenes in the society's mission field. Mashonaland and Matabeleland were in the enjoyment of a peacefulness such as they had probably never known under their old condition. In Basutoland, Kaffraria, and Zululand, the Church had taken root, and there were signs of growth. In Natal there was the happy drawing together of brethren long parted. Progress was recorded in other states of India. Of the 18 native clergy in the diocese of Lahore, 8 were converts from Mohammedanism.

The report of the Melanesian mission showed

that of the £6,000 annually expended, about £1,200 came from the endowment fund, largely bequeathed by Bishop Patteson. The bishop's stipend was £500, and the maximum income of the clergy was £200. The farms in connection with the training school on Norfolk island furnished a considerable proportion of the provisions required, but not all. The mission now included 10 white and 8 native clergy, 200 teachers, and 3,000 pupils at 105 stations and schools. Bishop Wilson, who succeeded Bishop Selwyn, had been heartily welcomed by black and white alike. On his first voyage he had confirmed 500 persons, who had been mainly taught and kept together during the interregnum by native agency. The Australasian churches are furnishing a large proportion of the men and means for this mission. They had established new centers for English-speaking churches, and had spread Christianity among the Chinese immigrants and the aborigines. The mission in New Guinea had been fixed in a part of the territory where it would not interfere with the work of any other Christian body.

The financial report of the South American Missionary Society, presented at the annual meeting, April 25, showed a balance in the treasury of £174, besides £1,264 set aside for the Araucanian Mission fund. A legacy of £2,000 to the society was announced, and a gift of £50 for the work in Araucania. This claims to be the only large society working in the vast regions of South America.

The annual meeting of the Church Missionary Society was held in London, April 30, Sir John Kennaway presiding. The total ordinary receipts for the year had been £272,000, which was £20,000 in excess of the receipts of any previous year, while the expenditures had exceeded those of 1893 by only £960, a result mainly due to the continued fall in the price of silver. Adding special funds not available for ordinary purposes which had accrued, the society had received £279,084. Great satisfaction was expressed at the increasing number of missionaries, it having just doubled in the seven years from October, 1887, to October, 1894. It now included 349 ordained, 92 lay, and 193 woman missionaries, besides whom were 263 missionaries' wives, bringing the European total up to 897. The number of native and Eurasian clergy was 332; of native lay teachers, 4,529; of native Christian adherents, 204,107; of schools, 1,983, with 83,312 native pupils. The average of converts in the foreign field had been greatly exceeded, the total reported for the year being 4,200. These included 1,500 in India, 1,400 in Africa, and 650 in China.

The following memorandum on the episcopal authorization of laymen in the foreign mission field has been unanimously adopted by the committee of the Church Missionary Society:

(a) While it is desirable that all departments of the society's work should be carried on with the full sympathy and approbation of the chief pastor of the Church in each diocese, there is no sufficient reason for obtaining episcopal authorization of a general character for laymen to engage in spiritual work.

(b) There are, however, certain functions, ordinarily performed by clergymen, but in the mission field often necessarily performed by laymen, which may in some cases render desirable a special arrangement

with the bishop of the diocese. These functions do not include evangelistic work among the heathen, nor the instruction of Christians in Bible classes and the like, nor school work, nor medical work, nor literary work, nor other work of various kinds, such as is generally recognized as within the province of laymen. But they are: (1) The habitual conduct of public worship in settled congregations where there is no resident ordained pastor, and preaching to such congregation; and (2) the ministering from time to time by Europeans or others in congregations having ordained ministers in charge at the invitation of such ministers. A reasonable view of a bishop's responsibilities for the oversight of the flock committed to his charge justifies an arrangement by which his authorization should, if he desires it, be given to laymen for the performance of such functions as these.

(c) In accordance with the above principles, and upon the understanding that the conditions following are accepted, the committee will be prepared, in dioceses where it is the wish of the bishops to give such authorization to lay agents of the society, to enter into an agreement with such bishops defining the class of congregations to which these arrangements shall apply, and as to limitations of time, place, or qualification which may be deemed on either side to be of importance. The conditions referred to are the following: (1) That the authorization shall cover only the particular functions above described; (2) that they shall be given on the recommendation of the society's representatives in the mission field appointed for that purpose by the committee; (3) that official communications from the bishop to laymen thus authorized shall be made through the same representatives of the society.

(d) The committee must be distinctly understood as in no sense surrendering the inherent right and duty of Christian men to use all and every means of winning souls to Christ. The committee conceive that in the mission field no legal disqualification exists to prevent laymen performing even the official functions above referred to without episcopal authorization. Nothing, therefore, in this memorandum is to be interpreted as infringing upon the reasonable liberty of the society's lay missionaries to do so, either in cases of emergency, or even in ordinary cases in the earlier stages of missionary work.

The annual meeting of the Church of England Zenana Missionary Society was held in London, Aug. 3. The year's income had been £40,698, increasing the credit balance from £846 to £3,088. The society had 53 stations in India, 8 in China, and 1 in Ceylon; 175 missionaries in European connection and 78 in local connection, besides 640 native Bible women, teachers, and other workers.

The forty-third annual meeting of the Zenana Bible and Medical Mission was held April 18. The home income had been £18,247, and 45,857 rupees (£2,549) had been received in India from Government grants, fees, and subscriptions. The society employed 117 European missionaries and Eurasian assistants, 178 Christian teachers, nurses, etc., and 78 Bible women; and returned 70 schools with 2,896 pupils. It had access to 12,728 zenanas and private houses and 2,674 pupils under Christian instruction. The Bible women periodically visited 1,133 villages. At the society's hospitals and dispensaries in Lucknow, Benares, and Patna 19,152 patients had been treated, and the dispensaries had supplied 52,008 applicants. This society is supported by members of various churches.

**The Convocations of Canterbury and York.**—The Houses of Convocation met Feb. 6 for the dispatch of business. A petition was



presented in the upper house from the chairman of the National Protestant Church Union, bearing 1,750 signatures, in regard to the action of the Irish bishops in consecrating a bishop for the Reformed Catholics in Spain. The Bishop of London remarked upon this subject that the consecration was an act of very grave importance indeed, and one which the house wished very much, and had expressed its wish with distinctness in July, 1894, might have been postponed until after the Lambeth Conference of 1897 should have considered the subject. Upon his motion a resolution was adopted, reciting the resolution of the house of July 6, 1894, and the fact of the consecration of Sept. 23, 1894, and declaring that the house, "in accordance with the opinion expressed by the Lambeth Conference of 1878, and reaffirmed in the encyclical letter issued by the Lambeth Conference of 1888, declares its sympathy with the Spanish reformers in their endeavors to obtain blessings which the Church has long enjoyed. Yet, in view of the various issues involved in a recognition of the act performed as aforesaid, refuses to accept any responsibility in the matter until after the Lambeth Conference shall have examined the standards of doctrine of the said Reformed Church, and shall have decided the grave question whether the said Reformed Church is to be recognized as in communion with the Anglican Church." The approval of the house was given generally to the recommendations of the Archbishop's Committee on Voluntary Schools, and they were commended to the immediate and careful consideration of the whole Church. It appeared in the debate on this subject that the voluntary schools were laboring at present under the two difficulties of meeting the demands of the education department for improvements in buildings and of embarrassment in maintaining the schools in face of the perpetually increasing expenditure necessary for giving such instruction as the education department required. The work of the Free Education act had very seriously injured the financial position of a good many of the schools, taking away, as it did, the school pence. The question of the consecration of Bishop Cabrera in Spain was brought before the lower house for discussion in the form of a *gravamen* which was offered, expressing disapproval of the act, and begging the members of the upper house to consider what steps should be taken to vindicate the integrity of the Church of England by showing that it was clear of all responsibility in the matter, "and thus to alleviate the anxiety of many of her devoted members." Resolutions were adopted recommending steps to secure a simple and uniform constitution of ecclesiastical vestries; declaring it desirable that the obligations of church wardens to maintain and repair church burial grounds should not be transferred to parish councils without the sanction of the ordinary as well as of the parochial church authorities, and recommending the annual publication, for the information of parishioners, of statements of funds intrusted to incumbents and church wardens conjointly.

The House of Laymen passed resolutions opposing disestablishment and disendowment in Wales and Monmouthshire, on the subject of a simple and uniform constitution of virtues, and

concerning the appointment of church wardens; and approving the report of the archbishop's committees on Christian teaching in elementary schools. The bishops were requested to formulate a scheme for obtaining such further financial aid from imperial or local sources for voluntary schools as may seem most likely to meet their requirements without endangering their religious character, and to win the general support of the Church and the consent of the legislature.

The principal questions discussed at the meeting of the Convocation of Canterbury in May were Welsh disestablishment and the marriage of divorced persons. The former subject was debated in the upper house in view of the passage in the House of Commons of the Government bill on the subject. All the speakers regarded the proposed disestablishment as inequitable and likely to be disastrous to the Episcopal Church in England, as well as to religion in general. A resolution was passed in the lower house in view of the recent marriage in a church in London of a person who was respondent in an undefended divorce case, requesting the bishops to take such steps as they might think best to prevent the repetition of such a grave scandal, "by which the consciences of all really Christian people are wounded, the standard of morality in the country is lowered, the sanctity of family life sapped, and the blessing of the Church given to persons intending to live in a state which the Lord of the Church has directly and implicitly condemned. For all civil purposes what is desired can be obtained by a union in the register's office, and as it is state law and not Church law that makes such unions possible, the undersigned entreat your lordships to do whatever can be done to prevent such unions being ever solemnized in church, and to hinder her blessing being given to those whom Holy Scripture teaches that the Lord will not bless. Upon presentation of this resolution in the upper house, that body declared that it was fully prepared to take such steps as the members of this house may be able to take to prevent the recurrence of the scandal described in the *Articulus Cleri* of May 15, 1895. A report of a joint committee of both houses on the accession service was discussed in the upper house. It proposed amendments intended to remedy certain difficulties attending the use of the service.

The Convocation of York met Feb. 20. The report of the committee appointed by the two archbishops to inquire into the prospects of voluntary schools was considered in the upper house and approved, as was also the draft of the bill to amend the law relating to Church patronage. The lower house likewise approved the draft of the Church Patronage bill.

**The Reformed Churches in Spain and Italy.**—The memorial of the Protestant Church Union to the Archbishop of Canterbury, upholding the consecration of Bishop Cabrera in Spain by the Archbishop of Dublin and his associates, already mentioned as having been discussed in the Convocation of Canterbury, relates

That the Archbishop of Dublin had inquired of the Lambeth Conference of 1888, whether the primitive and established principles of jurisdiction would be safeguarded if such bishop as was contemplated, should refrain from assuming a territorial title or any

jurisdiction except over his own folk; and it was only on receiving an answer in the affirmative that he determined to proceed. The Church of England had been fostering the Spanish and Portuguese missions for many years. A Presbyterian agency had also been at work. "If the request for an episcopate had been delayed till after the next Lambeth Conference," the memorialists said, "the organization of the Reformed Church in Spain might have taken a non-episcopal form, which would have increased the number of these nonepiscopal churches, the obstacles to full communion with which are now universally lamented." That there should be no bishops where "the unscriptural bishops of the Roman tyranny bear full sway appeared to the memorialists a monstrous proposition." We would further point out that what has been done for the Spanish reformers by the Irish bishops was done for the members of the Reformed Church in the United States by the bishops of Scotland, for the Reformed Christians in Mexico and Hayti by the bishops of the United States, and for the Old Catholic Bishops Reinkens and Herzog by the Archbishop of Utrecht. Bishop Cabrera occupies in Spain a position corresponding to that of the Anglican and other bishops in Jerusalem; of the Bishop of Gibraltar in the Roman Catholic dioceses of southern Europe; and of Bishop Wilkinson in the Roman Catholic dioceses of the north. We do not refuse the Roman Catholic bishops in England themselves a corresponding position, which, according to the principles of religious liberty and the unhappy divisions of Christendom, appears necessitated by the presence of 2,000,000 of that communion in this country. We do not think it necessary to defend to your Grace the principle that the Spanish Reformed Church should form its own liturgy, a principle common to Christendom since its earliest days, recommended by Gregory VII when sending Augustine to convert the Anglo-Saxons, and fully maintained by our own Church. We deplore the action of certain members of our own Church, who, without waiting for the guidance of our spiritual rulers, apologized to the Romish Archbishop of Toledo for the deliberate action "of the free and independent Church of Ireland, whose presence in Ireland is in itself a witness against the inveterate errors of Rome. Their action only drew from the Romish bishops a declaration of the impossibility that exists against the recognition of ourselves or of any other Reformed Church whatever; and in that declaration is added a yet further justification to the action of the Irish bishops. We have laid these reasons before your Grace because we are aware that petitions are being circulated in various dioceses with the object of securing a censure of the Irish bishops and the confirmation of the usurpations of Rome in Spain and in other countries, as well as a virtual perpetuation of those unlawful terms of communion which the Lambeth Conference of 1888 unanimously condemned."

An address was presented to the Archbishop of Dublin by nonconformist ministers, expressing lively interest in the reform movement in Spain, and admiration of his efforts, and comparing the situation in Spain to that in England in the time of Henry VIII, and in Italy now, where there were vast masses of people nominally connected with the Roman Catholic Church, but virtually outside its pale, from want of belief in its title and from disapproval of its influence. The signers of the address were impressed with the spontaneity of the Spanish movement, which, they said, was not the fruit of any foreign propaganda, but the logical outcome of men seeing for themselves. A meeting held in London, March 30, over which S. T. Fowell Buxton presided, and to which the Bishops of Worcester and Sodor and Man sent letters, while other dis-

tinguished Churchmen were present, expressed thanks to God for the success vouchsafed to the reformers in Spain and Portugal in carrying on their work, approval of the consecration of the bishop, and sympathy with the Irish prelates who had participated in the act. Another meeting, held April 4, at which Col. Saadys, M. P., presided, and the Bishop of Liverpool, in addition to the others, sent a letter, adopted a resolution of like tenor, with a declaration "that the position of Bishop Cabrera as head of the Reformed Spanish Church (due to his election by the people and clergy as far back as 1880, and to his subsequent ministry among them for the furtherance of the Gospel) entitles him to the prayers and support of English Protestants who, like himself, are under the ban of Rome, and desire to see a saving knowledge of Jesus Christ brought within the reach of every Spaniard."

The Archbishop of Dublin presided May 10 at the annual meeting of the Spanish and Portuguese Church Aid Society. The report referred at length to the consecration of Señor Cabrera as the first bishop of the Reformed Spanish Church, and the criticisms provoked by that step. The society's income had been £5,933, of which £4,637 had been spent and £1,128 placed in reserve. One half of the £3,000 required to complete the bishopric endowment had been raised. The archbishop defended his consecration of Bishop Cabrera, saying that it was not against canon law, which only necessitated the permission of his own Church and the invitation of the people to whom he went. Nor was it forbidden by the Lambeth Conference, which had declined to take the responsibility of passing on such matters. He had received from many bishops opinions in harmony with his own. The Archbishop of Dublin also presided at the annual meeting (May 22) of the Italian Church Reform Association. The annual report stated that the work started fourteen years ago, and had to be re-organized five years later, after much persecution. It was a work to which English Churchmen, Scotch Presbyterians, the Waldenses, the Old Catholics, and other reformed churches had all held out the right hand of fellowship. From all parts of Italy came requests for an increased pastorate and for the education of the converts' children in the principles of the reformed faith. The accounts showed an expenditure of £956 in Italy and £220 in England. Count Campello, the bishop-elect, had added to the list of his clergy the Rev. Bruno Bruni, who, with the bulk of the Methodist Episcopal congregation in Dovadola, had petitioned for reception. No attempt was made to withdraw reformers who were now in connection with nonepiscopal bodies. The Bishop of Salisbury expressed his continued sympathy with the work of his old friend Count Campello. All he had seen of the count confirmed his belief in his high character and his fitness for the leadership of such a movement.

**The Church Congress.**—The Church Congress met at Norwich, Oct. 10. The Bishop of Norwich, as bishop of the diocese, presided. At the reception given by the mayor of the city previous to the opening of the meeting the Archbishop of York said that during the thirty-six years the congress had been in operation the



clergy had been brought into much closer relations with the people, and he trusted that the present meeting would also be fruitful in good results. The president in his opening address spoke of the present position of the Church as compared with its past; of the growth among Protestants of the different denominations of the desire for closer unity; of the internal condition of the Church; and of the reforms that are needed, mentioning particularly the provision of retiring funds for aged or incapacitated incumbents, and greater power for the Church in making its regulations or by-laws. Concerning the subject of Church unity, the speaker said that while there was no prospect of organic union with any of the nonconformist bodies, and there did not appear to be any strong desire on their part for such a union, the relations of the Church with them had "during the past thirty years been continually becoming more friendly, and friendliness and peace are only less blessed than absolute unity. And thus, indeed, the Church has gained more friends and even adherents. There has arisen, too, of recent years a very happy perception that in some all-important matters, as in the sacred cause of morality, we are working together with the utmost cordiality for the overcoming of sin and misery by the power of good." The first topic discussed was that of education, under the heads of "The Preservation of Religious Education in Elementary Schools"; "Federation for Schools"; the report of the archbishop's committee on the schools; a comparative view of the educational systems in their religious aspect of the United Kingdom and its colonies and protectorates; "National Education on the Continent of Europe and the Place occupied therein by Religion"; the position of national education in the religious aspect in England as compared with that in France; and the subject was continued under these and similar heads at other sessions. Concerning the relations of the Church and socialism, papers were read on the attitude of the Church toward socialism, toward trade-unionism, and toward co-operation. The discussions on foreign missions touched missions to the Jews, to the Japanese, to the Chinese. Home missions were considered with reference to "parochial missions" and "universities' and schools' missions," and an account was given under this head of the working of the Protestant Episcopal Brotherhood of St. Andrew in America as an organization for assisting the clergy and binding laymen together for the purpose of general social improvement. In the discussions concerning Holy Scripture, papers were read by Prof. A. H. Sayce, on "The Authority and Authenticity of the Old and New Testaments as affected by Recent Archæological Researches"; by Mr. Theodore G. Pinches; on "Recent Archæological Researches, especially in Egypt, Palestine, and Chaldea"; by Mr. F. C. Burkitt, on "The Sinai Palimpsest and the Greek Text of the Gospels"; and by Dr. Montague R. James, on the finds of Greek and Coptic monuments in the cemeteries of Egypt. The topic of "The Church's Ministry, Doctrine, and Worship, confirmed and illustrated by Recent Discovery and Research in the Catacombs and Other Sources" was discussed in papers on "The Christian

Prophets" and other special subjects. A session was given to the consideration of subjects pertaining to the finances of the Church. The duties of the Church were considered with respect to sailors and fishermen, and to soldiers. Under the general head of "Faith and Science" papers were read on "the religious problems pressing on the rising generation connected with the questions, first, of fixity of dogma, and, second, of the progress of science. The topic of "The National Church" was discussed under the four heads of "its origin and growth," "its continuity, order, doctrine, and autonomy," "its continuity unbroken by the Reformation," and "what was done at the Reformation." Series of papers were read on "The Welsh Dioceses" and on "Hindrances to Christian Unity." Other papers were on "The Lord's Day—(a) Sunday Occupation, (b) Opening of Museums," "The Church's Care of Deaf and Dumb and Waifs and Strays," "The Utility of Cathedrals," "Church Music"; at the workmen's meetings, on "Tithes and Endowments," "Poor Law Administration," "Old Age Pensions," and "Benefit Societies"; and at the women's meeting, on "The Influence of Modern Life on Religious Faith, Work, and Amusement."

**ARCHÆOLOGY. American. Identity of the Mound Builders.**—The twelfth "Annual Report of the United States Bureau of Ethnology" contains a summary of the results of ten years' explorations of the mounds, carried on by the bureau under the immediate direction of Dr. Cyrus Thomas. During this time more than 2,000 mounds were explored between the Ohio valley and the Rocky mountains, and from the Dakotas to Florida. Particular attention was paid to the mode of construction and methods of burial in the conical tumuli. Many ancient graves and cemeteries and several *caches* and cave deposits were explored. As a rule, each mound was measured before it was excavated, and figured if it presented any peculiarity of shape. The character and thickness of the strata and the exact position of the skeletons and relics found were noted. About 40,000 objects were collected and catalogued, and were deposited in the National Museum. They include articles of pottery, an unusual number of polished and pecked celts, pipes, textile fabrics and matting, and bone implements used in weaving. The general conclusions are reached by Dr. Thomas that the links directly connecting the Indians and mound builders are so numerous and well established that archæologists are justified in accepting the theory that they are one and the same people. The evidence obtained appears to be sufficient to justify the conclusion that particular works and the works of certain localities are attributable to particular tribes known to history, thereby enabling the archæologist to determine in some cases, to a limited extent, the lines of migration: as in the case of works in Tennessee, western North Carolina, the Kanawha valley, and Ohio, attributed to the Cherokees; the box-shaped stone graves and the mounds and other works directly connected with them in the region south of the Ohio and near Cincinnati, attributed to the Shawnees; stone graves in the valley of the Delaware and others in Ohio of



which the Delawares were the probable constructors; and works of the Chickasaws in Mississippi, the Uchees in the Flint River region, southern Georgia, and the Muskokee tribes in the Gulf States. The testimony of these mounds is regarded as decidedly against the theory that the mound builders were Mayas or Mexicans, who were driven out of the regions by the pressure of Indian hordes, and also against Morgan's theory, that they were related to the Pueblo tribes of New Mexico. It also is interpreted as giving a decided negative to the suggestion that the builders of the Ohio works were pushed south into the Gulf States, and incorporated into the Muskokee group. While most of the ancient monuments belong to prehistoric times, and some possibly to a remote past, yet the evidence of contact with European civilization is found in so many of them and is such that we are forced to believe that a number of them were built after the discovery of the continent by Europeans. A number of interesting conclusions are also drawn respecting the tribal and territorial divisions, and the burial customs, with religious ceremonies, of the mound builders. Among these conclusions is one that in some of the southern districts, where the river bottoms are much depressed, it was the custom to erect dwellings on low mounds apparently constructed for this purpose, and when deaths occurred to bury the remains in the floor of those dwellings, burn the houses, and heap mounds over them before they were entirely consumed or while the embers were yet smoldering. The houses in those districts appear to have been constructed of upright posts set in the ground, lathed with cane or twigs, and plastered with clay, having the roofs thatched precisely as described by the early French explorers. No evidences of human sacrifice "in the true sense" were discovered. The statements of the navigators and explorers as to the habits, social condition, and art of the Indians when first visited by Europeans are largely confirmed by the discoveries. The works in Arkansas, Georgia, and other Southern States confirm, even to details, the statements of the chroniclers of De Soto's expedition, and of the early French explorers in the valley of the Mississippi.

**English.** *The Silchester Excavations.*—During six years that excavations at the ancient Roman site of Silchester have been continued, the forum and basilica, an ancient temple and what is believed to be a Christian church, an inn, baths, houses of different classes of society, and many interesting artistic remains rewarded the explorers. The plan of the city and the lie of its streets were traced with considerable exactness of detail, and the distribution of the inhabitants and the degree of civilization and comfort which they had attained could be conjectured from the remains. The excavations of 1894 involved the thorough examination of  $6\frac{1}{2}$  acres, including 4 insulas or street squares. Many small articles of interest were discovered, including a hoard of 253 silver denaria of various dates, from Mark Antony to Septimius Severus, a range of about two hundred and fifty years. The most important discovery is that of a number of furnaces, apparently of an industrial character, and of various sizes, some circular and

some oblong. They were found partly within and partly without a series of rectangular inclosures or buildings. Twelve of these buildings were uncovered, all of the same type, and 21 hearths, 12 circular and 9 oblong. It is believed that these buildings and their adjuncts were devoted to the dyeing industry, and this conjecture is made probable by the large number of wells discovered, one of which was of peculiar and unusual construction. The circular furnaces are supposed to have been used for dyeing, while others, with a straight flue, may have been intended for drying. Rooms are traceable which, it is presumed, were intended for the storage of goods and materials, and open spaces with no remains of flues which may have been used for bleaching grounds. It is thought that these furnaces belong to the later period of the city, and the traces of successive occupation lead to the conjecture that the richer inhabitants left the district in which this industry was carried on and migrated eastward. The theory is strengthened by the discovery *in situ* of a number of querns for hand grinding the madder roots used for dyeing purposes. In the season of 1895, a hitherto unexplored insula, midway between the basilica and the west gate, was examined, and proved to be occupied by the foundations of two very large houses, the most interesting features of which were the elaborate mosaic pavements of the rooms.

**Lake Villages.** It appears from the third report of the committee of the British Association on the lake village of Glastonbury that during the year 15 more dwelling mounds and 500 feet of palisading had been disclosed, and nearly two thirds of the border had now been traced. Many valuable relics had been obtained, among which were a flint saw, a complete ladder 7 feet long, a small door of solid oak, and an oval bronze mirror, a feature of late Celtic art. The pottery was abundant and ornamented in late Celtic style, uninfluenced by Roman art. Hence the discovery of this lake village could not fail to shed light upon one of the obscurest periods of British art.

A station has been discovered in Bosnia, at Butmir, in what was probably in former times partly a lake basin. The more or less stratified beds of clay, charcoal, ashes, and mold disclosed on section, contained fragments of pottery, flint implements, stone axes, and other remains of a primitive people. A number of irregularly shaped hollows occurred on this clay, which Mr. Radinski, who explored the station, thinks may have been the foundations of the huts of the first inhabitants, or diggings for making implements and for use in house construction. Some burned-clay coatings of the timbers of which the houses were constructed were found in several places. The remains were so abundant as to suggest that the people may have carried on special industries for their manufacture. Stone implements in the form of knives, arrow heads, scrapers, axes, and tools were in all stages of manufacture. The material out of which the perforated axes were made was not found in the neighborhood. The pottery was ornamented with a great variety of designs, among them a spiral. A number of clay images or figures representing the human form were

found, among them a head of terra cotta, which disclosed art of a superior kind. Prof. W. M. Flinders Petrie characterizes the specimens of black pottery found here as identical with pieces which he had found during the year in Egypt, and at other times at Hissarlik and in Spain.

**Grecian.** *Work of the American School.*—The work described in the thirteenth "Annual Report of the American Classical School" at Athens includes the discovery near the theater of a platform about 75 feet by 40 feet, composed of 3 layers of stone about  $4\frac{1}{2}$  feet thick, near which were found traces of fire, handfuls of charcoal, and bits of melted iron, and diverging from which were the remains of conduits, with remains of columns of what was probably an altar, some of which bore inscriptions indicating memorials of victory in theatrical contests. The platform seemed to be the stereobate of a temple. The excavations at Argos promise to be of great importance, and the structures uncovered have readily assumed larger proportions. Articles of art and handicraft have been found 15 feet below the previous year's level. Near a new-found Cyclopean wall were dug up large masses of pottery, iron, and bronze, a marble head of the Roman period, and an interesting specimen of Greek sculpture, the head of an Ephebus from the metopes of the second temple, bearing the characteristics of the Polycletan art. Many objects in iron were disclosed, as well as bronze and even stone implements. A strange object was a large mass of iron about 5 feet long and a foot in diameter, which proved to be a mass of iron spears bound together with bands of iron at both ends. The west building, partly excavated in the previous year, was entirely uncovered, and showed a structure with 3 chambers, colonnade, and central court. Annexed to it was another long building at which were found the face of a colossal female head, objects in gold and silver, and a silver ring studded with gold and inscribed. The discoveries made at the east end of the west building are described as being very rich in number and variety, comprising every material—objects in gold, lead, iron, bone, ivory, and clay—and touching upon every field—epigraphy, art, mythology, and antiquities. At another part of the building some early graves of the Mycenæan period were found, one of them well preserved. Great interest was attached to the discovery of 2 beehive tombs, one of which had been the repository for at least 3 corpses, and contained 48 vases, nearly all in perfect preservation, 3 terra-cotta figurines of the earliest type, a chain with interesting Mycenæan ornaments, 4 steatite whorls, an ivory needle, and a number of heads; while the other contained a large number of beads and whorls, but only 1 complete vase, and a number of fragments.

The work of the school was continued in 1895 in the second temple of Here at Argos, which is regarded as second in artistic importance only to the Parthenon.

**Roman.** *The American School.*—A congress of philologists and archæologists which met in Philadelphia in the winter of 1894-'95 recommended the organization of an American school of classical studies at Rome, on a plan similar to that of the school at Athens. A managing

committee was organized, generous subscriptions were received, and arrangements were made for opening the school, under Prof. William G. Hale as director and Prof. A. L. Frothingham, Jr., as associate director, for the academic year 1895-'96. The objects of the school will be to promote the study of such subjects as Latin literature as bear on customs and institutions; inscriptions in Latin and in the Italic dialects; Latin palæography; the topography and antiquities of Rome; the archæology of ancient Italy (Italic, Etruscan, Roman), and of the early Christian, mediæval, and Renaissance periods. It will furnish regular instruction and guidance in several or all of these fields, will encourage original research or exploration, and will co-operate with the Archæological Institute of America, with which it is affiliated.

**Egyptian.** *Relics of a Hitherto Unknown Race.*—The work of Mr. W. M. Flinders Petrie during the season of 1895 and that of the Egyptian research account under the immediate direction of Mr. Quibell were carried on in the same district and were much interwoven with each other, so that it is not always easy to distinguish in the important discoveries that were made to which party the chief credit should be given. On the top of a plateau, according to Mr. Petrie's account, between Ballas and Negadeh, about 30 miles north of Thebes, 1,400 feet above the Nile, the home of palæolithic man was found. Large massive flints, beautifully worked and unworn, were discovered of the same forms as those found in the river gravels of France and England. Their antiquity is shown by their dark staining, while other flints five thousand years old by the side of them show hardly a tinge of weathering. Besides these other flints of a later palæolithic type were found imbedded in the ancient gravels of the former high Nile. A town of historical times, Nubt, found on the edge of the desert adjoining a small temple, proved to be a center of the worship of the proscribed god Set. This town is referred to in Juvenal in a passage which was hitherto obscure, but is now explained by the discovery; and besides its elassical interest it preserves the remains of many successive ages, furnishing, in different layers, potteries of the fourth, twelfth, eighteenth, and nineteenth dynasties. Less than a quarter of a mile from this place lay another site of a town presenting special features that marked it as not Egyptian, but as having been the home of another race or people, whose presence in Egypt had not been known before, or even suspected. In the monuments and tombs of this people of a hitherto unknown race, nothing was found that was common to the Egyptians or was like anything Egyptian; and the region in which they were found extends over more than 100 miles of country, from Abydos to Gbelen. At the spot where the principal researches were carried on between Ballas and Negadeh, near the middle of the district, these remains occurred in the immediate vicinity of Egyptian towns and tombs with pottery, beads, and scarabs of the fourth, twelfth, eighteenth, and nineteenth dynasties, exactly like those found similarly dated in northern Egypt, yet wholly distinct from them. The men of this race, Mr. Petrie says, were "very





1. Ancient Galley, painted on a Vase, with hills and ostriches.
2. Figure with tattooing marks on body.
3. Figure showing type of art followed by the New Race.
4. Portion of an Ivory Comb, with human head.

5. Ivory Comb.
6. Piece of Pottery, in form of a bull, supposed to have held charcoal as a foot-warmer.
7. Skulls of New Race, with hair still remaining.

8. Slate Palette, used to grind malaokite, with which this race of people painted their eyes and faces.
9. Porphyry Vase, hand made.
10. One of the marks scratched on pots, supposed to be the nearest approach to writing practised by the New Race.
11. The Game of Ninepins.

THE DISCOVERY OF A NEW RACE IN ANCIENT EGYPT BY PROFESSOR FLINDERS PETRIE.

tall and powerful, with strong features; a hooked nose, long-pointed beard, and brown, wavy hair are shown by their carvings and bodily remains. There was no trace of the negro type apparent, and in general they seem closely allied races of the Libyans and Amorites. Their burials are always with the body contracted, and not mummified, lying with head to south and face to west, just the reverse of the contracted bodies at Medum. Although most of the graves have been disturbed, yet sufficient examples remain untouched among the 2,000 graves opened by us to show that the bodies were generally mutilated before burial. One large and important tomb showed four skulls placed between stone vases on the floor, a separate heap of loose bones of several bodies together, and around the sides human bones broken open at the ends and scooped out. Such treatment certainly points to ceremonial anthropophagy. Other graves are found with the bones separated and sorted in classes. The type of the graves is like that of those of the circle at Mycenæ—open square pits, roofed over with beams of wood. They are always, by preference, in shoals of water courses, showing that the race came from a rocky country, where excavation could not be made except in alluvium. The great development of the legs points to their having come from hills, and not from a coast or valley. The frequency of forked hunting lances shows their habit of chasing the gazelle. Metal and flint were both in use by these people. Copper adzes show that wood was wrought, and finely carved bulls' legs to a couch illustrate the work. Copper harpoons were imitated from the form in bone. Copper needles indicate the use of sewed garments, and the multitude of spindle wheels in the town proves how common weaving must have been. Flint was magnificently worked far more elaborately than by the Egyptians of any age; the splendid examples in the Ashmolean and Pitt Rivers Museums at Oxford are now seen to belong to this people. Both knives and forked lances are found. Stone vases of all material, from alabaster to granite, were favorite possessions; they are beautifully wrought, but entirely made by hand, without any turning or lathe work. A very puzzling class of objects long known in Egypt are the slate figures of birds and animals, rhombs, squares, etc. These now prove to be the palettes for grinding malachite, probably for painting the eyes, as among Egyptians of the fourth dynasty. Beads were favorite ornaments, and were made of carnelian, lazuli, transparent serpentine, and glazed stone. Pottery was the favorite art of these new people; the variety, the fineness, and the quantity of it are surprising. Few graves are without ten or a dozen vases, sometimes even as many as eighty. Most of these are of the coarser kinds, merely used for containing the ashes of the great funeral fire, for though the bodies were never burned, a great burning was made at each funeral, the ashes of which were carefully gathered and preserved, sometimes as many as 20 or 30 large jars full. . . . The varieties of pottery are the polished red hæmatite facing, the red with black tops (due to deoxidation in the ashes), and the light brown with wavy handles, like the Amorite pottery. A later stage of pottery was

of coarser brown, and of much altered forms, copying somewhat from Egyptian temples of the old kingdom. The wavy-handled jugs went through a series of changes, forming a continuous scale by which their relative ages can be seen. Animal-shaped vases and many curious sports are found in the red-faced pottery. Besides these forms, three kinds of pottery seem to have been imported: buff vases imitating stone, with red spirals and figures of animals and men; red polished vases with figures of animals and patterns in white; and black bowls with incised patterns, most like the earliest Italic pottery. Besides these designs, a great variety of marks are scratched on the local pottery; but not a single hieroglyphic or sign derived from Egyptian writing has been found. Another fact showing the isolation of these people from the Egyptians is that all of this fine pottery is hand made; the wheel was unknown." While the source of this new race can not yet be determined, some of the objects point strongly to an Amorite connection, and others indicate a western source; but the Amorites were, as Mr. Petrie suggests, probably a branch of the fair Libyan race. The geographical position is all in favor of the race having come into Egypt through the western and great oases, for the seventh and eighth Egyptian dynasties were still living at Memphis, showing that no people had thrust themselves up the Nile valley. The age of the new race is fixed by the juxtaposition of their burials with those of the fourth and the twelfth dynasties, and of their towns with burials of the twelfth and thirteenth dynasties; and the known history further limits the date to between the seventh and ninth dynasties, or about 3000 B. C. The account of the discovery given by Mr. Quibell is parallel with Dr. Petrie's, and in harmony with it; and these two authors agree in the supposition that the people of the new race were Libyans who invaded Egypt at or after the close of the sixth dynasty—perhaps, Mr. Quibell suggests, they were the foreigners who subverted the old empire.

**Antiquities from Deir-el-Bahari.**—An exhibition of articles from the temple at Deir-el-Bahari given in London in July included many objects of novel interest and value dating from about 1400 B. C. Among them were a series of tools, models, and vases which had been marked with the name of Queen Hatshepsu, or Hatasu, and deposited below the foundations of the temple. The metal blades of the tools are of bronze, and the handles and wooden objects of sycamore. There were besides these jars of unglazed red ware, pots of alabaster with original covers, wooden models, probably of thrashing sledges, wooden hoes, the leathers of which were found in bundles close by; adzes, adze handles, stands of basket work for jars, a sacrificial knife and axe, and blue scarabei of the queen. A number of large painted coffins contained complete all the accessories of burial—the bead nets with genii in blue beadwork on the breasts of the dead; the wooden hawks and jackals, symbols of Horus and Anubis, on guard over the coffins; and the wooden boxes filled with blue *ushabti* figurines at the feet. The mummies in them are those of a priest of Khonsu, his mother, and her sister; and all were found together in a pit



excavated at a later period than the queen's in a corner of the temple, and preserved by the collapse of the roof above. A curious illustration of an ancient Egyptian belief is afforded by a child's coffin having a pair of baby shoes buried with it. The shoes are cut in two to render them useless to a spoiler, while they would remain as good as ever for the child's use in a spirit world; the parents believed that the child would carry and wear its shoes alternately on its ghostly journey, as they carried and wore theirs (and the *fellahin* does still) on earth. Near the coffin was another small one, containing a rudely cut witch-doll. Some Coptic objects in the collection may cast light on ancient Christian customs and ritual. A number of late Coptic breast clothes afford evidence of the survival of the practice of mummification far into Christian times. One of a large number of *ostraka* contains matter bearing upon the controversy as to the remarriage of divorced persons.

**Archæological Work at Alexandria.**—An archæological exploration of the ancient city of Alexandria has been made by Mr. D. G. Hogarth, on behalf of the Egyptian Exploration Fund, without revealing any promise of important discoveries. The central part of the old Roman city has been found to be covered with a deposit from 15 to 30 feet thick, mostly composed of Arab living refuse, containing no objects of interest. Such remains as exist of the Roman town are in very bad condition, and exhibit everywhere the appearance of having been ruined and rifled systematically, while immediately below this water is tapped, and indications are found that the soil has subsided. Mr. Hogarth is convinced that no great mine of museum treasure remains to be explored under Alexandria; that its libraries have perished utterly; and that all the monuments have been destroyed or robbed of what could give them value and interest.

The excavations of Dr. Botti, the Director of the Alexandria Museum, in the neighborhood of Pompey's Pillar, have resulted in the discovery of the Serapeum, where the last of the great libraries of Alexandria was preserved. The discoveries include the *piscina* of the fountain of the Acropolis, with the channels cut through the rock which conducted the water to it: inscriptions of the time of Hadrian and Severus, dedicated to "Serapis and the deities worshiped with him in the temple"; remains of gilded ornaments and a bull of fine workmanship, all of which came from the great central court; a few tombs; and long subterranean passages cut through the rock under the site of ancient building, and once accessible from the court. The passages are broad and lofty, and were originally faced with masonry. Here and there are niches in the rock for the lamps which illuminated the passages.

**Exploration of Philæ.**—The Egyptian Council of Ministers has approved a proposal by M. Garstin for clearing Philæ of *débris* in order to make a thorough examination of the bases of the temple, and explore the subterranean passages that intersect the island. The work will be done by the Public Works Department, an officer from the Antiquities Department attending to insure that all objects of interest are preserved.

**Babylonian.**—The possible age of the ruins in the valley of the Euphrates has been estimated by Dr. J. P. Peters, of Philadelphia, who has excavated in the region, on the basis of the rate of alluvial deposits. The deposits from the known date of Alexander's conquest display marked uniformity. Taking the depth of these as a standard, the foundations of Ur (the modern Machair) and of Eridu (the modern Abu-Shahrain) must have been laid about B. C. 7000.

*The Black Obelisk of Shalmaneser II.*—The inscriptions and sculptures on the black marble obelisk of Shalmaneser II discovered by Layard at Nimroud in 1846, and preserved in the British Museum, prove to be important. They record a campaign undertaken by Shalmaneser against Hazael, of Damascus. An epigraph attached to one of the groups of figures—which in all occupy 20 panels—records the submission of Jehu to the Assyrian king and his consent to pay him tribute. The group itself represents Jehu prostrate before the great king, accompanied by his ambassador. On other panels his attendants are depicted bearing in their hands and on their shoulders the articles of which the tribute is composed. Two Assyrian officers introduce Jehu and his envoys. One of these holds in his hands a scroll, from which he reads the proffered submission and the list of articles offered by the Jewish king. The physiognomy of these personages is characteristic.

*Ancient Babylonian and Hebrew Literature.*

—In a paper read in the Anglican Church Congress at Norwich Prof. A. H. Sayce presented some of the results of his studies with those of other Orientalists of the collections of cuneiform texts and other ancient documents which have been collected during several years past in researches prosecuted in Egypt, Syria, and Mesopotamia as bearing on the credibility of the Old and New Testaments. These documents are very numerous, and a considerable proportion of them date back to a period several centuries anterior to the time of Moses. Of the general bearing of the testimony they afford, the author said that we now know that the Mosaic age in the East was a highly literary one, and that it would have been a miracle if the Israelites, whether in Egypt or in Canaan, had not shared in the general literary culture of the time. In the century before the Exodus an active correspondence was constantly going on from the banks of the Nile to those of the Euphrates, and this correspondence was in the foreign language and foreign script of Babylonia, necessitating the existence all over the civilized East of schools and libraries, of teachers and pupils. The antiquity of Babylonian literature was equally great. The chief cities of the country boasted of their libraries, some of which had been founded six thousand years ago, and at the very time when Abraham was born in Ur of the Chaldees one of its poets was composing a great epic in 12 books, which formed the close of a long preceding period of epic verse. So far as the ancient East is concerned, we can not too soon rid ourselves of the notion that literature is a modern invention. Moses, then, could have written the Pentateuch, and those to whom it is addressed could have read and understood it. The books of the Old Testament are but a fragment of the Hebrew



literature which once existed, and, even apart from possible corruptions of the text, the meaning of numerous Hebrew words and grammatical constructions is merely a matter of conjecture. The Assyrian monuments have already proved helpful in determining the signification of Hebrew words, and have also cast light upon the manner in which the biblical books were composed, and upon the authenticity of the materials that enter into them. Contemporaneous documents are continually being discovered which attest the truth and historical character of the statements in Genesis. Thus a direct and complete confirmation has been furnished of the historical accuracy of the story of the campaign of Chedorlaomer and his allies against the Canaanites in a series of tablets relating to military events in that region, in one of which King Eri-Aku (Arioch), of Larsa (Ellasar) is associated with the Princes Kudur-Lagamār (Chedorlaomer) and Tud-Khal (the Tidal of Genesis). In connection with the overthrow of Eri-Aku, and the Elamites by Khammurabi, the rival king of Babylon, recorded in other tablets, Mr. T. D. Pinches has found that the names of the kings of the dynasty to which Khammurabi belonged are not Babylonian or Assyrian, but present curious resemblances to Hebrew names, as well as to south Arabian names; and he has found in contract tables dated in the reigns of Khammurabi and other kings of the dynasty the names of Yakub-ili and Yasup-ili, or Jacob-el and Joseph-el. The names, Prof. Sayce says, "are distinctively Hebrew, and prove that in the very century in which the Bible assigns the lifetime of Abraham Hebrews with Hebrew names must have been living in Babylonia." The Egyptian monuments of the eighteenth and nineteenth dynasties mention places in Palestine called Jacob-el and Joseph-el, and Prof. Flinders Petrie found in 1894 a scarab bearing the name of a Pharaoh, Jacob-el, who must have reigned over Egypt in the obscure period when it was ruled by Asiatic conquerors. The name Abram, further, had been already noted in Babylonian contracts of the time of Eri-Aku or Arioch. The relationship of the names of this dynasty both to Hebrew and to south Arabian names may, moreover, be taken to indicate that the Hebrews and the tribes of southern Arabia had a common ancestor, and that their common meeting place was in Babylonia; in illustration of which we read in the tenth chapter of Genesis that "Unto Eber were born two sons," one of whom was Peleg, the ancestor of Abram, and the other was Joktan, the ancestor of the tribes of southern Arabia.

**ARGENTINE REPUBLIC**, a federal republic in South America. The President is elected for six years by electors chosen in the several provinces. The National Congress consists of a Senate and a House of Deputies. There are 30 Senators, elected one third every two years, for six years by the legislatures of the 14 provinces, except the two representing the capital district, who are chosen by an electoral college. There are 86 Deputies, of whom one half are renewed every two years. They are elected by direct popular suffrage. The President of the republic for the term ending Oct. 12, 1898, is Z. S. Urriburu, who, as Vice-President, succeeded Dr.

Saenz Peña when the latter resigned, on Jan. 22, 1895. The following Cabinet was in office in the beginning of 1895: Interior, M. Quintana; Foreign Affairs, Dr. Eduardo Costa; Finance, Dr. J. A. Terry; Justice, Worship, and Instruction, J. V. Zapata; War and Marine, Gen. L. Campos.

The area of the country is 1,125,086 square miles. The population was estimated at 4,257,000 in 1892. The census of 1895 makes it over 4,750,000. The population of Buenos Ayres, the capital, in 1895 was 620,000, over 25 per cent. of whom were foreigners. The number of immigrants who arrived in 1893 was 84,420; the total net immigration since 1873 was 1,116,000. Among 52,067 immigrants who landed at Buenos Ayres in 1893, Italians numbered 37,977, Spaniards 7,100, French 2,612, Germans 966, Russians 748, Austrians 685, others 1,979. More than one fifth of the total population are of foreign birth, mostly Italians, French, and Spaniards. There are also many English and German settlers. The immigration, which fell off on account of the financial crash from 260,909 in 1889 to 138,407 in 1890, and lower still in the succeeding years, began to recover in 1893. Immigration from the British Islands, however, continued to decline.

**Finances.**—The actual revenue for 1893 was \$31,909,953 in gold and \$108,801,225 in paper; the expenditure was \$31,303,149 in gold and \$97,627,956 in paper. The revenue for 1894 was estimated at \$34,193,400 in gold and \$20,280,000 in paper, and expenditure at \$18,418,000 in gold and \$66,033,380 in paper. The actual receipts were \$27,790,500 in gold and \$24,861,412 in paper. For 1895 the gold receipts are estimated at \$34,373,000, of which \$28,800,000 are import duties, \$2,500,000 export duties, \$700,000 storage duties, \$840,000 harbor dues, \$150,000 consular taxes, \$220,000 charges for statistics, and \$1,163,000 interest. The revenue paid in paper currency is estimated at \$23,825,000, of which \$1,600,000 are land taxes, \$6,600,000 stamp duties, etc., \$3,350,000 postal and telegraph receipts, \$4,820,000 railroad receipts, etc., \$6,930,000 excise duties, and \$525,000 miscellaneous receipts. The expenditure for 1895 is estimated at \$18,418,300 in gold and \$61,777,574 in paper, divided as follows: Congress, \$1,969,016 paper; Interior, \$2,644,800 gold and \$18,670,373 paper; Foreign Affairs, \$159,960 gold and \$733,934 paper; Finance, \$15,613,540 gold and \$7,343,169 paper; Justice and Worship, \$10,267,291 paper; War, \$14,623,128 paper; Marine, \$8,170,653 paper.

The external debt in December, 1894, amounted to \$219,020,172, payable in gold. The total funded debt was \$262,033,716 in gold and \$46,500,794 in paper, entailing an annual charge of \$11,193,491 gold and \$2,100,000 paper. The total indebtedness of the Government in January, 1894, was \$416,778,905 in gold and \$63,980,376 in paper. The external provincial debts in 1894 amounted to \$131,000,000 in gold, with \$21,000,000 interest in arrears and the municipal debts to \$24,596,422 in gold, with \$697,081 unpaid interest.

**The Army and Navy.**—There is a regular army of 1,398 officers and 6,498 men and a National Guard, in which 480,000 men are enrolled, of whom not more than 65,000 have received

military training of any kind. The military academy has about 150 cadets. Connected with it is a school for noncommissioned officers. In the naval academy about 60 cadets are in training, and 80 men in a gunnery school. The navy consists of 3 armored cruisers, 2 second-class cruisers, 12 of the third class, 2 monitors, and 8 first-class and 6 second-class torpedo boats. Of the armored cruisers, the "Almirante Brown," of 4,200 tons displacement, has 9-inch plates, carries 8 12-inch Armstrong guns, and has a speed of 14 knots; the "Libertad" and "Independencia," of 2,500 tons displacement, carry 9½-inch Krupp guns in pairs in a barbette, besides 4 4·7-inch quick-firing guns, and have 8 inches of armor on the sides. The cruiser "9 de Julio," of 3,575 tons displacement, has made 21·9 knots at natural draught, and is armed with 12 6- and 4·7-inch quick-firing guns. The torpedo gunboat "Aurora" steams 18·5 knots, and the new "Patria," of 1,183 tons, armed with 2 4·7-inch and 6 small quick-firing guns, can make 20·5 knots with forced draught. Naval commissioners were sent to Europe in 1895 to purchase cruisers to be added to the navy. They acquired the Italian "Garibaldi," rechristened the "San Martin."

**Commerce and Production.**—The value of the merchandise imports for 1893 was \$96,105,359 in gold, and of the exports \$92,703,834. Of the imports, \$32,509,344 were textile fabrics and apparel, \$10,724,015 food substances, \$13,055,393 iron and manufactures thereof, \$8,341,895 beverages, \$4,889,389 timber and wood manufactures, \$3,279,688 paper, \$2,360,451 pottery and glass, \$6,868,085 coal and oil, and \$4,095,902 chemicals. Of the exports, \$52,997,619 represent animals and animal products, \$29,017,260 agricultural products, \$4,769,713 manufactures, \$2,251,192 forest products, \$362,446 mineral products, and \$3,305,604 miscellaneous products. The export of wool was 123,230 tons; of sheepskins, 25,569 tons; of wheat, 1,008,137 tons; of Indian corn, 84,507 tons; of meat, 68,371 tons. The imports of gold and silver amounted to \$4,688,658, and the exports to \$815,585. The value of the trade in 1893 was as follows:

COUNTRIES.	Imports.	Exports.
Great Britain.....	\$32,523,163	\$18,531,905
France.....	12,114,164	18,323,465
Germany.....	11,009,865	10,452,395
Belgium.....	9,635,758	10,939,551
United States.....	9,610,934	3,416,740
Italy.....	9,318,084	3,390,107
Brazil.....	2,117,377	12,038,050

Imports from Germany, Belgium, Italy, and the United States showed a considerable increase, while those from Great Britain fell off slightly. In 1894 the imports from the United States continued to increase, although those of other countries declined. A new tariff adopted by the Argentine Congress in February, 1895, is favorable to the trade of the United States. There are reductions on many products and manufactures of this country. The new duties on some of these are: Farm wagons, 10 per cent. *ad valorem*; binding-twine, 5 per cent.; plows, 5 per cent.; mowing-machines, 5 per cent.; rosin, 5 per cent.; wood pulp, 2½ per cent.; canned fruit or vegetables, 15 cents in gold per kilo;

fruits in sirup, 27 cents; lard, 8 cents; kerosene, 1¼ cents a litre. The duty on pine lumber is considerably reduced, while coal and coke and also locomotive engines, thrashing-machines, with or without motors, and binders and headers are made free.

The trade in jerked beef and cattle with Brazil, Cuba, and other tropical countries has recently been supplemented by a more important trade in frozen meat and fattened beeves with England, Chili, France, Germany, and Belgium. To produce beef cattle for the new markets the native *criollo* stock has been crossed with shorthorns and Herefords, of which breeds thousands of pedigree bulls have been imported. In no other country can cattle and sheep be raised and fattened as cheaply, on account of the rich natural grasses and the exceptional climate, in which animals can be fattened in the open air in winter in wire-fenced inclosures. Four-year-old graded steers raised on the prairie grasses and fattened on alfalfa or lucern, receiving no grain at all, have brought £25 a head in England. A class of middlemen, mostly English, have taken up the business of fattening cattle for export, sending the heaviest of the *criollo* cattle across the Andes to Chili, graded animals weighing about 1,150 pounds to Brazilian ports, and the finest and fattest steers to England. They have not brought as much within 1*d.* or ½*d.* a pound as North American corn-fed cattle, because they are wilder and less uniform in size, age, and quality, and because the grass-fed meat, though good, is not as bright in color. The Argentine sheep are as good as Canadians, and butchers classify them together and pay 6*d.* a pound for both kinds. The alfalfa district, about 20,000 square miles in extent, has been taken up by the English graziers. In other parts of the country alfalfa can be grown only by the aid of irrigation. The export of live cattle and sheep in 1894 was officially valued at over \$5,000,000. The imports of meat and live stock into England during the same year included 1,675,600 frozen sheep and 29,000 quarters of frozen beef, besides 90,000 live sheep and 28,000 bullocks from the Argentine Republic. The production of wheat has greatly increased. In 1893 the crop was 56,725,000 bushels. The cultivation of maize also has been extended until there is a considerable surplus available for export.

The trade returns for 1894 made the total value of imports \$92,800,000 in gold, and that of exports \$101,700,000.

**Navigation.**—The number of vessels engaged in foreign trade entered at Argentine ports during 1892 was 9,948, of 6,046,800 tons, of which 7,298, of 5,336,700 tons, were steamers, and 2,650, of 710,100 tons, were sailing vessels. Of the total number, 4,399, of 1,672,400, tons were Argentine. The British tonnage was 2,723,900 tons.

**Communications.**—There were 8,156 miles of railroad in operation in 1894, in which \$399,457,906 in gold were invested. The receipts in 1893 were \$66,723,326 and expenses \$39,338,490. The lines owned by the Federal Government represented \$42,107,501 of the invested capital; guaranteed lines, \$83,259,321; lines built by companies, \$224,717,783; lines aided by the



provincial governments, \$49,373,300. New lines and extensions have been authorized to the extent of 3,170 miles. About \$300,000,000 of European capital is invested in Argentine railroads.

There are 20,415 miles of telegraphs, of which 11,250 miles belong to the Federal Government, 8,050 miles to railroad companies, and 1,115 miles to cable companies. There were 2,500,000 messages transmitted in 1893.

The post office in 1893 forwarded 123,618,580 domestic and 18,500,000 foreign letters. The Government derived a net revenue of \$2,085,860 from the post office and \$1,005,280 from the telegraphs.

**Resignation of the President.**—A conflict arose in the beginning of the year between Congress, which had been called together in extraordinary session to consider financial and other proposals, and President Saenz Peña. The Congress sanctioned an expenditure of \$2,000,000 in gold for war material in view of the possible complications with Chili on the question of boundaries. The Minister of Foreign Affairs resigned and Dr. A. Alcorta reluctantly accepted the portfolio on Jan. 9. A bill was passed granting a five years' *moratorium* to the Provincial Mortgage Bank, authorizing it to suspend the payment of coupons and to allow debtors to cancel gold cedulas with currency cedulas of any series at the rate of two of the latter for one of the former. By a voluntary arrangement between the British creditors and the cities of Rosario, Santa Fé, and Cordova those municipalities obtained the privilege of paying the interest and principal of their bonds in currency instead of in gold. Still they did not pay anything. The Congress passed another bill empowering the National Government to assume the external debts of the provinces.

When the special order of business had been disposed of Congress adopted a resolution in both Chambers requesting the President to grant a general amnesty to persons implicated in the last revolution. The President refused to entertain the request, which he treated as an invasion of his prerogative. He considered that it would be prejudicial to the discipline of the army and navy to pardon officers who had taken part in revolutionary attempts. The Cabinet, disagreeing with the President, resigned in a body on Jan. 16, and he was unable to find persons to take their places. On Jan. 22 President Peña offered his own resignation to Congress, stating in his farewell message that he had upheld the laws and the Constitution, permitted the free exercise of political rights, and maintained discipline in the army and navy, and that he had kept his promise not to contract new debts or to allow fresh issues of bank notes. His resignation was accepted with only one dissentient vote. Señor Uriburu was sworn in as President on Jan. 23, and a ministry was constituted as follows: Interior, Señor Zorilla; Foreign Affairs, Dr. Alcorta; Justice, Señor Bermejo; Finance, Señor Romero; War, Col. Balza. Congress adjourned on Jan. 25. President Uriburu signed a decree of amnesty, and the prisoners were released immediately. Political exiles in Uruguay returned to their homes. The new President announced, when Congress met on May 8, that

the policy of the Government would be to restore the financial prestige of the country by economies in the public service and the abolition of the floating debt. The question of the redemption of the paper money would be considered, and steps would be taken for the settlement of the railroad guarantees. The floating debt under the existing law was being converted into consols, of which \$5,670,600 had been issued. The President was opposed to these issues, and expected to be able by means of rigid economy to clear off the floating debt.

The budget for 1896 estimated the expenses at \$85,500,000 in paper and \$20,492,000 in gold. There was an increase in the army and navy estimates to provide for purchases of ships, guns, and other armaments made by commissioners who went to Europe in 1895. The payments on account of the public debt remained the same as in the budget for 1895. To obtain the additional revenue required, the Government proposed to add a surtax of 1 per cent. on all products assessed on the *ad valorem* system, increasing the duty on all imports, and to augment the internal duties on alcohol and tobacco in a much greater ratio.

**ARIZONA**, a Territory of the United States, organized Feb. 14, 1863; area, 113,020 square miles. The population, according to each decennial census, was 9,658 in 1870; 40,440 in 1880; and 59,620 in 1890. Capital, Phenix.

**Government.**—The following were the Territorial officers during the year: Governor, Louis C. Hughes, Democrat; Secretary, C. M. Bruce; Treasurer, P. J. Cole; Auditor, C. P. Leitch; Adjutant General, Edward Schwartz; Attorney-General, F. J. Heney; Superintendent of Instruction, F. J. Netherton; Chief Justice of the Supreme Court, Albert C. Baker; Associate Justices, John J. Hawkins, Owen T. Rouse, and James D. Bethune.

**Finances.**—The Territory has attained a high degree of financial prosperity. In 1891 its treasury showed a deficit of more than \$42,000; in 1892, one of more than \$51,000; and in 1893, one of more than \$34,000. In 1893 Congress authorized the funding of all the municipal indebtedness of the Territory at 5 per cent. Under this authority, maturing parts of the debt will be replaced by a 5-per-cent. loan, where they can not be paid. Through the practice of economy, the treasury held a surplus at the end of the fiscal year 1894 of \$5,832, and in the fiscal year 1895 it was able to reduce the Territorial indebtedness, which on July 1, 1894, aggregated \$874,624, by \$50,485. The total bonded debt is 1894 was \$2,036,000; the floating debt, \$170,523—total, \$2,206,523, of which \$1,331,899 was the aggregate of county and city indebtedness, leaving the net Territorial debt as above.

**Valuations.**—The assessed valuation of all taxable property in 1894 was \$27,061,974, and in 1895 \$27,518,332, an increase of \$456,358.

**Banking.**—On Oct. 31, 1894, Arizona had 5 national banks. The total capital was \$400,000; amount of United States bonds held to secure circulation, \$100,500; coin and coin certificates, \$109,453.05; notes issued for circulation, \$244,800—redeemed \$147,350, outstanding \$97,450; and loans and discounts, \$524,304. The Territorial banks numbered 4, and had aggre-



gated capital of \$240,200, resources of \$1,327,176, deposits of \$692,037, and surplus and profits of \$142,900.

**Mining.**—The output of gold in the fiscal year 1895 was \$4,260,000, an increase of \$2,179,750 over that of 1894, and four times that of 1893; the output of silver was 1,750,000 ounces, representing a decrease of over \$500,000 in value from that of the previous year; the copper output was 49,661,289 pounds, value \$6,207,611; and the lead output, \$350,000 in value. The total value of the bullion exports of the year was \$11,955,111, and the total value of the gold, silver, and copper production of the last nineteen years \$113,739,126.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of 1894: Corn, 4,558 acres, 84,779 bushels, value \$84,779; wheat, 11,000 acres, 187,000 bushels, value \$187,000; barley, 9,966 acres, 249,150 bushels, value \$186,863; potatoes, 391 acres, 24,240 bushels, value \$30,303; and hay, 36,219 acres, 65,919 tons, value \$791,028; total value, \$1,279,973.

**Live Stock.**—In January, 1895, the United States Department of Agriculture estimated the number and value of farm animals in the Territory as follows: Horses 54,278, value \$1,770,815; mules 1,327, value \$39,940; milch cows 14,878, value \$334,755; oxen and other cattle 649,502, value \$6,261,204; sheep 746,546, value \$901,081; and swine 20,904, value \$101,696; total value, \$9,409,491.

**Irrigation.**—Of 579,000 acres of land under cultivation in 1895, all excepting 15,000 acres in the higher altitudes were irrigated. An additional 165,000 acres are now watered by irrigating canals, but have not been put under cultivation. The gross increase of the farming area in 1895 was 45,000 acres. Canals and storage reservoirs now under construction will reclaim 535,000 acres within the next two years, and other works in contemplation will bring under cultivation over 750,000 acres more. Gov. Hughes recommends the creation of a board of irrigation engineers, consisting of the Territorial irrigation engineer and two United States army engineers, to inspect all irrigation works, in order to guard against disaster resulting from breaking of dams or irrigating reservoirs.

**Education.**—The total number of children enrolled in the public schools in 1895 was 11,450; number of teachers employed, 314; amount paid in salaries during the year, \$137,291.37; total expenditures for public-school purposes, \$201,357.89; total value of public-school property, \$415,132.02. The last Legislature provided for the establishment and maintenance of public high schools: for the education of the deaf, dumb, and blind; and for military education in the public schools. A new normal-school building is being erected at a cost of \$46,500, and a reform school at Flagstaff will be opened early in 1896. Gov. Hughes recommends that the school lands of the Territory be leased, the revenue therefrom to be appropriated to the maintenance of public schools, claiming that \$75,000 per annum would be realized from this source. The sectarian school enrollment is estimated at 700, and the annual cost of maintaining such schools \$10,000.

**Railroads.**—On Dec. 31, 1893, the total single-track mileage was 1,161.97; during 1894 4 lines increased their mileage by 193.49 (the largest increase in any State or Territory in that year); making the total mileage on Dec. 31, 1894, 1,355.46. The Santa Fé, Prescott and Phenix Railroad was extended to Phenix and was formally opened at the capital on Feb. 28.

**Industries.**—During 1895 the exports of lumber aggregated 35,000,000 feet; wool, 2,904,130 pounds; sheep, 48,596; hides, 72,500; and agricultural products, in value over \$1,779,000.

**Periodicals.**—The newspapers and periodicals number 43, of which 10 are daily and 33 weekly.

**Political.**—Among the enactments of the last Legislature are a new election law containing stringent provisions concerning crimes and offenses against the elective franchise; an act providing for a Territorial board of insurance commissioners; an act creating the county of Navajo; an act creating a Territorial board of immigration commissioners; an act repealing the act establishing a board of railroad commissioners; an amendatory act making the qualification for holding public office the ability to read and write the English language; an act to create a Territorial board of control for charitable, penal, and reformatory institutions; an act providing a penalty for "salting" mines; an act requiring foreign insurance corporations to give bonds for the security of local policy-holders; an act raising the age of consent from fourteen to eighteen years; and an act to prevent waste of water.

**ARKANSAS**, a Southern State, admitted to the Union June 15, 1836; area, 53,850 square miles. The population, according to each decennial census since admission, was 97,574 in 1840; 209,897 in 1850; 435,450 in 1860; 484,471 in 1870; 802,525 in 1880; and 1,128,179 in 1890. Capital, Little Rock.

**Government.**—The following were the State officers during the year: Governor, James P. Clarke, Democrat; Secretary of State, H. B. Armistead; Auditor and Insurance Commissioner, C. B. Mills; Treasurer, Runson Gulley; Attorney-General, E. B. Kinsworthy; Commissioner of State Lands and Timber Agent for the State, J. F. Ritchie; Superintendent of Public Instruction, Junius Jordan; Commissioner of Mines, Manufactures, and Agriculture, W. G. Vincenheller; Chief Justice of the Supreme Court, Henry G. Bunn; Associate Justices, Simon P. Hughes; C. D. Wood, Burrill B. Battle, and James E. Riddick; Chancellors, T. B. Martin, James F. Robinson, and L. Leatherman.

**Legislative Session.**—The thirtieth biennial session of the General Assembly began on Jan. 14, 1895, and continued until April 10. During the seventy-five days on which the Legislature sat 283 bills were introduced in the Senate and 479 in the House. The message of the incoming Governor was devoted entirely to presenting reasons for revising the State Constitution and suggesting a means by which provision might be made for paying the current interest on the State debt. Among the general measures that became laws are the following:

That all railroads over 5 miles long, propelled by steam or electricity, be not allowed to charge more than 12½ per cent. of the cost of a first-class fare be-

tween points in the State per 100 pounds for excess of baggage over 150 pounds.

That all able-bodied persons who do not seek some honest employment to procure a livelihood and such persons who are found begging when employment can be obtained shall be treated as vagrants.

Married women may make executory contracts and execute letters giving power of attorney.

Where either party shall subsequent to marriage have become permanently or incurably insane it shall be cause for divorce.

Failure to enforce law on the part of any municipal officer constitutes nonfeasance in office. Circuit court to have jurisdiction over such cases.

That every mechanic or other person who shall perform work on, or furnish material for, any building or improvement of any kind under contract shall have a lien upon such building or improvement, said lien to have priority over any and all other incumbrances, mortgages, etc., except such liens as are created for the purpose of raising funds to make such erection or improvements.

In cases where heirs do not apply within three years after death of testator, or intestate, it is made lawful for executor or authorized person to publish a call to such legatees or heirs to appear. Otherwise, he deposits such sums in office of probate clerk, subject to order of probate judge.

County courts are empowered to refund existing lawful bonded indebtedness by issuing bonds of their respective counties in lieu of bonds heretofore issued by them under any law of the State.

To create county boards of medical examiners.

To tax national bank notes, United States legal-tender notes, and other notes and certificates of the United States circulating as currency, and for other purposes.

Makes all circulating notes taxable. Holders and owners to list such notes under oath.

To quiet tax titles in certain cases.

To give well and cistern diggers a lien on land upon which improvement is situated.

To give laborers' lien on output, machinery, tools, etc., of mines and quarries.

To provide for the appointment of boards of trustees of the State charitable institutions.

To reorganize the Board of Commissioners of the Penitentiary.

To make it unlawful for any club to keep intoxicating liquors for the use of members without first procuring a license.

To require assessors and collectors to indicate the race of persons liable to taxation.

To make it a misdemeanor to sell, offer for sale, or have in possession with intent to sell, any article of merchandise stamped "sterling," or "sterling silver," unless 0.925 of the component parts of its metal are pure silver. If the article is stamped "coin," or "coin silver," 0.900 shall be considered pure silver.

**Finances.**—In September Auditor Mills discovered that instead of 1,805 outstanding bonds, the State of Arkansas has only 1,753, which makes a difference of \$230,000 in the State's outstanding indebtedness.

In the last biennial report of the operations of the State Treasurer's office, the bonded indebtedness, including interest to Oct. 1, 1894, is given as \$4,823,022.50. A credit is claimed on bonds held by the United States to the amount of \$202,293.33.

In his message on his retirement from office, Gov. Fishback repeats his special message to the preceding Legislature urging the passage of an act directing that all evidences of debt against the State shall be brought to the Treasurer before a certain date, to be by the State Debt Board examined, registered, and stamped,

and decreeing that all evidences of debt not so presented shall forever be barred from payment. He says that since his message first was issued several bonds have been presented for payment which were found to have been paid already by the State.

The Direct Tax fund was created by the appropriation, by an act of Congress of March 2, 1891, of \$156,272.65 to refund the direct tax paid by Arkansas to the National Government in 1865 and 1866. The account of this fund at the beginning of the year is as follows: Original fund, \$156,272.65; on hand Jan. 1, 1893, \$52,595.69; received May 23, 1893, \$15,170.27; disbursed between Jan. 1, 1893, and Jan. 1, 1895, \$29,828.14; on hand Jan. 1, 1895, \$37,937.82.

The condition of the controversy between the Government of the United States and the State of Arkansas, as indicated by the Governor's message on this subject is as follows: The General Government acquired by purchase in 1838, for the use of various trust funds, \$793,000 face value of Arkansas State bonds, which now, with accrued interest, amount to \$2,671,952.50. For twenty years pressure for payment has been made. In 1889 the State Legislature conferred upon the Governor plenary power to represent the State in a negotiation looking to a final settlement. In 1891 Congress conferred upon the Secretary of the Interior and the Secretary of the Treasury similar power, and these officials appointed a committee to conduct the investigation on the part of the Government. On the receipt of their report to the secretaries, a conference between the secretaries and the Governor followed with a view of reaching a definite basis of settlement. Terms of agreement were decided upon, and a bill ratifying them was submitted to Congress in February. The State Legislature, by a concurrent resolution of both Houses, formally assented to the settlement agreed upon. The State had put in counter-claims to almost the full amount claimed by the Government. The Governor's message says:

We had undisputed credits to the amount of \$358,231.13. To extinguish the large balance, we made an effort to show that the balance was equitably extinguished by claims arising in our favor out of the failure of the General Government to patent to this State all of the lands covered by what is known as the Swamp Land Grant of 1850. This is the principal source of our counter-claim, although we made, and were allowed, considerable credits on account of fractional sixteenth sections and for lands to which we are entitled under what is known as the Saline Land Grant. These two latter items are not large. We were also allowed credit for \$206,000, being 5 per cent. of cash derived by the General Government from sale of public lands in this State, as we were also credited with \$7,000 for use of penitentiary during the late war, as place of confinement for military prisoners. As a result of this settlement the State of Arkansas is to receive all of her bonds and coupons except 160 bonds of \$1,000 each, coupons being cut therefrom up to Jan. 1, 1895, and in return the State is to release and quit claim to the General Government all claims under the Swamp Land Grant or any other.

**Banks.**—On May 7 the deposits on hand in the national banks in the State amounted to \$2,017,000; the loans and discounts were \$2,181,000; the average reserve fund was 43.37 per cent. During the two years preceding January,



1895, 7 State banks were established, with capital stock amounting to \$300,000.

**Railroads.**—The total valuation of railroad property in 1894 was \$19,932,353. The increase in the assessments for 1895 aggregates \$1,095,000, the heaviest increase being in the Iron Mountain assessment, which is \$889,000 greater than last year. Next comes the Cotton Belt, whose assessment is increased \$209,000. The mileage is not materially changed since last year, the increase being mainly in side tracks.

In September articles of incorporation of the Arkansas and Choctaw Railroad were filed, the capital stock being \$1,500,000. The road will extend from Ashdown, Little River County, into the Indian Territory, 70 miles.

**Red River Improvement.**—For the improvement of the Red River in Louisiana and Arkansas \$1,325,000 has been appropriated. The improvement consists of snagging, dredging, and protecting by revetments and levees.

**Education.**—The common-school fund, amounting to \$321,255.87, was apportioned in August, the number of school children in the State being estimated at 438,711, and the amount apportioned to each child being 73 cents, a balance of \$953.04 remaining in the treasury.

The Legislature appropriated \$10,000 a year for the next two years for the establishment in each county of normal institutes for white teachers, and for such additional ones for colored teachers as may be decided upon by the Superintendent of Public Instruction. For the maintenance of the branch normal college until April, 1897, \$11,400 was appropriated, and for the support of the Industrial University \$48,950, until the same date. The university reports 615 pupils at the close of the school year, who were instructed by 35 teachers.

**Charitable Institutions.**—The biennial reports of the State asylums to Oct. 1, 1894, show that in the Insane Asylum on that date the number of inmates was 485, of whom 383 were white and 102 colored. In the Deaf Mute Institute 187 pupils were enrolled. The School for the Blind had 135 white and 28 colored pupils, for whose maintenance \$35,292.47 had been paid out during the preceding eighteen months. Among appropriations made by the Legislature in March of this year was \$57,188 for the School for the Blind, \$81,440 for the Deaf Mute Institute, \$17,350 for the Soldiers' Home, and \$187,792 for the conduct of the Insane Asylum, all for a period of two years. To repair the damage to the Insane Asylum by the cyclone of last year an appropriation of \$4,500 was made, and to provide for constructing a sewer from the asylum and from the Deaf Mute Institute, to connect with the sewer for the Penitentiary, \$12,500 was appropriated. For the maintenance of Confederate soldiers not in the Soldiers' Home and entitled to pensions, \$35,000 per annum was voted.

**Penitentiary.**—The report of the committee to investigate the management of the Penitentiary, made in March, shows that since May, 1893, when the State assumed control of it, the Penitentiary not only has become self-sustaining, but has made a net gain of \$49,336.36. Of the \$31,500 appropriated for its maintenance

during two years by the Legislature of 1893, \$27,844.75 has been returned to the treasury. The general appearance and physical condition of the convicts is much improved. Their number on March 25 was 854, of whom 253 were white, 597 colored, and 4 Indians.

**Immigration.**—The Commissioner of Mines, Manufactures, and Agriculture reports that the immigration from other States in 1894 was greater than in any preceding year, over 50,000 persons having come into the State. Of public lands, over 70,000 acres were conveyed during the first three months of 1895. The increase of population from 1880 to 1890 was 40 per cent., and the increase in wealth was 102 per cent.

**Elements of Wealth.**—Arkansas has 18,000,000 acres of timber land, from which \$20,000,000 worth of lumber is cut yearly; 4,650,000 acres of coal land; 7,124,000 acres containing ores of iron, manganese, zinc, copper, bauxite, antimony, galena, and silver; 3,150,000 acres containing ocher, clays, kaolin, gypsum, marble, granite, onyx, and slate; and 12,000,000 acres containing sandstone, limestone, lithographic stone, and novaculite. Immense deposits of valuable aluminium clay also have been found.

**Decisions.**—Among opinions of public interest delivered by the Supreme Court during the year are the following: That an expert who testifies as such in behalf of the State in a criminal case is not entitled to compensation in addition to the usual fees allowed witnesses in such cases. He can not be compelled to make an examination or preliminary preparation, nor to attend the trial and listen to the testimony that he may be better enabled to give his opinion as an expert. For any service of this kind he may demand extra compensation; but such information as he already possesses that is pertinent to the issue he can be made to give, whether such information is peculiar to his trade or profession or not. That the taking or reserving of the highest legal rate of interest in advance on negotiable paper having twelve months to run is not usurious. That "original packages," in the manufacture of whisky, means the quantity as put up by the manufacturer for sale and shipment by himself, and for handling in the regular course of trade. That permanency or continuity of ostensible marital relationship is necessary to constitute illegal cohabitation.

**ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE.** **American.**—The forty-fourth meeting of the American Association was held in Springfield, Mass., during Aug. 28–Sept. 7, 1895. The officers of the meeting were: President, Edward W. Morley, of Cleveland, Ohio. Vice-presidents of the sections: A, Edgar Frisby, Washington, D. C.; B, W. Le Conte Stevens, Troy, N. Y.; C, William McMurtrie, Brooklyn, N. Y.; D, William Kent, Passaic, N. J.; E, Jedediah Hotchkiss, Staunton, Va.; F, Leland O. Howard, Washington, D. C.; G, John C. Arthur, Lafayette, Ind.; H, Frank H. Cushing, Washington, D. C.; I, Bernhard E. Fernow, Washington, D. C. Permanent Secretary, Frederick W. Putnam, Cambridge, Mass. General Secretary, James Lewis Howe, Lexington, Va. Secretary of the Council, Charles R. Barnes, Madison, Wis. Secretaries of the sections: A, Asaph Hall, Jr., Ann Arbor, Mich.; B, Ernest Merritt,

Ithaca, N. Y.; C, William P. Mason, Troy, N. Y.; D, Henry S. Jacoby, Ithaca, N. Y.; E, J. Perrin Smith, Palo Alto, Cal.; F, Charles W. Hargett, Syracuse, N. Y.; G, Benjamin T. Galloway, Washington, D. C.; H, Stewart Culin, Philadelphia, Pa.; and I, William R. Lazenby, Columbus, Ohio. Treasurer, Robert S. Woodward, New York.

**Opening Proceedings.**—The usual regular preliminary meeting of the council with which the association begins its sessions was held in The Worthy, which was the headquarters of the association, on Aug. 28, at noon. At this session



EDWARD WILLIAMS MORLEY.

the final details pertaining to the arrangements of the meeting were settled, and the reports of the local committees acted on. Also the names of 101 applicants for membership were favorably considered. At a meeting held on Jan. 29, 1895, 13 names had been already acted on. The general session, with which the public meetings began, was held in Association Hall, of the Young Men's Christian Association, on Aug. 29. The meeting was called to order by Secretary Putnam, who read a letter of regret from the retiring president, Dr. Brinton, announcing his detention in Europe owing to the illness of his wife. Prof. William H. Brewer, the senior vice-president, was then called to the chair, and in a few brief complimentary remarks, in which a reference was made to his magnificent work on the determination of the atomic weight of oxygen, introduced the new president, Edward Williams Morley. Prof. Morley expressed his thanks to the association for the honor that they had conferred upon him, and presented the Rev. Bradley Gilman, of Springfield, who made the prayer. An address of welcome by ex-Lieut.-Gov. William N. Haile, as chairman of the local committee of arrangements, followed, in the course of which he said:

In the contemplation and discussion of these scientific problems which will engross your attention no more suitable place could be found than our Connecticut river valley, with its historical associations,

its environment of many institutions of learning, and its great variety of industries. That your convention will be a success we trust and believe confidently. That its result will have a beneficial effect upon this community we know in advance. This is an age which is demanding the fullest exposition and explanation of the wonderful phenomena hitherto so entirely hidden in obscurity that science is bringing to light. What a vast amount an all-wise Providence has in store for us, which will in due time be made plain to humanity! and it is the privilege of this association, which embraces in its members so many who have achieved marked success in the realm of science, to greatly advance the cause of scientific research and knowledge.

In behalf of Springfield, its mayor, the Hon. Charles L. Long, then welcomed the association to the city. After reference to the meeting held there in 1859 under the presidency of Stephen Alexander, and of the progress in science since that time, he closed with the following:

I am greatly honored in being the representative of such a city, and as its representative in extending to you a cordial welcome to our borders, to an association with our people, to an examination of our institutions, and to such entertainment as we may be able to provide for you; and I assure you that by your presence our citizens appreciate that they are greatly honored by reason of your high standing as individuals, your professional attainments, and the reputation of your association, whose illustrious work in the past will be, I am sure, excelled by the results which will crown its labors in the future.

President Morley then thanked the speakers for their words of welcome and recalled the fact that of the members elected in Springfield in 1859 only three survive, namely, Prof. Simon Newcomb, Prof. Henry A. Ward, and Dr. Samuel H. Scudder. He also said, "This section is the home of the highest literary life of the country, and no State has more intellectual life than Massachusetts."

Miscellaneous business of the association was then taken up, after which the association adjourned to meet in sections.

**Address of the Retiring President.**—The association met in the Court Street Theater on the evening of Aug. 29 to hear the retiring address of President Daniel G. Brinton. Owing to President Brinton's absence, the address was read by the general secretary. Its subject was "The Aims of Anthropology." He said:

My endeavor will be to point out both the immediate and remote aims of the science of anthropology, and to illustrate by some examples the bearings they have on the thoughts and acts of civilized communities and intelligent individuals. . . . I use the term anthropology in the sense in which it has been adopted by this association—that is, to include the study of the whole of man, his psychical as well as his physical nature, and the products of all his activities, whether in the past or in the present. You will readily understand from this the magnitude of the material which anthropology includes within its domain. First, it investigates the physical life of man in all its stages and in every direction. While he is still folded in the womb it watches his embryonic progress through those lower forms which seem the reminiscences of far-off stages of the evolution of the species, until the child is born into the world, endowed with the heritage transmitted from innumerable ancestors and already rich in personal experiences from its prenatal life. These combined decide the individual's race and strain, and potently incline, if they do not absolutely coerce, his tastes and ambi-



tions, his fears and hopes, his failure or success. . . . On the differences thus brought about, and later nourished by the environment, biology, as applied to the human species is based; and on them as expressed in aggregates, ethnography, the separation of the species into its subspecies and smaller groups, is founded.

Concerning archæology, he said :

There is another vast field of study wholly apart from this and even more fruitful in revelations. It illustrates man's mental or psychical nature, his passions and instincts, his emotions and thoughts, his powers of ratiocination, volition, and expression. These are preserved and displayed subjectively in his governments and religions, his laws and his languages, his words and his writings; and, objectively, in his manufactures and structures, in the environment which he himself creates—in other words, in all that which we call the arts, be they "hooked to some useful end" or designed to give pleasure only.

He then discussed in turn prehistoric archæology, folklore, vital statistics, ethnology (concerning the latter he defined its mission to be the definition of "the universal in humanity" as distinguished from all those traits which are the products of fluctuating environment), character-ology, and applied anthropology in their various relations to anthropology. In conclusion he said :

It seems clear, therefore, that the teachings of anthropology, whether theoretical or practical, lead us back to the individual as the point of departure and also the goal. The state was made for him, not he for the state; any improvement in the group must start by the improvement of its individual members. This may seem a truism, but how constantly is it overlooked in the most modern legislation and schemes of social amelioration! How many even of such a learned audience as this have carefully considered in what respects the individual man has improved since the beginning of historic time? Is he taller, stronger, more beautiful? Are his senses more acute, his love purer, his memory more retentive, his will firmer, his reason stronger? Can you answer me these questions correctly? I doubt it much. Yet, if you can not, what right have you to say that there is any improvement at all? Ignorant of his past, ignorant of his real needs, ignorant of himself, man has blundered and stumbled up the thorny path of progress for tens of thousands of years. Mighty states, millions of individuals, have been hurled to destruction in the perilous ascent, mistaking the way, pursuing false paths, following blind guides. Now anthropology steps in, the new science of man, offering the knowledge of what he has been and is, the young but wise teacher, revealing the future by the unwavering light of the past, offering itself as man's trusty mentor and friend, ready to conduct him by sure steps upward and onward to the highest summit which his nature is capable of attaining; and who dares set a limit to that? This is the final aim of anthropology, the lofty ambition which the student of this science deliberately sets before himself. Who will point to a worthier or nobler one?

**Proceedings of the Sections.**—The association is divided into 9 sections, each of which is presided over by an officer having the rank of vice-president of the association. Subsequent to the opening proceedings, each section meets by itself and effects its organization by electing a fellow to represent it in the council, a sectional committee of 3 fellows, a fellow or member to the nominating committee, and a committee of 3 members or fellows to nominate officers of the section for the next meeting. As soon as this organization is effected the secretary

of the section reports to the general secretary, who then provides him with a list of papers that, having been considered suitable by the council, may be read and discussed before the section. A press secretary, whose duties are to receive abstracts of the papers read and to give them to reporters, is an official that has come into service since 1893.

**Sections.**—*A. Mathematics and Astronomy.*—At the meeting held in Brooklyn in 1894 it was decided by the council that the association should gather in some place in California, not far from San Francisco, provided that satisfactory arrangements could be made for transportation. Notwithstanding the efforts made by Prof. Joseph Le Conte, a past president, who had so strongly urged a meeting on the Pacific coast, it proved impossible to make the desired arrangements, and an invitation from Springfield was therefore accepted by the council at a special meeting held on Jan. 26, 1895. Among the officers chosen as vice-presidents were two from California, and when it was decided to hold the meeting in Springfield they found it impossible to attend, and in consequence resigned. The first of these was Edward S. Holden, Director of the Lick Observatory, and to fill his place, Edgar Frisby, of the United States Naval Observatory in Washington, D. C., was nominated by the council and confirmed by the association. Eliakim H. Moore, of Chicago, who had been chosen secretary of the section, likewise resigned, and to his place Asaph Hall, Jr., was chosen.

The following-named papers were read and discussed before the section :

"Development of Some Useful Quaternion Expressions, with Applications to Geometry of Three and Four Dimensions," by James B. Shaw; "The Constant of Aberration," by Charles L. Doolittle; "On the Constant of Nutation," by Seth C. Chandler; "Progress of the Zone Work at the Naval Observatory, Washington, D. C.," by Aaron N. Skinner; "On the Distribution and the Secular Variation of Terrestrial Magnetism," by Louis A. Bauer; "Sun-spots and Magnetic Storms," by Major A. Veeder; "The Spectrum of  $\beta$  Lyræ," by Edwin B. Frost; "Notes on Square Numbers whose Sum is either a Square or the Sum of Other Squares," by Artemas Martin; "Some Results for Stellar Parallax from Meridian Transit Observations at the Washburn Observatory," by Albert S. Flint; "Making Astronomy Popular," by Miss Mary Proctor; "A Convenient Formula for computing Times of Moon Rising" and "On a Slide Scale for Computing Precession," by Edgar Frisby; "Chronology and Ancient Eclipses," by Samuel W. Balch; and "Period of R Comæ," by Henry M. Parkhurst.

*B. Physics.*—The presiding officer of this section was Prof. W. Le Conte Stevens, who fills the chair of physics in the Rensselaer Polytechnic Institute in Troy, N. Y. He chose as the title of his address "Recent Progress in Optics," and discussed "light-waves as standards of length" at first. The new method is operated by interference of beams of light reflected and transmitted by a plate of plane parallel optical glass, and then reflected back by two mirrors appropriately placed; fringes are caught in an observing telescope. The subject of "luminescence" was then taken up, and from the fact that instantaneous luminescence, which is fluorescence, is accompanied by chemical action on a minute

scale, it is probable that all luminescence is therefore jointly physical and chemical. Photography, like luminescence, is a manifestation of the transformation of energy, most frequently of initial short wave length. The production of color by photography is nothing new, but such colors can not be made permanent. Turning to "stationary light-waves," he said, "Two quite different methods are to be considered in tracing the recent development of this interesting application of optical principles." He referred to the work of Becquerel and the more recent studies of Lippman. The latter he considered at some length.

Of the applications of the spectroscope that have resulted in recent additions to our knowledge, it is possible only to make mention of a few. Rowland has been investigating the spectra of all the chemical elements, photographing them in connection with the normal solar spectrum, and reducing them to his table of standards, which is now accepted. Through the spectroscope chiefly has been established the discovery of the atmospheric element, argon; its remarkable property of green fluorescence when the electric spark is passed through it in presence of benzene; and its association in meteoric iron and various minerals with helium, now proved to be a terrestrial as well as a solar element. By photographing the spectrum of Saturn's rings and noting the relative displacement of the different parts of a spectral line, Keeler has obtained a beautiful direct proof of the meteoric constitution of these rings. A new substance with double rotatory power, like quartz, has been discovered by Wyruboff, the neutral anhydrous tartrate of rubidium, which is unique in that its rotatory power in the crystalline state becomes reversed in solution.

He closed with a discussion of certain developments in physiological optics. One discovery is that the rotating color disk has been applied by Ogden N. Rood to the determination of luminosity independently of color by taking advantage of the flickering appearance on a rotating disk upon which two parts have different reflecting powers. An extreme case of this is that of a white sector upon a black disk. At a certain critical speed the retinal shock due to momentary impression by white light becomes analyzed into the subjective impression of spectral colors, the duration of the retinal sensation varying with the wave length of the incident light.

Subsequently the following-named papers were read and discussed before the section:

"Expansion of Jessop's Steel, measured by Interferential Method," by Edward W. Morley and William A. Rogers; "Flow of Alternating Current in an Electrical Cable" and "The Most General Relation between Electric and Magnetic Force and their Displacements," by Michael I. Pupin; "The Significance of Color Terms," "On Standard Colors," and "The Analysis of Floral Colors," by J. H. Pillsbury; "On the Comparison in Brightness of differently Colored Lights and the 'Flicker' Photometer," by Frank P. Whitman; "A New Apparatus for studying Color Phenomena," by Ernest R. von Nardroff; "Voice Production, with Photographs of the Vocal Cords in Action" and "Voice Analysis, with Photographic Record," by Floyd S. Muckey and William Hallock; "Note on the Limits of Range of the Human Voice," by W. Le Conte Stevens; "Observations on the Re-

lations of Certain Properties of Line Spectra to the Physical Conditions under which they are produced," by John F. Mohler and W. J. Humphreys; "The Reproduction of Colors by Photography," by Frederick E. Ives; "Color Definitions for the Standard Dictionary," by William Hallock and Reginald Gordon; "Electrolytic Reproduction of Resonators," "A Photographic Method of Comparing the Pitch of Tuning Forks," and "Illustration of Gems, Seals, etc.," by William Hallock; "An Examination of the Statement of Maxwell that all Heat is of the Same Kind," by William A. Rogers; "An Experimental Investigation of the Rotary Field," by Henry D. Carhart; "Phenomena with Electric Waves analogous to those of Light with a Diffraction Grating," by C. D. Child; "The Effect of Age upon the Molecular Structure of Bronze, Glass, and Steel" and "A New Determination of the Relative Lengths of the Yard and Metre," by William A. Rogers; "A New Formulation of the Second Law of Thermodynamics," by Louis A. Bauer; and "The Method of Reciprocal Points in the Graphical Treatment of Alternating Currents," by Frederick Bedell.

The following papers were presented before a joint meeting of the sections of Astronomy, Physics, Economic Science, and Geography on Aug. 30:

"Relations of the Weather Bureau to the Science and Industry of the Country," by Willis L. Moore; "Solar Magnetic Radiation and Weather Forecasts," by Frank H. Bigelow; "Clouds and their Nomenclature," by Cleveland Abbe; "Cloud Photography" (with lantern illustrations), by Alfred J. Henry; and "California Electrical Storms," by John D. Parker.

C. *Chemistry*.—This section was presided over by Dr. William McMurtrie, of Brooklyn, who discussed "The Relation of the Industries to the Advancement of Chemical Science" in his vice-presidential address. At the outset he mentioned the circumstances which led to the absorption of chlorine by organic bodies, concerning which Dumas declared that "it is not generally known that the theory of substitution owes its source to a *soirée* in the Tuileries." Dumas had been called upon by his father-in-law, Alexander Brogniart, who was director of the Sèvres porcelain works and in a measure a member of the royal household, to examine into the cause of the irritating vapors from candles burned in the ballroom, a demand to which Dumas readily acceded, because he had already done some work upon the examination of wax that could not be bleached and was therefore unmerchable. It was therefore from the application of chemistry to the industries that this fact was established.

It seems to make little difference to which branch of chemical work we turn for illustrations of these ideas. The losses suffered by Italy and France by the diseases of the silkworm, the deterioration of the wines, and the diseases of animals made demands upon the genius of Pasteur, and through his brilliant work and magnificent results attention has been directed to the field of bacteriology and fermentation, and almost a new science has been built upon it. The development of the coal-tar industries and the growth of the use of electricity in the production of chemical products was mentioned. In conclusion he said:

It would be impossible in this discussion to cover more than a few of the manifold ways in which the science of chemistry has been advanced by the industries, their wants, and their wastes. The former



have led to the establishment of the great systems of technical schools, the State and national experiment stations, the various official boards and commissions for the study of those questions which immediately affect the general welfare, and from each and all of these sources come reports of advances which are most gratifying. The latter—that is, the industrial wastes—gave us new elements and new compounds, and so furnished the material for the establishment of new laws. The soap-boiler's lye gave iodine, the wastes of the salt gardens gave bromine, the mother liquors from the springs gave cesium and rubidium, the acid chambers selenium and thallium, and the mines and metallurgical works gave gallium and germanium. Whether we consider this side of the subject of the advancement of our science from one direction or another, we shall find ample encouragement for combination of forces and for closer union of professional and technical workers in our general field of activity.

The following-named papers were then read and discussed before the section:

"Foreign Laboratory Notes," by William P. Mason; "The Coloring Matter of Natural Waters: Its Source, Composition, and Quantitative Measurement," by Ellen H. Richards and Joseph W. Ellms; "Helium and Argon," by Henry N. Stokes; "Recent Views on the Periodic System," by Frank P. Venable; "Double Salts and Allied Compounds," by Charles H. Herty; "On the Volumetric Composition of Water," by Edward W. Morley; "Camphoric Acid," by William A. Noyes; "Constitution of the 1:4 Diketones," by Alexander Smith; "The Constitution of Tetrinic Acid," by Paul C. Freer; "Periodides," "Periodides of Pyridine," "A Few Pyridine Alkyl Normal Iodides," and "Some Inquiries respecting Inherent Limitations in the Accuracy of Analytical Work in General," by Albert B. Prescott; "Dipyridine Trimethylene Dibromide," by R. F. Flinterman and A. B. Prescott; "Some New Color Reactions" and "A Second Modification of Picrylmalonic Ester," by Charles L. Jackson; "The Teaching of Organic Preparations: The Time, Scope, Methods, and Previous Preparation," by Paul C. Freer (with discussion of the above, by William A. Noyes, Thomas H. Norton, A. A. Noyes, and Charles L. Jackson); "Remarks on International Standards of Analysis of Steel," by Charles B. Dudley; "Ammonium Phospho-molybdate and the Reducing Action of Zinc in the Reductor," by Andrew A. Blair, and John E. Whitfield; "Provisional Schedule of Admissible Limits of Accuracy in Certain Metallurgical Analyses," by Edward D. Campbell; "Accuracy in Metallurgical Analysis," by Frederick P. Dewey; "On the Use of Thioacetic Acid as a Laboratory Reagent" and "The Phosphorus contained in Phospho-cereal," by Thomas H. Norton; "On the Sulphides of Arsenic formed in Analytical Work," by Paul C. Freer; "Chemistry as a Liberal Education," by Peter T. Austen; "Journal Reviews," by William A. Noyes; "Remarks on a Specific Form of Cell Metabolism," by Ernest E. Smith; "Products of Pathogenic Bacteria," by E. A. de Schweinitz; "Some Points connected with the Chemistry and Physics of Metabolism," and "Chemistry of Foods and Nutrition," by W. O. Atwater; "Recent Progress in Physical Analysis of Soils," by Milton Whitney; "Calcium Carbide," by P. de Chalmot; "The Major Premise in Physical Chemistry," by Robert B. Warder; "Contributions to the Knowledge of the Laws of the Velocity of Polymolecular Reactions," by A. A. Noyes; "Discussion on Important Phases of Didactic Chemistry" and "Laboratory Construction and Equipment," by Thomas H. Norton; "Bibliography as a Feature of the Chemical Curriculum," by H. Carrington Bolton; "Instruction in General Chemistry," by Charles L. Jackson; "Relative Order of Theory and Description in the Teaching of General Chemistry," by James L. Howe; "Quantitative Exercises in General Chemistry" and "Record of Progress in Agricultural Chemistry," by Henry W. Wiley.

*D. Mechanical Science and Engineering.*—The presiding officer of this section was William Kent, of Passaic, N. J., who delivered a vice-presidential address on "The Relation of Engineering to Economics." He said: The engineer is the tool builder. His best work is the building of an engine which manufactures power, makes industry most productive, and manufactures commodities which are the elements of wealth. The great forces of Nature which the engineer utilizes for the production of wealth are the forces of wind and running water, and the stored energy of fuel in the forests, peat bogs, coal mines, and gas and oil wells. By far the greatest of these forms of stored energy is that of coal. A man's labor by means of coal and a steam engine can be multiplied 650 times. It is generally acknowledged that the steam engine and labor-saving machinery in general are the chief agents of the civilization of the latter half of the nineteenth century, and that they have increased the productiveness of man's labor, increased his wages, shortened his hours of toil, cheapened his food and clothing, and given the average man comforts and luxuries which a century ago not even kings would have commanded. To illustrate the influence of engineering on production and distribution, the completion of the trans-Siberian railroad and the extension of railroads in India and in the Argentine Republic will probably before long make Europe independent of the grain crop of America. The Erie Canal made New York a metropolis. Who can estimate the economic value to the United States of that great feat of engineering, the building of the first railroad across the continent? Mr. Kent contended that the statement that the poor are growing poorer is a falsehood. Statistics prove that the wages of labor have tended ever since the extensive use of the steam engine, say, about 1850, to increase, and the cost of living to decrease. Engineering and mechanical skill also add to the comforts of the people. In concluding, he referred to the relations of labor and capital, and said: "There will be no sudden upheaval. The present relations of capital and labor will not be changed, except as by gradual and necessary evolution, due to engineering more largely than to any other one cause, capital and labor becoming merged by the laborers becoming capitalists. This will be the crowning triumph of engineering, by which the increase of wealth is caused, which enables the laborer to become a capitalist."

The following-named papers were then read and discussed:

"The Economics of Engineering Public Works," by H. N. Ogden; "Mathematical Theory of the Windmill," by De Volson Wood; "Experiments on the Flow of Steam, and Comparison of the Results with Napier's Formula" by John J. Flather; "On Partially Continuous Drawbridge Trusses, with a Method of deducing Formulas for the Reactions," by Mansfield Merriman; "On the Design of Fish-plate Timber Joints," by Harold S. Jacoby; and "The Perfect Screw Problem, illustrated by a Combined Ruling Engine and Comparator in Automatic Operation," by William A. Rogers.

*E. Geology and Geography.*—Jedediah Hotchkiss, of Staunton, Va., was the presiding officer of this section, and the subject of his address



was "The Geological Survey of Virginia, 1835-'41: Its History and Influence in the Advancement of Geologic Science." Owing to the absence of Mr. Hotchkiss at the time appointed for the delivery of his address no abstract of it has appeared. Essentially, it was an informal talk on the geological survey of Virginia, which was conducted under the direction of Profs. William B. and Henry D. Rogers during 1835-1841. According to the speaker, it was the first important geological survey carried on in the United States. The expense for the entire work of five years was only \$100,000.

The following-named papers were then read and discussed before the section:

"The Relations of Primary and Secondary Structures in Rocks," by Charles R. Van Hise; "The Archæan and Cambrian Rocks of the Green Mountain Range in Southern Massachusetts," by Benjamin K. Emerson; "Gotham's Cave; or Fractured Rocks in Northern Vermont," by Charles H. Hitchcock; "Recent Discovery of the Occurrence of Marine Cretaceous Strata on Long Island," by Arthur Hollick; "Geological Canals between the Atlantic and Pacific Oceans" and "Recent Elevation of New England," by John W. Spencer; "Geological Notes on the Isles of Shoals," by Horace C. Hovey; "Subdivision of the Upper Silurian in Northeast Iowa," by Andrew G. Wilson; "Supplementary Notes on the Metamorphic Series of the Shasta Region of California," by James P. Smith; "View of the Ice Age as Two Epochs, the Glacial and Champlain," by Warren Upham; "Glacial Phenomena between Lake Champlain and Lake George and the Hudson," by George F. Wright; "Whirlpool of Niagara," by George W. Holley; "Distribution of Sharks in the Cretaceous," by Charles R. Eastman; "Terminology proposed for Description of Pelecypoda," by Alpheus Hyatt; "The Equatorial Counter-currents," by William M. Davis; "Interesting Features in the Surface Geology of the Genesee Region," (with lantern illustrations), by Herman L. Fairchild; "Japan," by Gardner G. Hubbard; and "Great Falls of the Mohawk at Cohoes, N. Y." (with lantern illustrations), by William H. C. Pynchon.

**F. Zoölogy.**—At the Brooklyn meeting of the association President David S. Jordan, of the Leland Stanford, Jr., University, was chosen to preside over this section, but, subsequent to the abandonment of the place of meeting in California, he resigned. To fill the vacancy, Leland O. Howard, of Washington, was nominated by the council and the selection was confirmed. No vice-presidential address was delivered.

The following-named papers were read and discussed before the section:

"The Evolution of the Insect Mouthpiece" (with lantern illustrations), by John B. Smith; "The Mouthpiece of Insects, with Special Reference to the Diptera and Hemiptera," by Charles L. Marlatt; "On the Olfactory Lobes," by Charles S. Minot; "Notes on Fleas, Mosquitoes, and the Horseflies," by Leland O. Howard; "On the Visceral Anatomy of the Lacertile" and "The Affinities of the Pythonomorph Reptiles," by Edward D. Cope; "Characters which are useful in raising Larvæ of Sphingidæ," by George Dimmock; "Temperature Variations of Cattle observed during Extended Periods of Time, with Reference to the Tuberculosis Test," by Julius Nelson; "On the Girdling of Elm Twigs by the Larvæ of *Orgyia cucostigma*, and its Results," by Joseph A. Lintner; "Notes upon the Eupaguridæ," by Charles W. Hargitt; "On a Revision of the North American Craspedosomatidæ," "Steinmiulus as an Ordinal Type," and "A New Character in the Colobognatha, with Drawings of Siphonotus," by Orator F. Cook;

"A New Wheel for Color Mixing in Tests for Color Vision" and "Some Further Results of Investigation of Arcs of Color Vision in the Human Retina," by J. H. Pillsbury; and "A Study of Panorpa and Bitacus," by Ephraim P. Felt.

**G. Botany.**—This section was presided over by Prof. John C. Arthur, of Lafayette, Ind., who delivered an address before the section, entitled "The Development of Vegetable Physiology." He said: "A half century ago vegetable physiology in the fullness of the modern meaning did not exist. Structural botany was then the dominant phase, and in elementary instruction close attention was paid to the form and arrangement of the organs of flowering plants, with the ulterior object of being able readily to determine the names of the plants of the field. The revivifying spirit in the botanical world emanated from the observations and interpretations of Charles Darwin. Of the development of botany in the curriculum, he said that until the time of Asa Gray it can not be said to have had recognized standing in the American educational system. The department of physiology has received much attention here and there for a long time, yet only very recently has it fallen into place as a systematic part of the general subject. Ecology, which is the name under which "we are to attempt the orderly arrangement of the facts, observations, and deductions composing the science," was discussed, and then caliology, which includes the various phases of juvenescence, especially the dynamics of the young cell, was considered. Elaborating the discussion of physiology, he said:

There are many ways in which plants show similar physiological processes to those of animals; and plants, being simpler in organization, their study may promote a knowledge of animal physiology. The greatest similarity between the two kingdoms lies in nutrition, respiration, and reproduction. The greatest divergence is to be found in the manifestation of irritability. Those fundamental processes upon which being and continued existence depend are much the same throughout animate Nature, but the processes by which the organism communicates with the world outside of itself, and through which it is enabled to adjust itself to environmental conditions, the processes which in their highest development are known as sensations, have attained great differentiation, running along essentially different lines of development. The prevalent view that plants occupy an intermediate position between the mineral and the animal kingdoms is not true in any important respect. Neither is it true that the faculties of animals, especially of the lower animals, are foreshadowed in plants.

Of botany in this country, he said: "This is the country of all others where its practical and educational importance is likely to be most fully recognized, and where the best-equipped and most independent laboratories can most readily be established." In conclusion, he advocated better equipped laboratories, and claimed "that the next great botanical wave that sweeps over America will be a physiological one." Subsequently the following-named papers were read and discussed before the section:

"A Leaf Rot of Cabbage," by H. L. Russell; "Root Fungus of Maize" and "Enantiomorphism in Plants," by George Macloskie; "On the Analysis of Floral Colors," by J. H. Pillsbury; "A Summary of a Revision of the Genus *Dicranum*," by Charles R. Barnes and Rodney H. True; "Experiments in pollinating



and hybridizing the Orange," by H. J. Webber; "History and Present Status of Orange Culture in Florida," by Charles P. Hart; "An *Excoascus* upon *Alnus* leaves," by Mrs. Flora W. Patterson; "*Obolaria Virginica* L.: A Morphological and Anatomical Study," by Theodore Holm; "Botany of Yakutat Bay, Alaska" and "Poisoning by Broad-leaved Laurel, *Kalmia Latifolia*," by Frederick V. Coville; "The Physiology of *Isopyrum Viteruatum* L." and "The Transmission of Stimuli Effects in *Mimosa Pudica* L," by Daniel T. MacDougal; "Personal Nomenclature in the Myxomycetes," by Orator F. Cook; "A New Californian Liverwort," by Douglas H. Campbell; "Variation after Birth," by Liberty H. Bailey; "Regeneration and Heredity," by Charles S. Minot; "The Distinction between Animals and Plants," by John C. Arthur; "Fungous Gardens in the Nests of an Ant (*Atta Tardigrada*, Buckl.) near Washington, D. C.," by Walter T. Swingle; "The Number of Spare Mother Cells in the Sporangia of Ferns," by Willis L. Jepson; "The Constancy of the Bacterial Flora of Fore Milk," by Henry L. Bolley; "The Watermelon Wilt and other Wilt Diseases due to *Fusarium*," and "The Southern Tomato Blight," by Erwin F. Smith; "Observations on the Development of *Uncinula Spiralis*," by Benjamin T. Galloway; "The Effect of Sudden Changes of Turgor and of Temperature on Growth," by Rodney H. True; "Recording Apparatus for the Study of Transpiration of Plants," by Albert F. Woods; "Pressure, Normal Work, and Surplus Energy in Growing Plants," by George M. Holferty; and "Notes on the Ninth Edition of the London Catalogue of British Plants," by Nathaniel L. Britton.

**H. Anthropology.**—Over this section Frank Hamilton Cushing, of the Bureau of Ethnology, was called to preside. His address was more specific than general, for he discussed "The Arrow, with Experiment Illustrations." One of the most ancient of the things man has made is the arrow, and the arrow was perfected in well-nigh all its parts long before the simplest bow came into existence. Mr. Cushing told how he had made arrows, and then said:

I have told this history as it occurred; first, to instance the manner in which I discovered flint flaking, by chancing ignorantly to follow precisely the course primitive man must necessarily have followed. And secondly, to convey to you the lesson that I could learn more by strenuously experiencing with savage things and arts than others or I could have learned by actually and merely seeing and questioning savages themselves about such things and arts. And thirdly, this experience has taught me, that palæolithic man, of the French caves, at least—that man who is said to have known no other art of working stone than by rudely breaking it into shape by blows of other stones—could not have existed in such primary status of art for more than a few seasons, at most.

Then, following the development of the arrow, and, describing the method of its production for various uses, he continued:

From breaking of shells, stones, and bones, and the much cutting of his fingers thereby, primal man must have learned to do all kinds of cutting, scraping, and scratching with the sharp fragments. For long he probably used these fragments unmounted, grasping them with wads of seaweed or grass, as I have grasped a stone, with a fold or two of buckskin, in making with it all the shaft polishers and other like tools. But by lodging such blades in wood, or often wedging sharp things into the end of his spear-form digging stick, he must have learned in time that the stick, so long as thus armed, dug better and cut his contestants better. In time the primitive men began to fit the shafts with straps or their fingers with slinging nooses to further the flight. From the soreness

that came of much or constant use of such first appliances the loops became rings for the fingers, more rigid and joined together; and these, in turn, palms of rawhide for the throwing hands, or of wood hollowed straightly and fitted with holes at the sides for the thumb and great finger, and with a groove underneath, extending to the rear end, at which was a notch or a hole for the forefinger when stretched along the groove and thrust up through the hole. Thus he continued until the arrow was completed and fitted for use in combination with the bow.

The following-named papers were then read and discussed before the section:

"A Study in Anthro-geography as a Branch of Sociological Investigation," by William Z. Ripley; "The Algonquian Appellatives of the Siouan Tribes of Virginia" and "The Mystery of the Name Pamunkey," by William W. Tooker; "Indian Songs and Music" and "The Sacred Pole of the Omaha Tribe," by Alice C. Fletcher; "The Year of the Pleiades of Prehistoric Starlore" and "The Influence of Prehistoric Pygmy Races on Early Calendars and Cults, with Notes on Dwarf Survivals," by R. G. Haliburton; "Account of the Discovery of a Chipped Chert Implement in Undisturbed Glacial Gravel near Steubenville, Ohio," by Frederick G. Wright; "A Study in Child Life," by Laura O. Talbot; "The Indians of Southern California," by Franz Boas; "The Cosmogonic Gods of the Iroquois," by J. W. B. Hewitt; "Word Formation in the Kootenay Language" and "Kootenay Indian Personal Names," by Alexander F. Chamberlain; "A Vigil of the Gods," by Washington Matthews; "Some Arabic Survivals in the Language and Folk Usage of the Rio Grande Valley," by John G. Bourke; "The Spider Goddess and the Demon Snare" and "The Dynasty of the Arrow," by Frank H. Cushing; "The Origin of Playing Cards," "The Origin of Money in China," and "Mustach Sticks of the Ainus," by Stewart Culin; "An Ojibwa Transformation Tale," by Harlan I. Smith; "Old Mohawk Words" and "An Iroquois Condolence," by William M. Beauchamp; "Mental Measurements in Anthropology," by J. McKeen Cattell; "Some Symbolic Carvings from the Ancient Mounds of Ohio," by Frederick W. Putnam and C. C. Willoughby; "Notes on the Bushmen of Transvaal," by George Leith; "Village Life among the Cliff Dwellers," "The Different Races described by Early Discoverers and Explorers," and "The Palæolithic Cult, its Characteristic Variations and Tokens," by Stephen D. Pect; "A Melange of Micmac Notes," by Stansbury Hager; "Grammatic Form and the Verb Concept in Iroquoian Speech," by J. W. B. Hewitt; "Anthropometrical, Psycho-neural, and Hypnotic Measurements," by Arthur MacDonald; "The Education of Blind-deaf Mutes," by John Dutton Wright.

**I. Economic Science and Statistics.**—The presiding officer of this section was Bernhard E. Fernow, of the Department of Agriculture in Washington. He discussed "The Providential Function of Government in Relation to Natural Resources" in his address. The first part was taken up with the discussion of theories of government and of the right of interference with individual control of natural resources. He expressed his doubt as to whether there is yet such a thing as economic science, and thought that the section should be called the section of social science. After showing reason for holding that the Government has the right to prevent waste of natural resources, he classified these as follows: First, resources inexhaustible; second, resources exhaustible and nonrestorable; third, resources restorable, but liable to deterioration; fourth, resources restorable, and apt to yield increased activity. Of the first class there are

hardly any. To the second class belong mines, and to the third timber, water power, and fisheries. To the fourth class belong most of the resources which are the product of human labor, industry, and ingenuity; the accumulated wealth, the accumulated educational fund, and other conditions of civilization, the people themselves capable of performing labor.

Most of his address was devoted to the fourth class, with special reference to his own specialty of forestry. He deplored the attempt to get the largest profit from labor, which is the only incentive of private enterprise, and is bound to lead to unconservative management, especially where the maintenance of favorable forest conditions from protective considerations is necessary, for here, again, the need of leaving valuable material for the time being, the need of curtailing present revenue for the sake of the future and for the sake of other people's interest, can hardly be expected to be appreciated by the private individual.

In closing, he expressed the hope "that the students of political economy associated with this section will see that this branch of their science, the economy of natural resources, so important and yet so much neglected, requires on their part a fuller and more careful consideration."

Subsequently the following-named papers were read and discussed before the section:

"Manual Training in Horticulture for Our Country Schools," by William R. Lazenby; "Equality of Opportunity: How can we secure it?" by J. L. Cowles; "On Suicide," by William L. O'Neill; "Growth of Great Cities," by Elmer L. Corthell; "Taxation in the United States," by Edward Atkinson; "A System of Co-metallism," by J. W. Sylvester; "An International Coinage," by Henry Farquhar; "The Law of Chance, illustrated in Railway Accidents," by Thomas C. Mendenhall; and "A Cottage Settlement in Spain," by Mary J. Eastman.

#### **Popular Features of the Proceedings.**—

These began with an evening reception from 8 to 11 p. m. on Aug. 28, by the president of the City Library Association to members of the association at the Art Museum for the purpose of inspecting the George Walter Vincent Smith Art Collection. Subsequent to the delivery of the presidential address, on the evening of Aug. 29, the usual reception by the Ladies' Reception Committee was given in City Hall. On Aug. 30, the Art Museum was open to members of the association in the afternoon. In the evening a public lecture on the "Geographical Development of the Connecticut Valley" (with lantern illustrations), complimentary to the citizens of Springfield, was given by Prof. William M. Davis, of Harvard University. As usual, Saturday (Aug. 31) was devoted to an excursion and a trip to Amherst, Northampton, and Mount Holyoke College was arranged. Such members as desired to visit Mount Holyoke College, took carriages at Holyoke. The main excursion train went to Amherst, where Amherst College was visited, also the new science laboratory and the collections of mineralogy, geology, and zoölogy, or the Massachusetts Agricultural College with its insectary, where the various stages and development of insects and their manner of living were studied. From Amherst a visit was made to Northampton, to inspect Smith College. Besides a union meet-

ing on Sunday evening, Sept. 1, at which addresses were given by Prof. William N. Rice, of Wesleyan University, Middletown, Conn., Prof. George Macloskie, of Princeton, N. J., President James Woodrow, of South Carolina College, and Miss Alice C. Fletcher, of Cambridge, Mass., sermons appropriate to the occasion were delivered at the morning service of several of the churches. Among these was one on "Science and Life," by Rev. Philip S. Moxom; one on "The Scientific Aspects of the Christian Evidences," by Prof. G. Frederick Wright; one on "The Services of Sciences," by Rev. Bradley Gilman; and one on "The Alternative—Christianity or Agnosticism," by the Rev. William N. Rice.

On the evening of Sept. 3 a second public lecture, complimentary to the citizens of Springfield, on "The Wild Flowers of the Connecticut Valley" (with colored lantern illustrations), was given by Mr. Cornelius Van Brunt, of New York. Also a public lecture on the "Illustrative Method of teaching Geography and Zoölogy at the American Museum of Natural History in New York City" (with lantern illustrations) was given on Sept. 4 by Prof. Albert S. Bickmore, of New York city.

**Affiliated Organizations.**—Various other scientific societies, taking advantage of the gathering of so many of their members at the meeting of the American Association, have in recent years adopted the practice of holding meetings at the same place and contemporaneous with the American Association, but at such hours as not to interfere with the regular sessions of the larger body. Of these, the Society for Promotion of Agricultural Science met on Aug. 26 and 27. Its president was William Saunders, of Ottawa, Canada, and its secretary was William Frear, of the State College, Center County, Pa. The Botanical Society of America held meetings on Aug. 27 and 28 under the presidency of Charles E. Bessey, of Lincoln, Neb., and with Charles R. Barnes, of Madison, Wis., as secretary. Likewise, on Aug. 27 and 28 the American Chemical Society met, with Edgar F. Smith, of the University of Pennsylvania, Philadelphia, Pa., as president, and Albert C. Hale, of Brooklyn, N. Y., as secretary. On the same dates the Association of Economic Entomologists convened, with John B. Smith, of New Brunswick, N. J., as president, and Charles L. Marlatt, of Washington, D. C., as secretary. The Geological Society of America held its seventh summer meeting on Aug. 27 and 28, with Nathaniel S. Shaler, of Cambridge, Mass., as president, and Herman L. Fairchild, of Rochester, N. Y., as secretary. The American Mathematical Society held meetings on Aug. 27 and 28. The president was Dr. George W. Hill, of West Nyack, N. J., and its secretary was Thomas S. Fiske, of New York city. The Society for Promoting Engineering Education met on Sept. 2, 3, and 4, with George F. Swain, of Boston, Mass., as president, and John B. Johnson, of St. Louis, Mo., as secretary. The American Forestry Association met on Sept. 3. Its president was the Hon. J. Sterling Morton, and its secretary was Frank H. Newell, both of Washington, D. C. As usual during the meeting, regular sessions of the Botanical Club, with David F. Day, of Buffalo, N. Y., as president and Henry



L. Bolley, of Fargo, N. D., as secretary, and the Entomological Club, with the Rev. C. J. S. Bethune, of Port Hope, Ontario, as president, and Charles L. Marlatt, of Washington, D. C., as secretary, were held.

**Final Sessions.**—The final session of the association was held on the evening of Sept. 4, when the action of the council at its meeting earlier in the day was submitted for ratification. Among the measures proposed and accepted was the recommendation that the association meet on Monday in lieu of Wednesday. This caused much discussion, but was finally confirmed. The amendments to the constitution that prevailed were the allowing of incorporated societies to become members; the changing of the name of Section I from "economic science and statistics" to "social and economic science," the alternative title "sociology" being voted down; the requiring that the treasurer give bonds recommended by a fidelity company, at the expense of the association. It was decided not to form a new section for geography, and the offered amendment making it compulsory for local committees to include all local members and fellows of the association was defeated. A grant of \$100 was given to Prof. William A. Rogers, of Colby University, for continuing his experiments in light measurement. Secretary Putnam reported that 367 members were in attendance. There were 185 new members elected and 58 advanced to the grade of fellows. Four had died during the year. There had been 3 public lectures and 207 papers presented during the meeting.

**The Next Meeting.**—The association decided to meet in Buffalo in 1896, and the time appointed for gathering is the fourth Monday in August. The following officers were chosen: President, Edward D. Cope, Philadelphia, Pa. Vice-presidents of sections: A, William E. Story, Worcester, Mass.; B, Carl Leo Mees, Terre Haute, Ind.; C, William A. Noyes, Terre Haute, Ind.; D, Frank O. Marvin, Lawrence, Kan.; E, Benjamin K. Emerson, Amherst, Mass.; F, Theodore N. Gill, Washington, D. C.; G, Nathaniel L. Britton, New York city; H, Alice C. Fletcher, Washington, D. C.; and I, William R. Lazenby, of Columbus, Ohio. Permanent Secretary, Frederick W. Putnam, Cambridge, Mass. General Secretary, Charles R. Barnes, Madison, Wis. Secretary of the Council, Asaph Hall, Jr., Ann Arbor, Mich. Secretaries of the sections: A, Edwin B. Frost, Hanover, N. H.; B, Frank P. Whitman, Cleveland, Ohio; C, Frank P. Venable, Chapel Hill, N. C.; D, John Galbraith, Toronto, Canada; E, A. C. Gill, Ithaca, N. Y.; F, D. S. Kellicott, Columbus, Ohio; G, George F. Atkinson, Ithaca, N. Y.; H, John G. Bourke, U. S. A.; and I, R. T. Colburn, Elizabeth, N. J. Treasurer, Robert S. Woodward, New York.

**British.**—The sixty-fifth annual meeting of the British Association for the Advancement of Science was held in Ipswich, Sept. 12-18. The officers of the association were: President, Sir Douglas Galton. Section Presidents: A, Mathematics and Physics, W. H. Hicks; B, Chemistry, Raphael Meldola; C, Geology, William Whitaker; D, Zoölogy, William Herdman; E, Geography, H. J. Mackinder; F, Economic

Science and Statistics, L. L. Price; G, Mechanical Science, J. F. Vernon Harcourt; H, Anthropology, W. M. Flinders Petrie; K, Botany, W. T. Thistleton Dyer. General Secretaries, Sir Douglas Galton and Vernon Harcourt. General Treasurer, Arthur W. Richter.



SIR DOUGLAS GALTON.

**General Meeting.**—The association began its proceedings with a meeting of the general committee on Sept. 11, when the report of the council was presented by Prof. J. F. Vernon Harcourt, and other business attended to. The meeting was presided over by Sir Frederick Bramwell, a past president. The council at this meeting nominated Prof. E. A. Schäfer for the place of general secretary, made vacant by the advancement of Sir Douglas Galton to the presidency. Twenty-five foreign scientists were elected foreign corresponding members, among whom were Dr. John S. Billings, U. S. A., Philadelphia, Pa.; Prof. D. H. Campbell, Leland Stanford University, Palo Alto, Cal.; Prof. Alfred M. Mayer, Stevens Institute, Hoboken, N. J.; Prof. Henry F. Osborn, Columbia College, New York city; and Gen. Francis A. Walker, Boston, Mass. Various resolutions referred to the council were received, among them being one that was acted on as follows: "The council resolved to express their sympathy with, and approval of the effort which is now being made by the Royal Geographical Society to organize an expedition for the exploration of the Antarctic Sea, but did not consider that any further action could usefully be taken by them at present." Various new members of the committees were chosen, and the re-election of the ordinary members of the council recommended. The treasurer reported that the receipts for 1894-'95 were £4,214, and the payments about £977. The investments consisted of £7,537 consols and £3,600 India 3 per cents. On the motion of Dr. Edward Frankland, seconded by Dr. John H. Gladstone, a vote of thanks was adopted for the retiring president, Sir Frederick Bramwell.

In the evening the association met for the purpose of listening to the inaugural address. Owing to the absence of the Marquis of Salisbury, the chair was occupied by Lord Kelvin, one of the vice-presidents, and who introduced the new president by saying: "It was a great disappointment not to have Lord Salisbury with them that evening, but he was sure that every one would rejoice that he was taking such a holiday as it was possible for him to take at this time of the year, and would agree that it was for the public good that he should do so. He had now to yield the chair to Lord Salisbury's successor, Sir Douglas Galton, who for a quarter of a century had been the mainstay of the British Association."

**Inaugural Address of the President.**—Sir Douglas Galton, in opening his address, called attention to the great loss that science had sustained in the death of Prof. Huxley. He said: "Huxley was pre-eminently qualified to assist in sweeping away the obstruction of dogmatic authority, which in the early days of the association fettered progress in certain branches of science. For, while he was an eminent leader in biological research, his intellectual power, his original and intrepid mind, his vigorous and masculine English, made him a writer who explained the deepest subject with transparent clearness. And as a speaker his lucid and forcible style was adorned with simple and effective illustration in the lecture room; and his energy and wealth of argument in a more public arena largely helped to win the battle of evolution and to secure for us the right to discuss questions of religion and science without fear and without favor." He then said: "About forty-six years ago I began to attend the meetings of the British Association, and I was elected one of your general secretaries about twenty-five years ago. It is not unfitting, therefore, that I should recall to your minds the conditions under which science was pursued at the formation of the association, as well as the very remarkable position which the association has occupied in relation to science. In the absence of railways communication between different parts of the country was slow and difficult. Science was localized, and to overcome this condition the British Association was formed in September, 1831, holding its first meeting in York, with 353 members. The objects of the founders were: 'To give a stronger impulse and a more systematic direction to scientific inquiry; to promote the intercourse of those who cultivated science in different parts of the British Empire with one another and with foreign philosophers; to obtain a more general attention to the objects of science, and a removal of any disadvantage of a public kind which impedes its progress.' At the third meeting, held in Cambridge in 1833, it was already strong enough to induce the Government to grant a sum of £500 for the reduction of the astronomical observations of Baily." Then, taking the condition of certain sciences at the foundation of the British Association, Sir Douglas called attention to the fact that at its first meeting the association initiated a series of reports upon the condition at that time of the various sciences. A glance at some of these reports shows the enormous strides made since 1831 in the investiga-

tion of facts to elucidate the laws of Nature. And many of their reports had brought about very important results. The first cited was on "Tides." No information had been collected prior to 1832 on the tides of the coasts of Scotland and Ireland, but in 1834 the association induced the corporation of Liverpool to establish two tide gauges, and the Government to undertake tidal observations at 500 stations on the coast of Britain. He then made brief allusions to the condition of some of the branches of science in 1831, compared with their present state, drawing his information chiefly from the above-mentioned reports on different sciences made to the association. Under "Geological and Geographical Science," he first contrasted the advances made in geology, and then considered those made in geography. "Chemical, Astronomical, and Physical Science" was his next heading. Of chemistry he said: "The most stupendous advance which we owe to the spectroscopic lies in the celestial direction." Then astronomy was taken up, and he mentioned our own Keeler's verification of "Clerk Maxwell's theory that the rings of Saturn consist of a marvelous company of separate moons." Physics and meteorology were then discussed. The "Biological Sciences" in turn passed under his criticism, including botany, animal physiology, anthropology, and bacteriology. Concerning the last named, he referred to it as a meeting place where the chemist, the physicist, and the statistician unite with the sanitary engineer in the application of the science of preventive medicine." Under "Engineering" he discussed sewerage purification, smoke abatement, mechanical engineering, and metallurgy. The "Influence of Intercommunication afforded by the British Association on Science Progress" he indicated by the opportunities afforded to the young student for making the acquaintance of the leaders in science at the meetings and thereby obtaining the value of this directing influence. The association also gives material aid to many of the investigators whom it brings together by grants of money. The speaker then described the various agencies by means of which science in Germany was fostered by the state and by municipalities, and these he contrasted with the means afforded by way of assistance to scientific research in Great Britain. He said that the British Association had contributed £60,000 to aid research since its foundation. In conclusion, he called attention to the fact that those who nearly half a century ago directed the movement of national education were trained in early life in the universities, in which the value of scientific methods was not at that time fully recognized. Hence the schools neglected for a long time to encourage the spirit of investigation which develops originality. This defect is diminishing rapidly. Another cause is the want of appreciation of science by the Government. It aids it with money; but science is not fashionable, and its students have not received the same measure of recognition which the state accords to services rendered by its own officials, by politicians, and by the army and navy. He closed by expressing full confidence "that the future records of the British Association will chronicle a still greater progress than that already achieved, and that the



British nation will maintain its leading position among the nations of the world, if it will energetically continue its voluntary efforts to promote research, supplemented by that additional help from the Government which ought never to be withheld when a clear case of scientific utility has been established."

**Proceedings of the Sections.** A. *Mathematics and Physics*.—This section was presided over by Prof. W. H. Hicks, who is principal of Firth College, in Sheffield. In the beginning of his address he said: "The ultimate aim of pure science is to be able to explain the most complicated phenomena of Nature as flowing by the fewest possible laws from the simplest fundamental data." Then, coming to the immediate topic of his address, he considered certain special theories, or rather two related theories—on the constitution of matter and of ether. They are known as the vortex-atom theory of matter and the vortex-sponge theory of the ether. The opinions of different authorities were then most carefully analyzed, with a view of eliminating their common objections to their acceptance, consequently the strong points in their favor were brought out, and with equal force their inconsistencies were pointed out. In conclusion he said:

The very rapid survey I have attempted to make is no doubt a medley of suppositions and inferences combined with some sound deductions. This is the necessary consequence of a prospecting survey in a region whose surface has been merely scratched by pioneers. My object has been to show that this theory of an ether, based on a primitive perfect fluid, is one which shows very promising signs of being able to explain the various physical phenomena of our national universe. Probably, nay certainly, the explanations suggested are not all the true ones. Some will have to be given up, others modified with further knowledge. We can not proceed to particularize in our second hypotheses until we know more about the properties of such media as we have been considering. Every special problem solved in vortex motion puts us in a position to form clearer ideas of what can and what can not happen. The whole question of vortex aggregates and their interactions is practically untouched, and a rich field is open for mathematical investigation in this portion of the subject. In all cases whether a fluid is an actual fact or not, the results obtained will be of special interest as types of fluid motion. It is at present a subject in which the mathematicians must lead the attack. I shall have attained my object in choosing this subject for my address, if by it I can induce some of our younger mathematicians to take it up and work out its details.

Among the more important papers presented before this section were:

"The Arrangements and Government of the German Reichsanstalt or National Physical Laboratory," by Sir Douglas Galton; "The Teaching of Geometrical Drawing in Schools," by O. Henrici; "On the Electrification and Dielectrification of Air and Other Gases," by Lord Kelvin; "The Equation connecting Difference of Potential Current and Length of the Electric Arc," by Mrs. Ayrton; "Change of Molecular Refraction in Salts and Acids dissolved in Water," by John H. Gladstone; "On the Choice of Magnetic Units," by S. P. Thompson; "Alternate Current Wave Traeer," by J. M. Barr; "The Apparatus for Standardizing High-Temperature Thermometers," by E. H. Griffiths; "On the Back Electro-motive Force and True Resistance of the Arc," by Prof. Ayrton and T. Mather; "On the Velocity of Light in a Rarefied Gas through which a Current is Passing," by B. E. Edser and S. G. Starting; and

"On the Hysteresis of Iron in an Alternating Field," by F. G. Baily.

Also the following reports were presented:

"Report on Cosmic Dust," by John Murray; "Report of the Committee on Underground Temperature," by J. D. Everett; and a "Report of the Committee on Electric Standards," by Oliver Lodge.

On the 13th a joint meeting of the section in mathematics and chemistry was held for the purpose of discussing the properties of the new gases argon and helium, as well as for the consideration of some points in spectroscopy. Lord Rayleigh gave an account of the experiments made to determine the index of refraction and the viscosity of argon and helium.

J. H. Gladstone read "Specific Refraction and the Periodic Law"; A. Schuster "The Spectroscopic Separation of Gases"; Prof. Runge "The Spectroscopic Separation of Two Constituents of Helium"; and G. J. Stoney "The Interpretation of Spectra."

On the 14th Section A divided into two departments—one on mathematics, over which Prof. Hicks presided, and before which the following papers were read: "Bicyclic Vortex Aggregates" and "Hill's Spherical Vortex," by Prof. W. N. Hicks; "An Ingenious Mechanical Top," by G. T. Walker. The other was on meteorology, over which Prof. Ayrton presided, and before which the following papers were read: "Indian Thunderstorms," by Prof. Michie Smith; "Some Observations with Lord Kelvin's Portable Electrometer," by Arthur Schuster; and also the following reports: "Report of the Committee on Earth Tremors," by G. J. Symons; "Report of the Committee on the Application of Photography to Meteorology," by G. J. Symons; and "Report of the Committee on Earthquakes in Japan," by Prof. John Milne. On the 16th this section met for consideration of questions connected with the theories of sound and heat. A discussion "On the Objective Character of Combination Tones" was opened by Arthur Rücker, and participated in by S. P. Thompson, Lord Rayleigh, Lord Kelvin, and others. "A New Practical Heat Standard" was described by E. H. Griffiths, and discussed by Prof. Schuster, Lord Kelvin, and others; after which papers on "The Thermal Conductivity of Mixtures of Liquids," by C. H. Lees, and "A Method of comparing the Heats of Evaporation of Different Liquids at their Boiling Points," by William Ramsay and Miss Dorothy Marshall were read.

B. *Chemical Science*.—The presiding officer of this section was Prof. Raphael Meldola, who fills the chair of Chemistry in Finsbury Technical College, City, and Guilds of London Institute. Prof. Meldola, at the beginning of his address, contrasted the condition of chemistry at the time when the association met last (1851) in Ipswich with our present knowledge of that science. "The so-called new chemistry," he said, "was being evolved about the period when the British association last assembled in Ipswich, but it was not till some years later that the modern views were accepted. It was at that meeting that the nomenclature of organic compounds formed the subject of a report by Dr. Danbury. It was about 1851 that the era of structural or constitutional chemistry based on the

doctrine of the solvency of the atoms began, and thereafter the course of development concentrated itself in two channels. In one we find the result of the labors of those who regarded chemistry from the physical side, and in the other the series of discoveries of those who made a specialty of the valency doctrine and its extension to the structure of chemical molecules." Concerning the present state of structural chemistry, he said:

Pending the rationalization of the doctrine of valency its promulgation must continue in its present form. Its services in the construction of rational formulæ have been incalculable. It is the ladder we have climbed to the present brilliant achievements in chemical synthesis, and we are not in a position to perform the ungracious task of kicking it away, and the present position of structural chemistry may be summed up in the statement that we have gained an enormous insight into the anatomy of molecules, while our knowledge of their physiology is as yet in a rudimentary condition. Of the progress of synthetic chemistry he spoke encouragingly. According to a census made by him 180 syntheses of natural compounds had been made since 1828. It is by the combination of our knowledge of structural chemistry applied to chemical synthesis that the great mysteries of vital chemistry will be solved. The decisive settlement of whether a stereo-chemical relationship between the living and dead compounds entering into combination is not an absolutely essential condition of all assimilation will be a step onward toward the solution of the mystery that still surrounds the chemistry of the living organism.

In conclusion, he discussed the recent discoveries of gaseous elements, referring to the discovery of argon and the more recent announcement of helium. With respect to the position of argon and helium in the periodic system of chemical elements, he agreed with Prof. Ramsay that it was still too premature to speculate and could not be decided until it was certain that these gases were homogeneous.

The following-named papers were among those read before this section:

"A New View of the Genesis of Dalton's Atomic Theory," by Sir Henry E. Roscoe and Dr. A. Harden; "The Action of Nitric Oxide on Certain Salts," by H. A. Auden and G. J. Fowler; "The Respirability of Air in which a Candle Flame has burned until it is extinguished," by Arthur Clowes; "The Action of Light upon the Soluble Metallic Iodides in Presence of Cellulose," by D. J. P. Berridge.

On the 16th the section met with the section on botany to discuss the relation of agriculture to science, and Prof. Meldola presided over the joint meeting, at which R. Warrington read a paper on "How shall Agriculture best obtain the Help of Science?" A second paper was contributed by T. Hendrick and one by M. J. R. Dunstan, after which much discussion generally participated in took place. On Sept. 17, which was the day set apart for papers on photography and physical and organic chemistry, the following were presented:

"On Orthochromatic Photography," by H. W. Vogel; "The Sensitizing Action of Dyes in Gelatinobromide Plates," by C. H. Bothamley; "The Formation and Properties of a New Organic Acid," by H. J. H. Fenton; and "The Chemical History of the Barley Plant," by C. F. Ross and C. Smith.

Also the following reports were presented:

"Report of the Committee on the Teaching of Science in Elementary Schools," by Dr. John H. Gladstone; "Report of the Committee on Quantitative Analysis by Means of Electrolysis," by Dr. C. Kohn; "Reports of the Committee appointed to prepare a New Series of Wave-length Tables of the Spectra of the Elements," by Sir Henry E. Roscoe; "Report of the Committee on the Preparation of Pure Haloids"; and the "Report of the Committee on the Bibliography of Spectroscopy."

*C. Geology.*—This section was presided over by William Whitaker, who is connected with the Geological Survey of Great Britain. He chose as the subject of his address "Underground in Suffolk and its Borders."

The object of this address is to carry you below the surface, and to point out how much our knowledge of the geology of the country in which we meet has been advanced by engineers and others in their search for water. This information has accumulated since 1851, for of the 476 Suffolk wells, of which an account with some geologic information has been published, only 68 were noticed before that year. Of the Drift it may be said that it is only from the wells that we can tell its thickness over most of this plateau. Sometimes the sections seem to point to the existence of channels filled with Drift, such as are also found in Essex and in Norfolk. Less information is available of the Crag, as it is not so widespread; still the evidences show it to be far thicker than was supposed. Below the Crag there is a great gap in the geologic series, and we reach some of the lower Tertiary formations. The important evidence obtained is showing the great underground extent of the older Tertiary beds. The chalk is reached by many wells, yet, owing to its great thickness, but little information is available about it. No case is on record of the chalk being pierced from top to bottom in Suffolk. From the base of the chalk we pass out of the region of facts into the realm of speculation. To the question, "What rocks underlie the Cretaceous beds at great depths?" consideration is asked. From the fact that there is no area of old rocks at the surface in our island south of the Forth in which coal measures are not a constituent formation, and on the principle of reasoning from the known to the unknown, I can not see why we should expect anything but a like occurrence of coal measures in detached basins in our vast underground tract of old rocks. The question of finding and of working coal in various parts of southeastern England is not merely of local interest; it is of national importance. The time must come when the coal fields that we have worked for years will be more or less exhausted, and we ought certainly to look out ahead for others, so as to be ready for the lessening yield of those that have served us so well. It is on our coal that our national prosperity depends, and, as far as we can see, will depend. Let us not neglect any of the bounteous gifts of Nature, but let us show rather that we are ready to search for the treasures that may be hidden under our feet, and the finding of which will result in the common welfare of our native land.

Appended to the address was a list of the chief papers on the old rocks underground in southeastern England since 1889, when the subject was treated of in the memoir on the "Geology of London," etc.

Among the papers read before the section were the following: "On Recent Coast Erosion at Southwold and Covehithe," by John Spiller; "On the Southern Character of the Molluscan Fauna of the Coralline Crag, tested by an Analysis of its Characteristic and Abundant Shells," by F. W. Harmer. On Sept. 15 this



section devoted itself to the consideration of vertebrate palæontology, and the first paper presented was one by Prof. O. C. Marsh, of Yale University, which was illustrated by a large number of drawings, after the discussion of which Montague Browne presented "A Preliminary Notice and Measurements of an Exposure of Rhætic Beds on the Confines of Leicestershire and Nottinghamshire." On the 16th the proceedings of the section related to Tertiary formations and earthquake phenomena, and possessed more than ordinary interest on account of papers read by the French geologist F. Dollfus and M. E. Van den Broeck, and an address on "Earth Movements observed in Japan," by Prof. John Milne. Papers were also presented

"On Auriferous Conglomerates of the Witwatersrand Transvaal," by F. H. Hatch; "On the Dip of the Underground Palæozoic Rocks at Ware and at Turnford," by Joseph Francis; "The Importance of extending the Work of the Geological Survey of Great Britain to the Deep-sea Bed Rocks by Means of boring," by F. W. Harner; and an oral address was given by Prof. Edward W. Claypole, of Akron, Ohio, on "The Cladodonts of the Upper Devonian of Ohio."

**D. Zoölogy.**—Over this section Prof. William A. Herdman, who fills the chair of Natural History in University College, Liverpool, presided. The speaker called attention to the fact that this year, for the first time in the history of the British Association, Section D meets without including in the range of its subject-matter the science of botany. Of zoölogy he said:

We include also in our subject-matter, besides the adult structure and the embryonic development of animals, their distribution both in space and time, the history and structure of extinct forms, speciology and classification, the study of the habits of animals, and all that mass of lore and philosophy which has gathered around inquiries into instinct, breeding, and heredity. He then briefly reviewed the progress of zoölogy since the meeting of the association in Ipswich in 1851, and called special attention to the recent completion of the reports of the scientific results of the "Challenger" expedition, a magnificent series of 50 quarto volumes, which have left an indelible mark upon science, and will remain through ages, exercising a powerful influence. It is the final volumes of this series that have given definiteness of scope and a tremendous impulse to that branch of science—mainly zoölogical—which is coming to be called oceanography. It is in this laminarian zone probably that, under stress of competition between individuals and allied species, evolution of new forms by means of natural selection has been most active.

Bionomics, which deals with the habits and variations of animals, their modifications and the relations of these modifications to the surrounding conditions of existence, was then taken up. Finally, he discussed aquiculture, or industrial ichthyology, the scientific treatment of fishery investigations, what chemistry is to the aniline, the alkali, and some other manufactures, marine zoölogy is to our fishing industries. In conclusion he said:

But if the zoölogist has great opportunities for usefulness, he ought always to bear in mind that he has also grave responsibilities in connection with fisheries investigations. Much depends upon the results of his work. Private enterprise, public opinion, local regulations, and even imperial legislation, may all be affected by his decision. He ought not lightly to come to conclusions upon weighty matters. I am con-

vinced that of all the varied lines of research in modern zoölogy none contain problems more interesting and intricate than those of bionomics, oceanography, and the fisheries; and of these three series, the problems connected with our fisheries are certainly not the least interesting, not the least intricate, and not the least important in their bearing upon the welfare of mankind.

Among the papers read before this section were the following:

"The Royal Dublin Society's Fishery Survey of the West Coast of Ireland" and "The Fishery School at Ringsend," by A. C. Haddon; "Oyster-cultural Methods, Experiments, and Improvements," by Dr. Bashford Dean of the United States Fish Commission; "Marine Zoölogy, Botany, and Geology of the Irish Sea," by Isaac C. Thompson; "Stereornithes, a Group of Extinct Birds from South America," by C. W. Andrews; "The Presence of Skeletal Elements between the Mandibular and Hyoid Arches of Hexanchus and Lamargus" and "The Presence of a Sternum in Hexanchus Griseus," by Philip White.

On the 15th a sitting of this section was held at sea on board a steamer that had been chartered for a dredging excursion off Harwich. On the 16th an address on "Our Present Knowledge of the Causes and Conditions of Insect Transformation," by L. C. Miall, was presented, and also the following papers:

"On the Conditions affecting Bacteria Life in River Water," by Edward Frankland; "The Marine Fauna of Houtman's Abrolhos Islands, West Australia," read by W. Saville-Kent; "Hereditary Polydactylism" and "Reproduction of the Common Crab," by Gregg Wilson; "Some Observations in Instinct in Young Birds," by Lloyd Morgan; "Notes on the Early Development of the Ganoid Fishes," by Dr. Bashford Dean; "Medusæ captured by the United States Steamer 'Albatross,'" by Otto Maas; "Spermatogenesis in Birds," by J. E. S. Moore; and "Mammalian Hyoid," by Prof. Howes. Also several reports were presented, including one "Upon Oysters and Typhoid" and one on "The Organization of Zoölogical Bibliography"; the last was presented by Dr. H. H. Field, of the United States.

**E. Geography.**—The presiding officer of this section was H. J. Mackinder, of Christ Church, Oxford, and his address treated chiefly of comparative and philosophical geography in relation to secondary and university education.

The eighteenth century was a transition age of importance to geography because of new problems indicated by the terms lithosphere, hydrosphere, and atmosphere. The first business of the geographer is to define the form or relief of the surface of the solid sphere and the movements or circulation within the two fluid spheres. The land relief conditions the circulation, and this in turn gradually changes the land relief. The circulation differentiates climates, and these together with the relief constitute the environments of plants, animals, and men.

The speaker sketched the lives and work of Humboldt, Ritter, and Peschel, and pointed out that the most modern research tends to show that Chinese civilization was of Western origin.

Since the war between France and Germany in 1870 chairs of geographical science have been multiplied throughout Europe, especially in Germany. The development in original work has been in different directions, but in geomorphology the advance has been most rapid. There are three arts—observation, cartography, and teaching. The observer obtains materials for maps, which are constructed

by the cartographers and interpreted by the teacher. The anthropogeographer is the most typical and complete of all geographers. His special department requires a knowledge of all the other departments. He must study geomorphology without becoming a geologist, geophysics without becoming a biologist. The value and possibilities of geography are not generally appreciated in England. Geographers must associate with themselves experts in education if they are to avoid certain rocks which have knocked many a hole into the geographical projects of the past, and if public bodies and private individuals are to be moved to financial generosity. The beginning might be on a relatively small scale, but must not be too small for completeness. Theory, both on the scientific and historic sides, must be represented in the last of the three geographical arts. As regards observation, nothing better could be asked than association with the admirable classes already existing. Cartography would be needed, not only to supply the map trade in Great Britain with an occasional map such as is made by Petermann, but especially that all serious students might learn the way of the geographical workshop.

Among the papers read before this popular section were:

"A Journey in Tarhuna and Gharian in Tripoli," by H. S. Cowper; "About Rockall," by Miller Christy; "Western Siberia and the Siberian Railway," by Dr. A. Markoff; "A Voyage to the Antarctic Sea," by O. E. Borchgrevink; "Some Recent Physical Work in the North Atlantic, the North Sea, and the Baltic," by H. N. Dickson; "Oceanic Circulation," by John Murray; "Cosmosphere, an Instrument combining the Terrestrial and Celestial Globes for the Purpose of demonstrating Astronomical Geographical Phenomena and Navigation Problems," by W. B. Blaikie; "An Expedition to Ruwenzori, the Highest Peaks of a Mountain Range which are evidently the Blue Mountains of Sir S. Baker, and the Mountains of Usongora," by G. F. Scott-Elliot; "Report on the Climate of Africa," by E. G. Ravenstein; "Three Years' Traveling and War in the Congo Free State," by S. L. Hinde; "The Progress of the Jackson-Harmsworth Polar Expedition," by A. Montefiore; "Life and its Conditions in Arctic Lands," by A. Trevor Battye; "On Formosa," by H. N. Dickson; "On the Russian Possessions in Central Asia" and "On the Towns of Northern Mongolia," by A. Markoff; "On the Topography of Korea," by J. L. Myres; and a "Report of the Committee on the Exploration of Southern Arabia," by J. Theodoro Burt.

*F. Economic Science and Statistics.*—This section was presided over by Mr. L. L. Price, of Oriel College, Oxford. He said in reference to the particular questions of the day:

It is well to determine the general character of the guidance offered by economics in matters of practice. In this connection economists must disclaim a pretension to strict neutrality. Much, no doubt, may be urged in support of the claims and considerable advantages might follow from its successful establishment. The cool examination of heated questions in the clear light of science might seem the appropriate occupation of the academic professor. Economists have been reproached for hardness of heart and dullness of imagination, and the popular account is prone to regard them as dry and unfeeling; but the description is a travesty of the facts, and their errors have probably been due as often to excess as to lack of enthusiasm. The besetting sin of the academic temper is indecision, and few errors are more mischievous in practical affairs. An obstinate regard for neutrality may easily beget indecision, and from that moment the economist becomes ineffectual for practice. The modern economist is inclined to state his

opinion with less assurance, and for that very reason has lost some of his influence on practical affairs. For the practical man has a sneaking affection, and even respect, for dogmatic assertion. . . . It was the interest of the employer that the wages earned by the men should be adequate to maintain, and, if possible, to increase their efficiency; and it was the interest of the employed that the profits of the *entrepreneur* should encourage enterprise and induce a sufficient supply of capital. For production—and that was a point which economics alone could duly emphasize—was the ultimate source of wealth distributed. The larger the amount procured the larger was likely to be the share of either party in distribution, and in any event it was certain that a decreased production must issue in effects on distribution, the burden of which would fall, though in varying measure, on either party. The influence thus exerted on distribution by production was one which workmen seemed especially likely to forget, and many of the common arguments in favor of "making work" or "providing employment for the unemployed" proceeded from ignorance or neglect of consideration. One of the most important advances of recent economics consisted in the emphasis given to the influence of distribution in production, and they saw more clearly than their predecessors how the poverty of the poor, by begetting insufficiency, might cause their poverty, and high wages might imply not a high but a low cost of production.

The following were among the principal papers presented before the section:

"A Comparison of the Rate of Increase of Wages in the United States and Great Britain, 1860-1891," by A. L. Bowley; "Bimetallism with a Climbing Ratio," by H. Higgs; "The Currency Question," by W. A. Shaw; "The Gold Standard," by George Peel; "The Menace to English Industry from the Competition of Silver-using Countries," by R. S. Gundry; "The System that prevails in Scotland for the Preservation of the National Parochial Registers," by H. Paton; "On Agriculture in Suffolk from the Landlord's Point of View," by E. G. Pretyman; "The Probability of a Cessation of the Growth of Population in England and Wales before 1961," by Edwin Cannan; "The Correlation of the Rate of Total Pauperism with the Proportion of Outdoor Relief given," by G. U. Yule; "The State and Workers on the Land," by J. Frome Wilkinson; and "The National Value of Organized Labor and Co-operation among Women," by Mrs. Bedford Fenwick.

*G. Mechanical Science.*—L. F. Vernon Harcourt, of the Institute of Civil Engineers, was the presiding officer of this section, and he delivered an inaugural address on "The Relation of Engineering to Science." At the outset he expressed the belief that it would be best to limit his topic to consideration of the relation that engineering in general, and maritime and hydraulic engineering in particular, bear to pure science, and the means by which progress in engineering science might be best promoted, and its scope and utility increased. After discussing several well-known definitions of engineering he referred to the equipments of an engineer, and said:

Among the branches of science necessary for the engineer, two may be regarded as of the highest importance—namely, mathematics and physics. Other sciences of comparatively minor importance to engineers are chemistry, geology, and meteorology. Pure mathematics in its higher branches appears to have a less direct connection with engineering, but applied mathematics can not be safely neglected by the engineer. Under physics he spoke of the many problems where a knowledge of science was neces-



sary, notably in matters pertaining to compressed air, to illumination, to acoustics, and electrical engineering. Many instances, such as gas making, manufacture of explosives, and even utilization of sewerage, were mentioned as requiring a knowledge of chemistry from the engineer. The whole subject of mining demands an acquaintance of geology on the part of the engineer. Under meteorology he showed the value of a knowledge of the force exerted by the winds on certain structures, also of matters pertaining to rainfall and the like. He then pointed out the many benefits conferred by engineers on pure science, and also referred to the fact that every branch of engineering science is more or less capable of being advanced by experimental investigations. The neglect of scientific considerations was often the cause of failures of works. Thus the Tay bridge disaster, in 1879, was due to underestimating the amount and effect of the wind pressure in an exposed situation. Much of the final portion of his address was devoted to a consideration of the training of engineers. In engineering, as in pure science, it is impossible to stand still; and engineers require to be ever learning, ever seeking to appreciate more fully the laws of Nature and the revelations of science, ever endeavoring to perfect their methods by the light of fresh discoveries, and ever striving to make past experience and a wider knowledge stepping stones to greater achievement. Engineers have a noble vocation, and should aim at attaining a lofty ideal; and should regard their profession not so much as an opportunity for gaining a pecuniary reward as a means of advancing knowledge, health, and prosperity.

Among the papers presented before this section were the following:

"Light Railways as an Assistance to Agriculture," by Gen. C. E. Webber; "A Description of the Machinery employed in East Anglian Coal Exploration," by J. Vivian; "The Effect of Wind and Atmospheric Pressure on the Tides," by W. H. Wheeler; "The Gobert Freezing Process for Shaft Sinking and Tunneling under Rivers," by M. A. Gobert; "The Growth of the Port of Harwich," by William Birt; "The New Outlet of the River Maas at the Hook of Holland and the Improvement of the Scheur Branch up to Rotterdam," by L. F. Vernon Harcourt; "Some Notes of Facts and Figures relating to the Autumn Floods of 1894," by G. J. Symons; "The Dredging Operations on the Mersey Bar," by A. G. Lyster; "On Carbonic Anhydride Refrigerating Machinery," by E. Hesketh; "The Hermitic Process for Deodorizing Sewerage," by J. Napier; "The Modern Applications of Electricity to Traction Purposes," by Philip Dawson; "An Improved Portable Photometer," by A. P. Trotter and W. H. Preece; "Some Lessons in Telephony," by A. R. Bennett; "The Field Telegraph in the Chitral Campaign," by P. V. Luke; "A Movement designed to attain Astronomical Accuracy in the Motion of Siderostats," by G. J. Stoney; "Modern Flour-milling Machinery," by F. W. Turner; "The Linotype Composing Machine," by J. Southward; "Memorandum on the B. A. Screw Gauge for Small Screws," by T. E. Crompton; "A Uniform Factor of Safety for Boilers and Machinery in Steamships," by F. Key; "Experiments in the Transfer of Heat through Plates with variously Arranged Surfaces," by W. G. Walker; and "A New Principle of Aerial Navigation," by B. Baden Powell.

**H. Anthropology.**—The presiding officer of this section was Prof. W. M. Flinders Petrie, who discussed anthropology more as the study of man in relation to various and often independent subjects than as an organic and self-contained science.

Human nature is greater than all formulæ, and we may as soon hope to compact its study into a logical structure as to construct an algebraic equation for

predicting its course of thought. Two of the commonest and most delightfully elastic words in the subject may be looked at once more—"race" and "civilization." The definition of race is the most requisite element for any clear ideas about man. The only meaning that a "race" can have is a group of persons whose type has become unified by their rate of assimilation and affection by their conditions exceeding the rate of change produced by foreign elements. If the rate of mixture exceeded that of assimilation, then the people were a mixed race, or a mere agglomeration, like the population of the United States. The greatest problems awaiting solution were the conditions and rate of assimilation of races: namely, what period and kind of life was needed for climatic and other causes to have effect on the constitution and structure, what were the causes of permanence of type, and what relative powers of absorption one race had over another. Until these problems were reduced to something that could be reasonably estimated, they could only grope in the dark as to all racial question. In conclusion the speaker said: "It is the business of anthropology to make a knowledge of all other civilizations a part of all decent education. The origin and utility of the various customs and habits need to be pointed out, and in what way they are reasonable and needful to the well-being of the community. And, above all, we ought to impress on every boy that this civilization in which he grows is only one of innumerable experiments in life that have been tried; that it is by no means the only successful one, or perhaps not the most successful, that there has been; that there are many other solutions of the problems of community and culture which are as good as our own, and that no one solution will fit a different race, climate, or set of conditions. The highest form of this perception of other existence is only reached in the best history writing or fiction which enables the reader to strip himself for the time of his prejudices and views of life and reclothe the naked soul with an entirely different personality and environment."

The more important papers read before this section were the following:

"The Remains of the Native Indian Inhabitants of Jamaica," by Sir William H. Flower; "The Neolithic Invaders of Egypt," by W. M. Flinders Petrie; "Stone Implements from Somaliland," by H. W. Seton-Karr; "On Flint and Metal Working in Egypt," by W. H. Flinders Petrie; "Striated Flint Implements from the North of Ireland," by W. J. Knowles; "The Megaliths of Tripoli," by Swainson Cowper; "On the Kitchen Midden at Hastings," by W. J. Lewis Abbot; "On Cannibalism and the Pygmy Tribes in the Congo Basin," by Capt. S. L. Hinde; "The Habits of Human 'Leopard' Cannibals of the West Coast of Africa," by Scott Elliot; "The Samoyads of the Arctic Tundras," by Arthur Montefiore; "Horns of Honor, Dishonor, and Safety," by F. T. Elworthy; "The Religious Origin of Dances," by Mrs. Lilly Grove; "Upon Anthropometric Observations in East Aberdeenshire," by J. Gray; "Suffolk Dialect," by C. G. de Betham; "General Conclusions with regard to Folklore," by Edward Clodd.

On the 18th the section devoted itself to a general discussion of "Interference with the Civilization of Other Races," in which the chairman, Lord Stanmore, Prof. Haddon, Dr. R. N. Cust, Dr. H. O. Forbes, Ling Roth, and others took part. Subsequently the following papers were read:

"On the Neolithic Station of Butmir in Bosnia," by R. Munro; "Primitive European Idols in the Light of Recent Discoveries," by Arthur Evans; "A Palæolithic Skeleton from the Thames Valley," by Dr. Garson; and "The Light thrown on Primitive Warfare by the Languages and Usages of Historic Times," by G. Hartwell Jones.



Also, the following reports were presented :

"Report of the Committee for Investigating the Northwestern Tribes of Canada," "Report of the Committee on the Mental and Physical Deviations of Children," "Report of the Committee on Anthropometric Measurements in Schools," and "Report of the Committee on the Lake Village of Glastonbury."

**I. Physiology.**—No papers were read before this section.

**K. Botany.**—This section was presided over by Mr. W. T. Thistleton Dyer, director of the Royal Gardens in Kew. He said :

The establishment of a new section of the association devoted to botany can not but be regarded by English botanists as an event of the greatest importance. This severance of the two great branches of biology is inevitable from force of circumstances, for specialization is inseparable from scientific progress; but it will defeat its own end in biology if the specialist does not constantly keep in touch with those fundamental principles which are common to all organic Nature. In taking a retrospective view the names of Robert Brown, Henslow, Sir Joseph Hooker, Carpenter, and Charles Darwin can not be forgotten. It was Robert Brown who gave the first description of the nucleus of the cell. There are few men in this country who have indirectly more influenced the current of human thought than Henslow. Darwin speaks of his friendship with Henslow "as a circumstance which influenced my whole career more than any other." If, however, the old school of natural history, of which Henslow was a living spirit, is now, as it seems continually, losing its hold upon us, this has certainly not been due to its want of value as an educational discipline, or to its sterility in contributing new ideas to human knowledge. Asa Gray has compared Robert Brown with Darwin as "the two British naturalists" who have "more than any others impressed their influence upon science in the nineteenth century." The Darwinian theory, being the outcome of the natural-history method, rests at every point on a copious basis of fact and observation. Modern speculation is lacking in respect of this basis. Most of the new writers on the Darwinian theory, especially those who have been trained at Cambridge, generally begin by rejecting it as a theory of the origin of species, and then proceed unhesitatingly to reconstruct it. Little interest seems to be taken in systematic and descriptive botany, and geographical distribution is almost in a worse plight; yet Darwin calls it "that grand subject, that almost keystone of the law of creation." The greatest and most fundamental problem of all is that of assimilation. The very existence of life upon the earth depended upon it. The veil was slowly, but he thought surely, being lifted from its secrets. They know that starch, if its first visible product, was not its first result. If capacity and earnestness afforded an augury of success, the prospects of the future of the section possessed every element of promise.

The following were among the more important papers read before this section :

"An Account of a False Bacterium," by Marshall Ward; "Some Remarks on the Archesporium," by F. O. Bower; "The Occurrence in New Zealand of Two Forms of Peltoid Trentepohliaceæ," by A. Vaughan Jennings; "The Variations of Yeast Cells," by E. C. Hansen; "The Results of Williamson's Work on the Carboniferous Plants," by Dr. D. H. Scott; "Experiments on the Pangium Tree," by Dr. T. M. Treub; "A Supposed Case of Symbiosis in Tetraplodon," by Prof. Weiss; "Concerning the Structure of Bacterial Cells," by H. Wager; "The Diurnal Variation in the Amount of Diastase in Foliage Leaves," by Reynolds Green; "The Wealden Flora of England," by A. C. Seward; and "English Amber," by Prof. Conwentz.

**Popular Features.**—On the evening of Sept. 12 a *soirée* was given in the Ipswich Museum, under the auspices of the Ipswich Scientific Society and the Suffolk Institute of Archaeology. A discourse on "Magnetism in Rotation" was delivered on the evening of Sept. 13 by Prof. Silvanus P. Thompson. Saturday, Sept. 14, was devoted to excursions; these included whole-day excursions to Southwold and Oxford and half-day excursions to Bury St. Edmunds, to Helmingham Hall, and to Wenham Hall and Hadley. The lecture to workmen was on "Color," and was delivered on Saturday evening by Dr. Alfred Fison. "The Work of Pasteur and its Various Developments" was the theme of the second evening discourse, given by Dr. Percy F. Frankland, on the 16th.

Among the foreign scientific men attending the meeting were Frederick Bedell, of Cornell University, Ithaca, N. Y.; C. E. Curry, of Munich; A. P. N. Franchimont, of Leyden; Gustave Gilson, of Louvain; Othniel C. Marsh, of Yale University, New Haven, Conn.; Dr. Otto Maas, of Munich; Prof. Paschen, of Hanover; Ira Remsen, of Johns Hopkins University, Baltimore, Md.; Dr. van Rijkevorsel, of Rotterdam; Prof. Runge, of Hanover; and Dr. T. M. Treub, of Buitenzorg, Java.

**Attendance and Grants.**—At the meeting of the General Council, held on Sept. 18, the treasurer reported an attendance of 1,324 persons, of whom 31 were new annual members and 493 were associates. The receipts were £1,236, of which £1,160 were distributed among the sections in grants for research as follow: Mathematics and physics, £250; chemistry, £80; geology, £140; zoölogy, £405; geography, £10; mechanical science, £40; anthropology, £180; physiology, £25; and corresponding societies, £30. According to "Nature": "Coming after the Oxford year, the meeting in Ipswich is in numbers comparatively small; but from a scientific point of view everything augurs well."

**Next Meeting.**—The association will meet in 1896, in Liverpool, beginning on Sept. 16. The invitation to meet in Toronto, Canada, in 1897 was renewed, and was unanimously accepted. An invitation from Bournemouth was received for 1898. Sir Joseph Lister, eminent as the father of antiseptic surgery, who is foreign secretary of the Royal Society, was appointed as president-elect for the meeting in Liverpool in 1896. Besides the election of the vice-presidents named for that meeting, the re-election of the general secretary, the assistant general secretary, the treasurer, and the ordinary members of the council then took place.

**Australasian.**—The sixth annual meeting of the Australasian Association for the Advancement of Science was held in Brisbane, Queensland, beginning on Jan. 11 and ending on Jan. 18, with excursions on Jan. 19, 21, and 23. The officers of the meeting were as follow: President, A. C. Gregory. Section Presidents: A, Astronomy, Mathematics, and Physics, Alexander McAulay; B, Chemistry, J. H. Maiden; C, Geology and Mineralogy, T. W. Edgeworth David; D, Biology, Arthur Dendy; E, Geography, Baron F. von Mueller; F, Ethnology and Anthropology, Thomas Worsnop; G, Economic Science and Agriculture, W. Scott; H, Engineer-



ing and Architecture, James Fincham; I, Sanitary Science and Hygiene, J. W. Springthorpe; J, Mental Science and Education, Francis Anderson. Permanent Secretary, A. Liversidge. General Treasurer, H. C. Russell. General Secretaries, John Shirley and C. W. De Vis.

**Opening Session.**—The formal opening of the Brisbane meeting began on Jan. 12 with a meeting of the sectional committee to complete arrangements for work during the session. Almost immediately after the general council convened, and owing to the absence of Prof. Tate,



A. C. GREGORY.

Vice-President Russell occupied the chair. The business before the council included the confirming of the arrangements of the local committee and ratifying the selection of sectional officers. Other business included the naming of Prof. Archibald Liversidge as president for the meeting to be held in Sydney. Minor officers and local secretaries were also chosen. The opinion that, owing to the small number of members and the large extent of territory, yearly meetings were too frequent was presented, and it was proposed that they be held once in two years. The dividing of Section I, Mental Science and Education, was referred to a committee of that section for report, as was also the proposed division of Section G, Economic Science and Agriculture.

**President's Address.**—Owing to the absence of Ralph Tate, the retiring president, H. C. Russell, Government Astronomer of New South Wales, presided at the meeting on the evening of Jan. 12, held in Centennial Hall. After deploring the absence of Mr. Tate, he said: "No one has done more for the advancement of science in Australia than Mr. Gregory. His work is intimately known by every colonist, and even by those living in remote regions of the Northern Hemisphere." He then introduced Mr. Gregory, who proceeded at once to deliver his inaugural address on "The Geographical History of the Australian Continent during its Successive Phases of Geological De-

velopment." He said: "The earliest indications of the existence of land within the limits of the present Australian continent consist in the fact that many of the more elevated summits are composed of granite, which is certainly the oldest rock formation with which we are acquainted." These were found in Tasmania and in Western Australia. From the granite he passed to the sedimentary deposits, in which were the Laurentian, Cambrian, and Silurian rocks. These were principally developed in Queensland to the north and in Victoria to the south. Then came the Devonian and the first appearance of organic life. More of the land came up from the sea. The principal elevation was on the eastern coast, where the rise must have been several thousand feet, while on the west it was less pronounced, though the area added to the land included nearly the whole of what is now Western Australia. The auriferous deposits in lodes are found in the disrupted strata of this period. As to the sources from which the gold was derived, there were many speculations, but that which best accorded with the actual conditions "is that the metal exists in very minute quantities in the mass of the adjacent rocks from which it has been transferred through the agency of electric currents and the solvent action of alkaline chlorides which dissolve small quantities of the precious metals, and would be subject to decomposition at the places where fissures cause greater resistance to the electric current." The geology of the Queensland gold mines was discussed, those of Gympie cited as instructive examples of fissure lodes. Passing upward, he said that from the middle to the close of the Permo-carboniferous period the dry land teemed with vegetation, of which the lepidodendron was a conspicuous type. The geographical features of this period show a continent somewhat similar in form to that of the present Australia. At about the end of the Palæozoic or the beginning of the Mesozoic period there was a further elevation, especially in the eastern part. The vegetation that followed this period was well adapted for the formation of coal deposits. As the Cretaceous began, a general subsidence took place and the coal deposits ceased. Soft shales were formed, fresh-water vegetation and various mollusks of the Cretaceous are conspicuously found. The depression during the Cretaceous was gradual and of long duration. On the east coast the ocean rose from 100 to 200 feet above its present level in Queensland. The central and western parts of the continent were almost entirely submerged. At the close of the Mesozoic Australia was reduced to the area of a large island on the east coast and some small islands on the southwest and northwest of the present continent. Early in the Tertiary a new elevation of the land began, but the rise was not attended by any great disturbance of the strata, and the present outline of the continent was assumed by Australia. The valleys and river systems as they now are came into existence chiefly in consequence of volcanic action, and in time came the gigantic marsupials of Australia, whose remains only are found. Abundant rainfalls were conspicuous events during the drift, after which the climate gradually became drier and

the huge marsupials disappeared. In a word, the climate at the time of the last elevation maintained a magnificent system of rivers, which drained the interior into Speneer's Gulf, but the gradual decrease in rainfall has dried up these water-courses, and their channels have been nearly obliterated and the country changed from one of great fertility to a comparatively desert interior, which can only be partially reclaimed by the deep boring of artesian wells.

*A. Astronomy, Mathematics, and Physics.*—This section was presided over by Alexander McAulay, who fills the place of lecturer on mathematics and physics at the University of Tasmania. His address was "On Some Popular Misconceptions of the Nature of Mathematical Thought," and was essentially a proposition to discontinue the adverse criticisms of metaphysicians by mathematicians and of mathematicians by metaphysicians. He reviewed the relative benefits accruing to mankind and the student and discussed the mental and moral faculties called into play by the study of the more exact and less exact sciences, assigning a high place to logic, mathematics, and physics. In conclusion he summed up the peculiar characteristics of the science of mathematics as follows: "It is unique in the cosmic nature and the universality of the questions it deals with, in the stability of the data on which it rests, on the reliableness of the assistance it renders to every other science which has become sufficiently highly generalized or sufficiently precise. It has been disputed whether mathematics is a branch of logic or logic a branch of mathematics. If we group them together for the moment we may say that they are further unique in the almost inconceivable exactness of their methods and in their being exclusively an intellectual product as opposed to a combined intellectual and observational one. It may be added that, notwithstanding the purely intellectual nature of the subject, notwithstanding the highly general nature of most of its results, the mere volume of these results, as in so many other sciences, is so great that it is impossible now for a single man to be really conversant with any but a small portion of the whole. The prospects opened up to the merely acquisitive mathematician, however great his powers, in that direction are far more than sufficient for his lifetime, whereas the inducements offered to him who would walk where no man walked before are only rendered the more numerous, in that mathematics from its very extension provides more points of contact of the known and unknown than in any former age."

The following papers were read and discussed before the section:

"The Maintenance of Solar Energy," by the Archbishop of Hobart; "Why do we not take a Deeper Interest in Astronomy?" by Rev. Thomas Roseby; "Conjecture as to the Present Stage of the Life History of Mars, from Comparisons of the Earth, Mars, and the Moon," by J. Ewen Davidson; "On the Longitude of the Boundary Line between South Australia and the Eastern Colonies," by Pietro Baracchi; "Advancement of Astronomy in the Southern Hemisphere," by R. T. A. Innes; "Transit of Mercury, Nov. 11, 1894: Scientific Results," by J. P. Thomson; "On a Form of the Differential Equations of Dynamics," by Sir Robert Ball; "Some Notes on the New Royal Observatory, Edinburgh," by Ralph

Copeland; and "The Energy of the Electro-magnetic Field," by Prof. Bragg.

*B. Chemistry.*—The presiding officer of this section was J. H. Maiden, Superintendent of Technical Education, New South Wales. He spoke on "The Chemistry of the Australian Indigenous Vegetation." His address was divided into two portions. The first included a discussion of the questions "(1) What had been done in the direction of chemically investigating our indigenous plant products? (2) What remains to be done? (3) How can it best be done?" At the outset he took up the workers and deplored the lack of requirement of proper qualifications for analytical chemists, and urged the formation of a pharmaceutical subsection in the association whose influence should correspond to that of the British Pharmaceutical Conference. He then proceeded to deal in detail with the following items: Human food and food adjuncts; fungi; algæ; forage plants—(a) grasses, and (b) salt bushes and other fodder plants; plants poisonous to stock; substances reputed medicinal—drugs; narcotics; fish poisons of the aborigines; gums; resins; kinos; eucalyptus oils; other essential oils; fixed oils; perfumes; dyes of tinctorial substances; tans; timbers; and fibers. He said in closing: "Here is a mighty list. Surely no chemist desirous of taking up original research can complain of the variety of work presented to his choice. If any of the suggestions I have made or the pleas for research I have put forward should lead chemists to take up any subject connected with our indigenous vegetation, I shall feel rewarded by the thought that the presidential address to the chemistry section has done something to make our organization true to its name—an Association for the Advancement of Science."

Subsequently the following-named papers were read and discussed before the section:

"Variations in the Amount of Ammonia in Waters on Keeping," "On the Internal Structure of Gold Nuggets," "On the Corrosion of Aluminum," and "Contributions to the Bibliography of Gold," by Prof. Archibald Liversidge; "The Refractory Gold Ores of Queensland: Their Sources and Treatment," by E. A. Weinberg; "Pharmacy as a Science and its Future," by W. Finselbach; "Notes and Analyses of Some of the Artesian Waters of New South Wales," by John C. H. Mingaye; "On the Economic Treatment of Gold Ores," by George H. Irvine; "Queensland Native Astringent Medicines," by Joseph Lau-terer; "Portland Cement after Fifty Years," by W. M. Doherty; "Some Remarks on the Teaching of Elementary Chemistry," by A. J. Sach; "Analysis of Eucalyptus Gums," by Dr. Wilton Love; "The Ointments of the British Pharmacopœia," by F. W. Simmonds; "Notes on the Poisonous Constituents of *Stephania Hernandeziifolia*," by Edward H. Rennie; "Preliminary Notes on the Bark of *Carissa Ovata* *E. Br. vel Stolonifera, Bail.*" by H. G. Smith; and "On a Method of Shortening Certain Chemical Calculations," by W. A. Hargreaves.

*C. Geology and Mineralogy.*—Prof. T. W. Edgeworth David, of Sydney University, presided over this section and chose as the subject of his address "Ice Action in Australasia." That portion of his remarks that had to do with the chosen title was preceded by a brief review of some recent geological discoveries. He referred to the fact that in America the Archaean had been shown to consist of four great systems widely



separated from one another in geological time. The reference of the supposed animal solenopora to the calcareous seaweeds was next discussed, and the reference of oölitic limestone to an organic instead of a chemical origin was mentioned. The geological antiquity of man was discussed and British exploration cited to show that man antedated the close of the great Ice Age, and the great Ice Age was thought by most geologists to have passed away from eight thousand to twelve thousand years ago. Turning to Australasia, there was evidence of at least two glaciations on this continent. The first and most intense was in late Palæozoic time, when the Bowen river coal measures were being formed and the productive coal measures of New South Wales and of the Mersey coal basin in Tasmania. Quite recently attention had been called to the presence of what were probably ice-borne erratics in the Brisbane sandstone. These belonged to a later epoch, and there were evidences of a newer glaciation at Kosciusko and in several high ranges in Victoria. All the evidence so far collected showed that the ice which produced the great glaciations in late Palæozoic or early Mesozoic time came from the south and moved toward the north.

The following-named papers were then read and discussed before the section:

"Artesian Water in the Western Interior of Queensland," by Robert L. Jack; "Anticlines and Synclines and their Relation to Mining," by Ernest Lidgley; "On the Nomenclature of Crystals," by Archibald Liveridge; "The Development and Progress of Mining and Geology in Queensland," by William Fryar; "On the Present State of our Knowledge of the Older Tertiaries of Southern Australia," by G. B. Pritchard; "The Antiquity of Man in Victoria," by W. H. Ferguson; "The Glacial Deposits of Victoria," by G. Officer, L. Balfour, and E. G. Hogg; "Notes on Tin Mining at Herberton," by John Munday; and "Notes on the Tin Deposits of the Blue Tier, on the Northeast Coast of Tasmania," by Henry Grant.

**D. Biology.**—The presiding officer of this section was Prof. Arthur Dendy, of Canterbury College, Christ Church, N. Z., who chose as the subject of his address "The Cryptozoic Fauna of Australasia." He said: "The term cryptozoic has been applied to that remarkable condition of small animals that are found hidden away in the daytime beneath stones and fallen logs and in other similar situations." The members of this cryptozoic fauna have been derived from nearly all the principal groups of the animal kingdom, and the only character that they all possess in common is their hatred of exposure. He classed this fauna into four sections, distinguished by their mode of origin. They are: 1. Representatives of typically terrestrial groups of animals which are dominant at the present day. It includes many insects, especially ants, beetles, and cockroaches, many spiders, many centipedes and millipedes and many slugs and snails. 2. Surviving members of extremely ancient groups which are now almost extinct. In this section may perhaps be included the scorpions, which are of extreme antiquity. These primitive types appear to have successfully evaded the struggle for existence by taking refuge in obscure retreats. 3. Immature forms of terrestrial animals which are not cryptozoic in the adult condition. This section includes the larvæ of various insects

of which the adults live in the open. 4. Isolated representatives of typically aquatic groups of animals which have as yet become but little modified in accordance with their mode of life. Such species appear to be taking the first steps toward a terrestrial life. The introductory remarks were followed by a short review of the knowledge of the principal cryptozoic animals met with in Australasia, considering them in their proper zoölogical order.

Afterward the following-named papers were read and discussed before the section:

"Dendrolagus or Tree Kangaroo," by Dudley Le Souef; "On the Eating of Earth by the Larger Macropodidæ," by J. Douglas Ogilby; "The Marine Mollusca of Tasmania: A Revised List," by Miss Lodder; "Observations and Notes on the Genus *Nephila*," by William Joseph Rainbow; "The Marine Biology of Houtman's Abrolhos," by W. Saville Kent; "Nests and Eggs of Australian Accipitres, or Diurnal Birds of Prey," by A. J. Campbell; "A Short General Account of the Subterranean Crustacea of New Zealand," by Charles Chilton; "Economic Entomology," by Rev. E. H. Thompson; "Metamorphosis of the First Pair of Legs into a Pair of Physiological Feelers in Certain Species of Arachnidæ," by Joseph Lauterer; "A Synoptical List of Coccidæ reported from Australasia and the Pacific Islands up to December, 1894," by W. M. Maskell; "The Migration of Australian Birds," by J. W. Fawcett; "On the Publication of Museum Catalogues of Types" and "On Scientific Book Illustrations," by Charles T. Musson; "Peculiarities of the Phanerogamic Flora of Queensland," by F. Manson Bailey; "Australian Mosses," by Richard A. Bastow; "Anatomy of *Duboisia Myoporoides*, *Alstonia Constricta*, and of the Genus *Kraneria*," by W. Finselbach; "The Flora of the Clarendon District, S. A., with Notes on Other Local Floras," by J. G. O. Tepper; "A Statistical Account of Australian Fungi," by D. McAlpine; "The Pyrenocarpeæ of the Lichen Family," by Dr. Jean Mueller; "Pestiferous Fungi," by Dr. M. C. Cooke; "Some Conjugate Algae of Brisbane and Neighborhood," by Robert Grieve; "Some Plants peculiar to the Burnett Basin," by James Keys; "Micro-chemical Researches respecting the Tissue of the Bark of Eucalypts," by Joseph Lauterer; "Useful Plants of the Australian Aborigines," by J. W. Fawcett; "Who discovered the Eucalyptus," by G. B. Barton; "The Fertilization of Some Australian Plants," by A. G. Hamilton; and "Mylitta Australis," by Mrs. Martin.

**E. Geography.**—The president of this section was Baron Ferdinand von Mueller, who delivered an address on "The Commerce of Australia with Neighboring Countries in Relation to Geography." Among the interesting items of his long address were the following: "Australia comprises, territorially, about one third of the British Empire, and is well adapted for settlement throughout the greater portion of its area. Artesian water will fertilize areas now more or less a desert, and storage of surface water will play its part. The remaining blanks on the Australian map will most probably be filled before the century closes. Mining explorers are penetrating into unknown regions, particularly in the interior of Western Australia. Certain of these are equipped with dromedaries. An ordinary camel team traveled 800 miles from South Australia to Coolgardie without mishap. Brave men are pushing forward to Central Australia from the east. All this portends vastly increased commerce, new gold fields being constantly discovered, calling into being numerous

other industries. Cities of the first rank will arise with marvelous rapidity. Nothing will conduce to this so much as the discovery of gold fields, because the product is immediately available. In Western Australia, where the gold-yielding area seems to stretch through considerably over 1,000 miles from south to north, with a width as yet not even approximately known, the gold deposits are particularly worthy of attention. As civilization extends in Africa a large trade must necessarily spring up. The impending developments in China, Japan, and adjacent islands must not be lost sight of. This will be hastened by the construction of the great Russian transcontinental line from the Ural to the northern boundary of Corea, a distance of about 5,000 miles.

The following-named papers were then read and discussed before the section:

"A West Indian Island," by Sir Henry W. Norman; "A Visit to Tokelau, Union Group," by Rev. Samuel Ella; "Ocean Currents: Bottle Results," by Clement L. Wragge; "Corea," by Charles Gardiner; "Johore, Malay Peninsula," by Harry Lake; "Matabeleland," by Dr. Jameson; "British East Africa," by Sir T. Fowell Buxton; "Afghanistan," by John A. Gray; "The Upper Mekong, Siam," by H. Warrington Smyth; "The Welsh Colony of the Chupat, Argentina," by Daniel Jones; "The Bissagos Islands," by Paul Armand; "Borneo," by Edmund Lloyd Owen; "Physiography of the Victorian Gold Fields," by James Stirling; "The Himalayan State of Sikkim," by A. W. Paul; "Rotuma and the Rotunans," by Rev. William Allen; and "Campaigns against Arab Slavers in the Congo Free State," by Baron Dhanis.

*F. Ethnology and Anthropology.*—This section was presided over by Thomas Worsnop, town clerk of Adelaide, whose address dealt with "The Prehistoric Arts of the Aborigines," and was illustrated with 25 lantern views of aboriginal drawings. From these the author argued that all drawings by the aborigines were the result of a self-tutorship and original; that the aborigines arrived in Australia in some remote period destitute of any knowledge of art, and, being fixed to that condition, remained unprogressive to the present day. In all the handiwork of the Australian aboriginal there was an essential originality which distinguished him from all other savage races. He had made the most of his resources, utilizing them all so completely that civilized man was unable to suggest any improvement. They possessed an intimate knowledge of their flora and fauna, and they had also considerable knowledge in anatomy. It should be remembered that art among civilized races was the result of cumulative instruction, and that it was the duty of civilized races to judge leniently of efforts which were quite equal to those of our forefathers at no very remote period. "The art and skill with which some of the figures are drawn, and the great effect which has been produced by such simple means, render it most probable that many of them must have been executed with the intention of exercising an influence upon the fears and the superstitious feelings of the ignorant and barbarous natives. For such a purpose they are indeed well calculated. I have no doubt that were this subject followed up by intelligent explorers and others who may be brought into

contact with examples of native art much profit and great pleasure would be derived from their reproduction and publication. A family likeness marks all of them; the details are everywhere the same. All are imitative, and are the resultant product of untutored taste."

The following papers were then read and discussed in the section:

"The Ancient Government of Samoa," by Rev. Samuel Ella; "Rotumah," by Rev. Thomas Moore; "Erromanga," by Rev. H. A. Robertson; "Notes on Tokelau, Gilbert, and Elliee Islands," by Rev. J. E. Newell; "A Comparative View of Some Samoan Customs" and "Early Samoan Voyages and Settlements," by Rev. J. B. Stairs; "Gaelic Contributions to Folklore," by Rev. A. C. Sutherland; "Foods of the Early Aborigines," by Thomas Petrie; "Boomerang and Woomera: Evolution, Varieties, and Distribution," by Archibald Meston; "Foods of the Northwest Aborigines," by J. Coghlan; "Memories of an Old Explorer," by John Roper; "Outlines of a Grammar of the Turrabul Dialect between Ipswich and Brisbane on the Sandy Country (Yerongpan)," by Joseph Lauterer; "Superstitions of the West African Tribes," by R. O. Garner; "Customs of the Early Clarence River Aboriginists," by John F. Small; "Aboriginal Drawings in the Wollombi Caves," by W. J. Enright and R. H. Matthews; and "Curious Aboriginal Marriage Custom," by E. Thorne.

*G. Economic Science and Agriculture.*—Prof. Walter Scott, of Sydney University, presided over this section, and the topic of his address was "Fixing a Minimum Wage." He said: Whether interference with free contract and free competition will yield a balance of good or harm, varies according to circumstances, and each case must be considered on its merits. We are probably all agreed that the wages of some workers as settled by free bargaining are lower than is desirable. Can governments do anything to raise such wages as we may consider too low? In the first place, governments can (and Australian governments do) pay to their own employees in some cases wages above the lowest rate at which they could get the work done. A government that decides to take this course may meet the cost (1) by retrenching other public services, or (2) by additional taxation. In the first case it is the general public that is the loser, being deprived of certain luxuries or conveniences that its government could otherwise have supplied; and the result may be that we shall have on the one hand, say, fewer ornaments on our public buildings, and on the other hand certain government laborers better provided with the means of a satisfactory life. If we prefer this way of spending our public revenue there is no law of political economy to forbid it. If, on the other hand, the government decides to meet the cost by fresh taxation the result will be that certain taxpayers are deprived of some comforts and indulgences, while certain government laborers get more: a change of distribution which may be an improvement. The practice of the government being to accept the lowest tender, the competition of the tenderers forces wages down, and if sweating exist, it is the government that is the sweater. To forbid subcontracting would raise the cost to the public without benefiting the wage earner. Why should not government fix a minimum wage in these contracts also? It is possible and expedient in the general interest to fix a minimum wage in private employment also? That must be done,



if done at all, either by trades unions or by government. If, then, anything is to be done for the class that needs help most, it must be done by government.

The following-named papers were then read and discussed before the section :

"Factory Laws in New Zealand," by Mrs. Grace Neill; "A Living Wage," by Rev. Reginald Stephen; "Primitive Theories of Political Duty," by W. Jethro Brown; "Some Aspects of the Land Question," by John Quick; "The Social Trend: What is Coming?" by Rev. Horace F. Tucker; "Labor: Its Social Rights and Duties," by Rev. J. McInerney; "Some Factors of Federation," by William McMillan; "Land and Finance," by H. L. E. Ruthning; "Intercolonial Free Trade as affecting Queensland Agronomy," by Daniel Jones; "The Wealth of a Nation as revealed in Australian Finance," by T. P. Lucas; "Labor, the Social Problem of the Hour," by E. F. Scammell; "A Problem in Federation under the Crown: The Representation of the Crown in Commonwealth and State," by R. R. Garran; "Labor and Capital," by A. J. Ogilvy; "Three Systems of Political Economy," by Andrew Garvan; "The Torrens Systems of Real Property Law," by J. B. Gregory; "Privy Council Appeals and the Australian Colonies," by G. B. Burton; "The Taxation of Land Values," by H. B. Higgins; "The Vital Processes of National Life," by Sir S. W. Griffith; and "The Socialism of the New Testament," by Rev. Walter Roberts.

The foregoing papers were on political science and the following were on agriculture :

"Soil Analysis" and "Examinations of Different Varieties of Wheat grown in New South Wales," by T. B. Guthrie; "Possibilities of Chilling and Freezing on Australian Agriculture," by Angus Mackay; "Climatic Influences on Contagious Diseases of Live Stock," by P. R. Gordon; "Preparation of Meat for Export," by C. T. Aleutt; "The Teaching of Agricultural Botany," by Charles T. Musson; "Raisin Drying," by J. L. Thompson; "Our Defenses against Low Prices of Farm Products," by E. M. Shelton; "How to Grow Fruit," by Albert H. Benson; "Floods and Forests," by Philip MacMahon; "Semitropical Horticulture," by Leslie G. Corrie; "The Science of Stock Breeding," by C. C. Mair; "Forage Plants and Grasses of Australia," by Fred. Turner; "The Agricultural Chemistry of the Sugar Cane," by Joseph Fletcher; and "Saving Depreciation of Hides in Branding," by Alexander Bruce.

*H. Engineering and Architecture.*—This section was presided over by James Fincham, Engineer-in-chief of Tasmania, who discussed the topics of "Architecture and Engineering" in his address. He said: "The ablest works of the old architects or 'chief builders' are always found in the expression of a high ideal of service in worship, and the modern engineer with a proper appreciation of his work may claim a similar high ideal of service when he removes dangerous rocks from the course of our ships, builds out massive arms of protection for the shelter of life or property from the attacks of the sea in its wild rages, links people to people by the daring bridge or the skillfully burrowed tunnel, and fights disease and suffering with water and sanitary schemes. As prominent among the numerous items in engineering progress we may note the large ship-canal schemes, the problem of rapid transit in large cities, and the ever-increasing boldness in bridge designs, the latest of which, involving the support of 6 lines of railway in a span exceeding 3,100 feet, has been formally approved and certified by a board of the ablest en-

gineers in America. The magnitude of our engineering and architectural public works in Australasia can be fairly gauged from the expenditure upon them of some £200,000,000, out of which £120,000,000 have been spent upon railways, and I make bold to say that a large portion of this latter sum has been prematurely expended in the case of numerous lines through districts with requirements that have been amply served by one or at most two trains a day. The extended construction of new lines to meet the needs of growing populations can not be long delayed, and the construction of good pioneer and feeder lines at a much lower normal cost therefore becomes a question of considerable importance. Because mistakes have been made in the past by constructing as 'light lines' railways that soon became quasi main lines, unequal to the strain of traffic, or because, from some public or political influence, a line that would have served all really needful requirements is ruined by being worked under conditions for which it was never designed, in order to serve a small unproductive passenger traffic.

Subsequently the following-named papers were read and discussed by the section :

"Experiments on the Waterproofing of Bricks and Sandstones with Oils" and "Experiments on the Porosity of Plasters and Cements," by Prof. A. Liversidge; "Wind Pressure," by Prof. W. C. Kernot; "Architectural Sculpture," by Percy F. Hockings; "Diversion of Flood Waters," by John Rogers; "Domestic Architecture in Semitropical Climates," by J. H. M. Addison; "On Teredo-resisting River Structures," by Thomas Parker; "A few Notes on the River Fitzroy, Central Queensland," by Thomas Parker; "Descriptive Architecture and Art," by Leslie G. Cowie; and "Earthquakes in Relation to Building Construction," by Thomas Turnbull.

*I. Sanitary Science and Hygiene.*—This section was presided over by Dr. J. W. Springthorpe, who delivered an address on "the Interrelations of Science and Health." He said that on matters of health, as upon all matters of human interest, three voices had during the ages claimed to speak to man with more or less authority—the voice of the priest, the voice of the philosopher, and the voice of the scientist. Each in turn had dominated the rest, none had ever become perfectly silent, and all had possessed a distinct value. A striking characteristic of modern times had been the rise and crowning of the third adviser, Science—the science that worked through accurate observation, exact experiment, and logical deduction therefrom. Health must, in the first place, be very largely a matter of inheritance. Man, like other organisms, was started upon the way of life with all possibilities conditioned by inherited molecular potentialities, and science would shut its eyes to omnipotent law if it did not recognize the fundamental influence of appropriate marriage upon the health of the offspring. An incalculable amount of disease would be averted and a corresponding amount of health secured if only inheritance could be scientifically regulated. Inheritance, however, did not explain all life, much less all health. Both were also questions of development and environment. It was a commonplace to remind any one how largely health depended upon, for example, such everyday matters as food and drink, exercise, recrea-

tion and rest, and attention to the different functions. Yet how widespread did they find ignorance and neglect in these very points, and how very disastrous were the results that followed therefrom! These separate matters were considered in turn. And in conclusion, he said that the sanitary millennium lay before and not behind them, and that all succeeding years would witness a continuous, if gradual, decrease in the amount and degree of disease.

The following papers were then read and discussed before the section :

"Recent Sanitary Progress in South Australia," by Thomas Bostwick; "Leprosy," by Alexander Francis; "The Climate of Australia in Relation to Phthisis," by Duncan Turner; "The Sanitation of Country Towns," by Æneas J. McDonnell; "The Effect of the Queensland Government Educational Regulations upon the Physique of the Present and Future North Queenslanders," by Joseph Ahearne; "The Hygiene of Dress, with Special Reference to Queensland," by Lillian Cooper; "The Distributed Center System of Mechanical Sewage Transmission," by Robert Wilson; "Further Notes on Spiroptera and Tuberculosis in Cattle," by C. E. Bernard and Archibald Parkes; "Remarks on Modern Etiological Views of the Maintenance of Leprosy" and "A Review of the Sanitary State of New South Wales in 1894," by J. Ashburton Thompson; "An Inquiry into the Principles of the Treatment of Inebriety and Kindred Conditions," by Patrick Smith; "The Promise of 'Serum Therapeutics' in regard to Tuberculosis," by J. Sidney Hunt; "A Sanitarium for Consumptive Patients in Queensland," by Eugen Hirschfeld; "The Prevalence and Intercommunicability of Human and Animal Tuberculosis," by S. S. Cameron; "Contagiousness of Tuberculosis," by F. H. Vivian Voss; "Compulsory Notification of Infectious Disease," by Wilton Love; "Leprosy," by C. E. Dumbleton; "Federal Quarantine," by K. J. O'Doherty; and "Notes on Phthisis," by George L. Mullins.

*J. Mental Science and Education.*—The presiding officer of this section was Prof. Francis Anderson, of Sydney University, whose address was on "Politics and Education." After discussing his subject generally he said in the United States there had been founded in the large cities and in connection with many of the larger universities schools of political science, and he did not see why they could not be established in Australia, not only in towns which had their universities, but in places like Brisbane, which were not the proud possessors of a university. In the American schools of political science it was possible to obtain information with regard to many of the political problems in Australia with greater ease than it could be obtained in Australia itself. The publications which were issued under the auspices of these schools had not only supplied our education in the American States to students, lawyers, business men, and others, but they supplied about the only political education obtained by Australian students, lawyers, and business men. In Australia it was to the organizations such as the schools that they must look—in addition to the work of the press—for the training and education of the body of opinion which was to such a large extent wanting here. We had no training for journalists beyond that which they might pick up by actual experience. We had training for lawyers, but they might be better if they had a training which went beyond the special training they now received. Further,

there were the civil servants. Now, for all they could see, the civil service of Australia, great as it now is, might even become a much larger body. But supposing the Government should extend its operations much beyond its present limits, where were we to look for a body of trained civil servants? If we succeeded in working a land act we knew we did so after a succession of blunders, and, if merely to supply a training and education which might benefit the public servants and the citizens, the establishment of schools of political science would be an experiment well worth trying, perhaps a better experiment than 50 or 100 others that we have already tried.

Subsequently the following named papers were read by their authors and were discussed before the section :

"Science as a Subject in Girl's Schools," by Miss F. E. Hunt; "The Training of Teachers," by Miss Helen E. Downs; "The Development of English Comedy: An Example of Literary Evolution," by W. H. Williams; "The University and the State," by Canon F. Slaney Poole; "The Tendencies of Australian Literature," by Ernest Favenc; "On the Teaching of Languages," by Charles H. Barton; "Walt Whitman," by William Gay; "Some Methods of Studying Languages," by George W. Power; "The Curriculum of Secondary Education," by D. H. Hollidge; "Education of Girls," by Mrs. M. S. Wolstenholme; "Architecture in Relation to Education," by George H. M. Addison; "The Technical Element in a State System of Education," by Anthony St. Ledger; "The Poetry of Robert Buchanan," by W. Edward Graham; "The Music of Speech," by John H. Nicholson; "State Instruction in Drawing" and "Australian Art Development," by John Plummer; "A Contribution toward the Study of the Relation of Ethics and Science," by Rev. J. S. Pollock; "The Tendencies of Australian Literature," by John B. O'Hara; "The Tendencies of Australian Literature," by Sydney Jephcott; "Use and Abuse of Examinations," by Henry Belcher; "The Importance of Mental Science as a Guide in Primary Education," by James Rule; "Religious Instruction in Day Schools," by A. R. Rivers; "Art Education," by R. Godfrey Rivers; "The Educational Chasm, and how to Bridge it," by H. Cecil Wright; "The Schoolmaster of the Future," by Thomas Bradbury; "The White Velette," by Mrs. Thomas Wade Foott; "To Science," by George E. Evans; and "A Glance at the Art of Sculpture," by J. R. Tranthim-Fryar.

**Next Meeting.**—At a meeting of the General Council held on Jan. 18, it was resolved that the next meeting of the Association be held in Sydney two years hence, also that the meeting next after the Sydney meeting be held at the Melbourne University. The new president chosen is Prof. Archibald Liversidge, of Sydney.

#### ASTRONOMY, PROGRESS OF, IN 1895.

Though, like the year immediately preceding it, 1895 was not remarkable for any startling astronomical disclosures, save the interesting discovery of the components of the rings of Saturn, yet our knowledge of the visible celestial universe has surely though slowly advanced.

**The Solar System.**—Since the completion of last year's record the boundaries of the solar system have not been enlarged, nor has its membership been increased, except by the addition of a few asteroids and two short-period comets, and, as no change has been made in the assumed solar parallax, the volumes and distances of its several constituent bodies, both primary and secondary, remain mostly unchanged.



**The Sun.**—The efforts of several astronomers, notably those of Dr. Common, of England, and of M. Deslandres, of France, and of Prof. G. E. Hale, of the Kenwood Observatory of Chicago, to photograph the solar corona without an eclipse have resulted thus far only in failure. And, though this idea has not been entirely abandoned, yet there is so little promise of success that an attempt to perform this difficult task by other means is being made, but, owing to the difficulties attaching to this problem, its solution seems well-nigh hopeless. At the present the corona can be observed only when the Sun is totally eclipsed, hence, the time for its study amounts to but a few minutes in a century. Considering this fact, the importance of the ability to photograph the corona of the un-eclipsed Sun is self-evident.

**Wonderful Solar Prominences.**—In the "Astronomical Journal," August, 1895, Prof. J. B. Coit writes of a prominence observed by him on June 11, 1895, whose phenomena was on a scale of magnitude and brilliance seldom observed. He says: "At 2<sup>h</sup> 17<sup>m</sup>, Washington mean time, with the slit of the spectroscope tangential to the Sun's limb, at position angle 243°, a brilliant prominence was discovered resting upon the Sun, having a broad base and widened out at the top. Upon the western side a streamer reached down to the chromosphere and extended upon it some 15°. The top of the formation was quite regular, there being no spikes nor sharp tongues of flame. The height was 74" = 33,300 miles. At 2<sup>h</sup> 49<sup>m</sup> a small, detached cloud was seen floating above the main portion. The ascent of the prominence was gradual. At 3<sup>h</sup> 19<sup>m</sup> 28<sup>s</sup> it had reached to the extraordinary height of 289" = 130,050 miles, a length great enough to five and one half times envelop the Earth. At 3<sup>h</sup> 7<sup>m</sup> the ascending column was resolved into detached clouds, the upper one at the enormous height just mentioned."

A prominence of far greater magnitude than that just described, attaining to a greater height than any ever observed, was seen and measured by Father Fénye, of the Haynald Observatory, Hungary, on Dec. 24, 1894. The maximum velocity of the uprush was nearly 280 miles per second, and, though the prominence reached to the prodigious height of 11' 1" or 297,450 miles, the whole outburst was at an end in three hours. The origin of a force so enormous must lie beneath the chromosphere in the Sun itself.

**Temperature of the Sun.**—M. M. Wilson and Gray, of the Daromona Observatory, as a result of experiments on the temperature of the carbons of the electric arc, find it necessary to make correction to the hitherto assumed temperature of the Sun, increasing it from 13,352° F. to 14,432° F.

**Transit of Mercury.**—The transit of Mercury across the disk of the Sun, on Nov. 10, 1894, was visible throughout the Western Continent and the western portion of the Eastern Continent, and where the sky permitted was generally observed. At the Lowe Observatory, Echo mountain, California, the phenomenon was observed in its entirety, as also at the Lick Observatory, Mount Hamilton, California. The transit began about one minute later than the computed time, which delay was noted in Eng-

land also and elsewhere. At the Lowe Observatory no halo encircling the planet was detected, though carefully looked for by the observers, but a starlike point gleamed from the center of its disk several times. This appearance was noted at the Davidson Observatory, San Francisco, also, though not seen by the observers on Mount Hamilton. This central spark of light has been a subject of dispute, some observers averring they had seen it, while its existence has as often been denied by others.

**Diameter of Mercury.**—On Nov. 10, 1894, during the transit, Dr. Barnard, of the Lick Observatory, succeeded in obtaining an elaborate series of measures of the angular diameter of the planet's disk while transiting the Sun, which will involve a revision of the dimensions adopted by Leverrier in his tables now used in the "Nautical Almanac." Reduced to distance unity, they become equatorial diameter 6'24", and polar diameter 6'178". The weighted mean, depending on the work of 19 different observers extending over a period of fifty-eight years, was 6'415". Leverrier's value was 6'68" at the mean distance of the Earth from the Sun. From the mean of Barnard's measures—i. e., from 6'210"—the linear diameter of Mercury is 2,781½ miles.

**Rotation of Mercury.**—The theory advocated by Schiaparelli, that the rotation of Mercury on his axis is synchronous with his revolution around the Sun, does not meet with acceptance by astronomers, particularly by those who have made special study of the planet. The generally received opinion is that his rotation period differs but little from those of the inner group of major planets, viz., the Earth and Mars, and from the assumed period of Venus.

**Mass of Mercury.**—M. Backlund's recent researches on Mercury's mass and the acceleration of the mean movement of Encke's comet are described by M. Callandreau in "Comptes Rendus" of Oct. 1, 1894. Encke's comet has particular interest not only on account of the diminution of its period of revolution (about two and one half hours from one apparition to the next), but also from the fact that its motion is disturbed by Mercury. A discussion of the 7 apparitions of the comet between the years 1871 and 1891 has led M. Backlund to the conclusion that Mercury has a much smaller mass than has hitherto been ascribed to him. The value deduced is (the Sun equaling 1) mass of Mercury =  $\frac{1}{9647000}$ ; hence, nearly 9,700,000 bodies like Mercury would be required to equal the mass or weight of the Sun.

**Rotation of Venus.**—Important investigations of the period of rotation of Venus have been made by a number of astronomers, among them M. Camille Flammarion, the French astronomer, whose study has extended through a period of eight years, and have resulted in the refutation of the hypothesis that this planet, like our Moon, completes a rotation on her axis simultaneously with her revolution around the Sun, viz., in 24<sup>d</sup> 16<sup>h</sup>. Late determinations make her rotary period not greatly different from twenty-four hours.

**Spectrum of Mars.**—Dr. Huggins has recently made some observations of the spectrum of Mars which fully confirm those made by him nearly thirty years ago. These, though difficult

and delicate, showed that, undoubtedly, the atmosphere of Mars was heavily laden with water vapor, for certain bands were seen which correspond with the bands of water vapor found on the Earth in the spectra of the rising and setting Sun. By a comparison of the spectrum of Mars with that of the Moon, the latter being at a lower altitude than the former, Dr. Huggins proved that these bands were not due to the influence of our own atmosphere. Seeing that we are looking at Mars from a zenithal position, and that the telluric bands of the Earth's atmosphere could be seen only with the Sun at a very low altitude, even the slightest indication of the presence of water vapor in the spectrum of Mars was proof positive of its existence in his atmosphere in considerable quantity.

**Inner Satellite of Mars.**—Observations of this satellite (Phobos), made by Prof. W. W. Campbell, of the Lick Observatory, between Oct. 25 and Nov. 15, 1894, show that its eastern elongation occurs at a considerably greater distance from the planet than does the western elongation. Prof. Hall's studies at the time of discovery of these satellites of Mars plainly evinced that the western elongation of Phobos was then noticeably greater than its eastern. This variation can be accounted for only by the revolution of the orbit itself.

**Polar Regions of Mars.**—Between the years 1781 and 1783 Sir William Herschel noticed that the polar snow caps of Mars waxed and waned with the Martial seasons, increasing as the winter advanced, and diminishing with the progress of summer, but, until October, 1894, they have never been known to entirely disappear. Sir William found that while the north cap had its center exactly at the north pole of the planet, that of the southern cap was 6 or 8 degrees from its south pole; hence, when the southern ice cap is very small, which is always the case during summer in the southern hemisphere, it does not centrally cover the pole, but lies to one side of it. During the opposition of Mars in 1894 the white cap was seen very irregular in form, then portions became detached from the main body, and, later, all melted away and disappeared. Prof. Campbell, of the Lick Observatory, who has been a student of Mars, says that\* on July 19, 1882, an intensely white spot was seen partly detached from the main cap, but projecting beyond it. When, two years later, on July 10, 1894, it was observed the southern summer of Mars was more advanced, the cap, grown smaller, had left the white spot behind, detaching itself entirely by Aug. 15, and disappearing from view a little later. As there are four of these spots at the edge of the cap where the melting of the snow was retarded, both in 1892 and 1894, Prof. Campbell concluded that they are the snow-covered tops of high mountains, on which, of course, the snow would melt and disappear later than at lower altitudes.

**Atmosphere of Mars.**—Prof. Campbell doubts the existence of an atmosphere on Mars, but the revelations of the spectroscope in the hands of other and equally efficient observers are opposed to him regarding this particular.

**Jupiter.**—For the ascertainment of his size, his rotational period, the nature and cause of his belts and white and dark spots, the reason of the

dark transits of some of his satellites, and of their sometimes "square-shouldered" appearance and, again, their duplex seeming, like a double star, much study has been evoked; but while some of the mysteries of the giant planet have been solved, yet many secrets are still locked in this massive world.

In the account of his measures of the diameter of Jupiter, Dr. Barnard calls marked attention to the discrepancy between those made by the aid of the filar micrometer and those of the heliometer, the former giving a diameter about 1" greater than the latter. This he attributes to the defective images formed by the divided halves of the object glass, and hence he concludes that for planetary diametrical measurements the heliometer is a defective instrument. The mean of all his measures gives (at distance 5.20, the Earth's distance being taken as unity)  $90,190 \pm 56$  miles as the equatorial diameter, and  $84,570 \pm 75$  miles as the polar diameter, the polar compression being  $\frac{1}{1698}$ .

**Mass of Jupiter.**—"Astronomische Nachrichten," No. 3249, has an article by Prof. Simon Newcomb which embodies much valuable information on this subject. He says: "The following table shows the values and the relative weights to which I have judged each one entitled. I do not deem it necessary at the present time to give in all detail the considerations which led to the adoption of these weights. I may remark, however, that Von Haerdtl's excellent result from the perturbations of Winnecke's comet, which has by far the smallest probable error of any determination yet made, has not been assigned a corresponding weight because of a distrust on my part whether observations on a comet can be considered as having always been made in the center of gravity of a well-defined mass moving as if its center were a material point subject to the gravitation of the Sun and planets. This distrust seems to me to be amply justified by our general experience of the failure of comets to move in exact accordance with their ephemerides. The mass of Jupiter, from all observations on the satellites,

	= 1047.82, weight = 1.
Action of Fay's comet	= 1047.79, " = 1.
" " asteroid Themis	= 1047.54, " = 5.
" on Saturn	= 1047.38, " = 7.
" " asteroid Polyhymnia	= 1047.34, " = 20.
" " Winnecke's comet	= 1047.17, " = 10.
Weighted mean	= 1047.35.

**Jupiter's Third Satellite.**—As a test of the correctness of Prof. W. H. Pickering's theory of the elongation of the disk of the third satellite of Jupiter, Dr. Barnard, with the 36-inch telescope of the Lick Observatory, has subjected this Moon to a rigid examination, with the result that, with all powers up to 1,000 diameters, the satellite remained perfectly round, even when the eye was put into different position angles. The usual markings were seen, but no distortion of the disk was observed at any time, with any power, and under the best conditions of seeing.

**Dark Transit of Satellite III.**—On Feb. 8, 1895, as observed at Greenwich, this satellite passed on to the disk of the planet at 7<sup>h</sup> 3<sup>m</sup>. At 7<sup>h</sup> 30<sup>m</sup> it was invisible. At 8<sup>h</sup>, and until about a half hour before egress, it was seen as a dark,



circular spot. This is a frequently observed phenomenon, but the cause of its blackness, even in direct sunshine, is a profound mystery.

**Orbit of the Fifth Satellite of Jupiter.**—M. Tisserand reports the results of his researches on the orbit of the minute satellite of Jupiter, discovered Sept. 9, 1892, by Dr. Barnard, of the Lick Observatory. In his investigations he has used a circular orbit, a fixed elliptic orbit, and a variable elliptic orbit, the last method giving greatest satisfaction. The eccentricity of the orbit is very small, equaling about 0.01, making the ellipse almost a circle. Owing to the equatorial protuberance of Jupiter, the major axis makes a complete revolution in the astonishingly short period of five months.

**Diameter of the Satellites of Jupiter.**—These satellites have been subjected to filar micrometer measures by Dr. Barnard, using the 36-inch glass with a power of 1,000. Unless the night were exquisite enough to permit the employment of this power and give distinctly defined disks, no measures were attempted. In every case the measurements were made by the method of double distances, 3 to 4 settings both before and after the reversal of the wires being employed. The great power and the large scale of the 36-inch equatorial render it very suitable for the determination of very small quantities, as, for instance, the diameters of the larger asteroids, the satellites of Jupiter, etc., always using the full aperture of the telescope:

Satellite I	= 1.048" = 2,450 miles.	8 nights.
" II	= 0.574" = 2,045 "	8 "
" III	= 1.521" = 3,558 "	10 "
" IV	= 1.430" = 3,345 "	9 "

**The "Red Spot" of Jupiter.**—Between November, 1894, and March, 1895, as observed at Greenwich, this object was carefully examined whenever visible. It was never easily or distinctly seen. No color was noticed in it, it being simply an elliptical outline. Best views of it were usually had before and after it had passed the central meridian.

**Saturn.**—In 1894, during the opposition of Saturn, Dr. Barnard made a long series of observations, extending from February to July, with the 36-inch refractor of the Lick Observatory, of this planet, its rings, and its satellites. They confirm in a remarkable degree the prior measures of Prof. Asaph Hall with the 26-inch refractor of the Naval Observatory, Washington, D. C., from 1884 to 1887. These harmonizing observations of the two astronomers would indicate that no change has occurred in the Saturnian system since the first systematic measures were taken, and negative the assertion once made by a distinguished astronomer, that the rings were approaching the planet and would, in a few years, coalesce with it. One conclusion arrived at was that, contrary to some former assertion, the center of the planet was in the optical center of the ring.

The black and white spots alleged to have been seen on the planet by small telescopes were never found either with the 12-inch or the 36-inch telescope, though carefully sought for, and he is confident they do not exist. The outer edge of the inner crape ring appeared to unite with the inner edge of the middle bright ring. No spots or markings of any sort were seen on

the crape ring, nor was its inner edge serrated, as some users of small instruments have claimed.

The following are the micrometrical equatorial measurements of the planet, the result of twelve nights of observation, from March 25 to June 25, 1894, reduced to mean distance, equaling 9.538861, Earth's distance = 1.00. Corrected for phase:

Equatorial diameter in arc	= 17.744" = 76,150 miles.
Polar " "	= 16.307" = 69,980 "
Polar compression	= 6 170 miles,

or, in simplicity, 6,170 miles shorter in diameter from pole to pole than through its equator, while the Earth's polar axis is but  $26\frac{1}{2}$  miles shorter than its equatorial diameter.

**Saturn's Rings.**—The announcement by Prof. J. M. Keeler, of Allegheny Observatory, Pennsylvania, that by the spectroscope he had obtained proof positive that the rings of Saturn are composed of countless millions of minute satellites (a fact long suspected) has awakened renewed and widespread interest in the unique system of this wonderful world. When it became known that its rings were multiple, then arose the question of what are they constituted, and are they solid or liquid, or formed of discrete particles, analogous to the tails of comets or the rings of meteors which surround the Sun? The theory held by many astronomers was that, if solid, they could not remain intact, as the great centrifugal force experienced would tear them asunder, even if of the strength of steel. This spectroscopic evidence, which is indisputable, that they are neither gaseous, liquid, nor solid, must put to rest all speculation, Prof. Keeler having demonstrated the correctness of the conclusions previously reached by many astronomers.

If the spectroscope be pointed to the Sun's center, which has no motion to or from us in the line of sight, the lines will occupy the same positions as those produced in the chemist's laboratory by raising to incandescence the substances producing the solar lines. When, however, it is aimed, say, at the upper limb of the Sun, which by his rotation is approaching us, the lines are moved toward the violet end of the spectrum, but if, on the other hand, it be directed to the Sun's lower limb, which is moving from us, the same lines are deflected toward the red end of the spectrum. Now, if the ring of Saturn be a solid, the outer edge, being larger than the inner, should move the faster, but if it be composed of minute satellites the inner ones, being nearer the planet, will move more swiftly, for the same reason that Mercury's orbital motion is faster than that of Venus, and that of Venus faster than that of the Earth, etc. This simple reasoning explains the nature of Prof. Keeler's discovery, which is, that the inner edge of the ring moves faster than its outer. By well-known spectroscopic processes Prof. Keeler has ascertained that the inner edge must move at the rate of 13.06 miles per second, and its outer edge 10.65 miles.

During the same opposition of Saturn in which Prof. Keeler achieved his wonderful discovery Dr. Barnard made a prolonged series of micrometrical measurements, of which the annexed table is the result:

Outer diameter of outer ring,	40°249' = 172,730 miles.
Inner " " " "	34°864' = 149,620 "
Outer " " middle ring,	33°748' = 144,830 "
Inner " " " "	25°522' = 109,580 "
Inner " " crape " "	21°035' = 90,260 "
Width of division between outer and middle ring, 0°553'	= 2,395 "

These measures agree so closely with those of Prof. Hall in the years 1884 and 1887 as to inspire much confidence in their accuracy.

The division or space between the outer and middle ring is, from its discoverer, called the Cassini division. The outer ring has occasionally been seen to be divided also, and this separation has been named the Encke division.

**Diameter of Titan.**—This, the largest of Saturn's satellites, is the only one of his 8 moons which can be subjected to successful micrometrical measurement. Dr. Barnard has given much time to this object, but it seldom happened that the atmosphere was sufficiently steady for it to present a well-defined disk, without which, of course, no measures could be made. When the disk was observable a magnifying power of 1,000 diameters was used, and the subjoined result obtained, it being the mean of the observations of the year 1894, on May 6 and 7, June 18 and 25, and July 2: Diameter, = 0°606' = 2,523 miles. This is a smaller diameter than that usually assigned to Titan, and indicates a density about 5·2 times as great as that of its primary, Saturn's density being equal only to that of ordinary pine wood.

**Diameter of Neptune.**—In the "Astronomical Journal" (April 9, 1895), Dr. Barnard writes of the diameter of this, the most distant known planet, and of his employment upon it of the 36-inch telescope with, generally, a power of 520, though on one or two occasions using a power of 1,000 diameters. Save in a single case the disk always appeared round, while in the observations of Uranus the disk was ever decidedly elliptical. Following are the results of the work of ten nights reduced to the mean distance from the sun = 30·0551, in terms of the Earth's mean distance = 1:

Diameter in arc	= 2·433''
Diameter in miles	= 32,900

**Asteroids.**—The exact number of these small planets lying between Mars and Jupiter is not known, but, excluding those only once seen, and therefore without calculated orbits, it is not far from 404. Twenty-one have been found since last year's report, as follows:

388 BA	Mar. 7, 1894	Charlois.
389 BB	" 8, "	"
390 BC	" 24, "	Bigordan.
BD	Nov. 1, "	Wolf (orbit unknown).
391 BE	" 1, "	Wolf.
392 BF	" 4, "	"
393 BG	" 4, "	"
394 BH	" 19, "	Borelly.
395 BK	" 30, "	Charlois.
396 BL	Dec. 1, "	"
397 BM	" 19, "	"
398 BN	" 28, "	"
BO	Apr. 9, 1895	Roherts (orbit unknown).
399 BP	Feb. 28, "	Wolf.
BQ	" 23, "	Wolf (orbit unknown).
400 BU	Mar. 16, "	Charlois.
401 BT	" 15, "	Wolf.
402 BW	" 21, "	Charlois.
403 BX	May 18, "	"
404 BY	July 23, "	"
CA	" 23, "	"
CB	Aug. 22, "	"

Since the last record names have been given to

318	Magdalena.	344 = M	Desiderata.
319	Leona.	369 = AE	Æria.
381	Etheridgia.	384 = AV	Burdigala.
384 = L	Chicago.	392 = BF	Wilhelmini.
386 = D	Lacadicera.	401 = BT	Ottilia.

Over one hundred of these tiny planets are nameless.

The planet BE has an interesting orbit, and, in contrast to nearly all the others, may prove of some practical value to astronomers. With the possible exception of 323 (Brucia), its perihelion distance is the smallest of the entire family, being but 1·60. Its least distance from the orbit of Mars is only 21,000,000 miles, and from that of the Earth but 63,000,000. It is therefore well adapted for the determination of the solar parallax, as when in opposition and on the meridian at midnight, being in the telescope but a minute point, it is of far greater accuracy for the ascertainment of the Sun's distance than a transit of Venus.

**Encke's Comet,** with a period of only 3·3 years, was detected by M. Perrotin on Nov. 1, 1894, at the Nice Observatory, France. This is the most interesting of all the short-period comets, not only because its time of revolution is the shortest, but because of its near approach to the planet Mercury, thus affording the most reliable data known for determining the mass of that planet. In 1891 it came quite near the planet, and gave opportunity for a long series of observations, from which the most trustworthy value for Mercury's mass ever assigned was deduced. Its periodic time at each return is found diminished by about two and a half hours, which fact has caused much speculation and wonder, and is yet an unsolved problem. The theory regarding this retardation which has most adherents is that it is caused by the resistance of the hypothetical, all-pervading ether, and this retardation of its motion shortens its periodic time.

**Comet IV 1894** was discovered on Nov. 20 by Edward D. Swift, assistant astronomer at the Lowe Observatory, Echo Mountain, California. It was detected with a 16-inch refractor, and, having passed perihelion, was an exceedingly faint object. A very faint, short tail was perceptible. A computation of its orbit from three positions showed it to be not only an elliptic comet of short period, but, also, that its elements were almost identical with the lost comet of De Vico, discovered in 1844, with a computed period of about five and a half years, which had not again been seen until this finding by Swift. Though possible, it is exceedingly improbable that two comets should possess nearly the same elements, and astronomers are agreed that this new comet is a return of De Vico's to perihelion, which must have happened nine times without detection.

The observations and measurements of this comet by Dr. Barnard, who followed it with the great telescope until Jan. 29, 1895, were of great value in computing a more exact set of elements.

From all observations, Dr. Chandler, of Cambridge, Mass., has computed the following elliptic elements, and for comparison the elements of De Vico's comet, by Brunow, are given:



COMET (e) SWIFT.

Perihelion passage, 1894, Oct. 12<sup>h</sup> 18<sup>m</sup> 17<sup>s</sup>, Greenwich mean time.  
 Node to perihelion =  $296^{\circ} 34' 35.2''$   
 Longitude of node =  $48^{\circ} 44' 37.1''$   
 Inclination =  $2^{\circ} 57' 53.9''$   
 Log. of perihelion distance = 0.1486451  
 Eccentricity = 0.571895  
 Period = 5.8633 years = 2141.6 days.

DE VICO'S COMET.

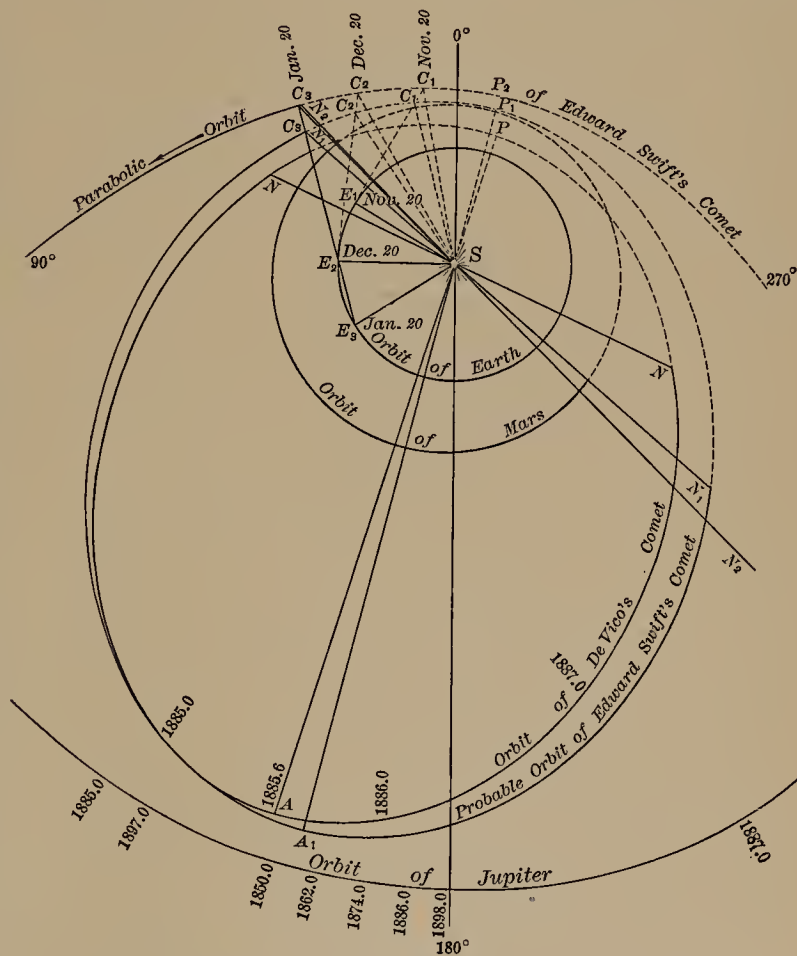
Perihelion passage, 1844, Sept. 2.484.  
 Longitude of perihelion =  $342^{\circ} 30' 48''$   
 Longitude of node =  $63^{\circ} 49' 38''$   
 Inclination =  $2^{\circ} 54' 46''$   
 Perihelion distance = 1.18632  
 Eccentricity = 0.61737

In comparing these elements, which agree quite closely, the greatest difference will be found in longitude of node and perihelion distance. Notwithstanding the slight apparent difference of orbit, the following diagram will show their agreement, and that the comet is identical with that of De Vico is almost without doubt. If this be so, then the latter comet during the fifty years it was lost must have been subjected to some greatly perturbing influence besides the Sun, which could not have been other than that of the giant planet Jupiter, near which it passed in 1885, when the approach was so close (see diagram) that both objects, for two years not only moved in the same direction, but also in nearly parallel paths. This long-continued attractive power of Jupiter was sufficient to change the orbit of De Vico's comet into that of Comet Swift.

An inspection of the drawing will show that the long-lost comet's orbit runs also close to that of the planet Mars, and that in the distant future, when the comet itself shall travel thither, it must encounter another disturbing force and be again diverted into a new orbit. Its next near approach to Jupiter will occur in 1897, when it must again be greatly perturbed or, perchance, again lost.

**Brorsen's Comet.**—This periodic comet, which was discovered in 1846 and has a period of 5.8 years, is now due, but, because of its proximity to the Sun, it has not yet been detected, and very probably it may not be seen at all. As it was not found at its last apparition, though it was favorably situated for visibility, it may have shared the fate of the disintegrated comet of Biela.

**Comet 1894 II (Barnard).**—This comet, whose period—five and a half years—is just expiring, has not of a surety been detected, though sought for with great assiduity, particularly at the Lick and Lowe Observatories. At its return in 1890, as was expected, it eluded observation also. On the morning of June 30, Dr. Swift, of the Lowe Observatory, observed not very far from the comet's ephemeris place a very faint cometary-looking object which he took for a nebula, as Sir William Herschel had several near. Returning to it on July 4, he found the body missing, and came to the conclusion that it was the much desired Barnard comet of which he had had a view, but which long-continued effort failed to refind. Owing



ORBITS OF VICO'S AND SWIFT'S COMETS.

to the position of its orbit the comet can not be again seen until 1906, its detection in 1901 being improbable. The approximate place of the suspected comet on June 30 was right ascension  $1^{\text{h}} 20^{\text{m}} 45^{\text{s}}$ ; declination north  $2^{\circ} 55'$ .

**Comet 1895 a (Swift).**—On the morning of Aug. 20, Dr. Lewis Swift, Director of the Lowe Observatory, discovered a very faint but rather large comet in right ascension  $0^{\text{h}} 27^{\text{m}} 40^{\text{s}}$ ; declination north  $5^{\circ} 30'$ . It had a very slow motion in a northeasterly direction. Following are its elements computed by Prof. Lewis Boss:

Time of perihelion	= $T$	= Aug. 20-75426
Longitude of perihelion	= $\pi$	= $338^{\circ} 0' 26.1''$
Longitude of node	= $\Omega$	= $170^{\circ} 18' 6.8''$
Inclination	= $i$	= $3^{\circ} 0' 11.1''$
Eccentricity	= $e$	= 0.652608
Mean daily motion	= $\mu$	= $491.590''$
Semimajor axis	= $a$	= 3.73452
Period	=	= 7.22 years.

Dr. Berberich's determination of its period is 7.06 years. This comet proves to be another of the Jupiter family of comets, which now numbers 20. They are so called because of the change of original orbit by the attraction of that great planet's mass as they journeyed to the Sun. Save Halley's, all the known periodic comets move direct, and all but that one belong to the Jupiter group.

**Fay's Periodic Comet.**—This comet was detected on Sept. 26, 1895, at the observatory of Nice, France, in right ascension  $21^{\text{h}} 8^{\text{m}} 11.5^{\text{s}}$ ; declination south  $1^{\circ} 54' 11''$ . Though it has passed the point nearest to the Earth, it will not arrive at perihelion until March, 1896, and therefore it ought, in strictness, to be included in the list of comets of that year.

**Total Eclipses of the Moon.**—On March 10, 1895, there occurred a total eclipse of the Moon visible from both continents. During the various stages of its progress it exhibited phenomena of great interest. In coloration, the density of the shadow, and the semiobscuration of the Moon during totality it bore a great resemblance to its last return, also total, in 1877. Several attempts to photograph—with both short and long exposures—the Moon during the total phase, proved abortive. One exposure of an entire minute photographed only one faint, neighboring star. One conspicuous feature of the eclipse was the extraordinary brightness of Aristarchus, for which its general high albedo seemed hardly to account.

**Eclipse of Sept. 3 and 4, 1895.**—This total eclipse of the Moon was a return of that of Aug. 23, 1877. In general appearance to the naked eye it was very similar to that of March 10, 1895, but with the telescope several marked differences were observable. Aristarchus, which then glowed like a diamond, attracting universal attention, was very faint and inconspicuous. At the Lowe Observatory, a phenomenon never before observed by the writer—but visible to many on this occasion—was seen; the upper portion of the Moon was of a pale but decided blue color, its upper boundary convex, agreeing exactly with the convex arc of the Moon's limb, and the chord perfectly straight—not concave like the new Moon's narrow crescent. The length of the versed sine was about  $\frac{1}{5}$  of the Moon's diameter. This feature was nicely observable with field and opera glass and with the  $\frac{3}{4}$ -inch finder of the telescope, but was less distinct, though easily seen, in the great telescope itself.

The chief value to astronomy of a total lunar eclipse is the determination of the times of occultation of stars by the lunar disk during totality. Both limbs of the Moon being then similarly illuminated, by observation of disappearances and reappearances of stars occulted the ascertainment of the Moon's diameter freed from the effects of irradiation is made possible. Also, from diminution of the Moon's light, much fainter stars may then be seen near the disk than

at other times. At Greenwich Observatory 137 observations of disappearances or reappearances were recorded by the eleven observers who watched the progress of the eclipse. Of this number of observations 124 were pronounced good. In observing an occultation, the time could be estimated to about the tenth of a second.

The ruddiness of the Moon when totally immersed in the Earth's shadow can, of course, be understood, but no satisfactory reason has yet been given for the great variation in color and brilliancy in different eclipses. Even when happening under similar circumstances, there is still wide difference in the amount of luminosity of the eclipsed Moon.

The faintness of the Moon during totality is much underrated. Prof. W. W. Pickering, in the total eclipse of 1887, estimated the eclipsed Moon to be as much fainter than the uneclipsed as the latter was fainter than the Sun. This must be an extreme view, however, as the best authorities make the Sun 700,000 times as bright as the Moon.

With regard to the Moon's spectrum very little has been accomplished. The atmospheric bands seemed so intense and broad that they practically ran one into another, and observers simply got the two ends of the spectrum cut off.

**Variable Stars—Algol.**—Dr. S. C. Chandler explains the periodic variations in the intervals between its minima by supposing that the bright star with its eclipsing dark companion revolves around a distant center of gravity, determined by its relation to another dark body, during a period of 130.91 years. M. Tisserand considers that they are caused by changes in the line of apsides due to a polar compression of Algol. This hypothesis requires considerable variation in the duration of the minima; Dr. Chandler's, that there should be a periodic inequality in the proper motion of Algol. In "Astronomical Journal," No. 343, Prof. Lewis Boss, of the Dudley Observatory, at Albany, N. Y., gives a list of observed positions of Algol and of 13 comparison stars for 1895.0, for the determination of the truth or falsity of Chandler's hypothesis. If correct, the apparent orbital motion of Algol is now little less than at its maximum, and it will so continue for nearly twenty-five years, within which time it would be possible to truly determine the question.

*The variability of Z Herculis* was discovered by Dr. Chandler, in July, 1894, who regarded it as a variable of the Algol type, with a period of  $3^{\text{d}} 23^{\text{h}} 50^{\text{m}}$ . Its variability was detected by Hartwig also, who assigned it a period of only  $1^{\text{d}} 23^{\text{h}} 55^{\text{m}} 40^{\text{s}}$ . As, however, a minimum on Sept. 20 did not occur at the time indicated by either of these periods, Prof. Dunér concludes that the star is of the V Cygni type with unequally bright components, and that the faint and very bright alternate in periods of forty-seven and forty-nine hours. The hypothesis demands that Z Herculis consists of 2 stars of equal size, one of which is twice as bright as the other; that they revolve around their center of gravity in an elliptical orbit whose semimajor axis is six times the diameter of the stars; that the plane of the orbit passes through the Sun; that the eccentricity is 0.2475; and that the line of apsides is inclined



at an angle of 4 degrees to the line of sight. In this orbit the stars revolve in  $3^d\ 23^h\ 48^m\ 30^s$ . Evidently Z Herculis forms the hitherto missing link between stars of the Algol and V Cygni types. The star for 1900.0 is in right ascension  $17^h\ 54^m$ ; declination  $+15^\circ\ 8'7''$ .

*S Corona*.—When nearing minimum the nebula surrounding this star has again been seen. On Nov. 15 this variable was a stellar point in the center of a faint nebula, but on the 25th the stellar point had vanished and only the nebula remained. Unfortunately the star was then too near the Sun for its reappearance to be observed. The star for 1900.0 is in right ascension  $15^h\ 17^m\ 19^s$ ; declination  $+31^\circ\ 43'6''$ .

*R Cygni*.—At minimum, the nebula about this star was well seen. The star was invisible on Dec. 30, 1893. On Jan. 23, 1894, a nebulousity was suspected in its place. On Feb. 13 the very faint, diffuse, bluish nebula was certainly seen, as also on the 21st. The nebula on March 6 was very faint, with a suspicion of a condensed center, suggesting the reappearance of the star, and on March 24 the star was a minute but well-defined point, of the 12.1 magnitude, without any nebulousity. This is the first instance in which these curious changes could be watched in their entirety, and were made by Cuthbert E. Peek at the Rousdon Observatory, England. The star for 1900.0 is in right ascension  $19^h\ 34^m\ 8^s$ ; declination  $+49^\circ\ 58'5''$ .

An examination of the photographs of stellar spectra taken at Arequipa, Peru, forming part of the Henry Draper Memorial, has resulted in the discovery of 11 new variables with spectra of type III with the hydrogen lines bright.

Gould's "Astronomical Journal" for the current year has much valuable variable-star literature. In No. 347 is a revised supplement to his second catalogue of variables by S. C. Chandler. No. 339 contains an ephemeris of variables of the Algol type by P. S. Yendell. Catalogues, notes, etc., of variable stars of both short and long period, by H. M. Parkhurst, E. F. Sawyer, and others are found in Nos. 338, 346, and 350, to which the reader is referred.

*Nova Auriga*.—This, says Dr. Barnard, is still visible as a small star without change in physical appearance since 1892. Comparison with 2 neighboring stars shows conclusively that there has been no perceptible motion in the Nova for two years. This fixity is surprising because of the enormous velocity in the line of sight assigned to the star by spectroscopic observation. Its spectrum is that of the nebula. Its place for 1900.0 is right ascension  $5^h\ 25^m\ 35^s$ ; declination  $+30^\circ\ 21'\ 27''$ . Its present magnitude is 9.7. It has been named T Auriga. In appearance it is a faint stellar point involved in a somewhat dense nebula.

Similar to the Auriga Nova in its spectrum characteristics is Nova Normæ, the place of which for 1900.0 is right ascension  $16^h\ 22^m\ 12^s$ ; declination  $-50^\circ\ 1'8''$ . This too, as also Nova Cygni, gives the nebula spectrum, and all have the same life history.

**Photographic Stars.**—Prof. J. M. Schaeberle, of the Lick Observatory, has been comparing the magnitudes of the faintest stars visible on Dr. Max Wolf's photographic plates with the faintest visual magnitudes in the 36-inch

telescope at Mount Hamilton. Taking the sky in the region of Algol, and using one of Dr. Wolf's enlarged silver prints in comparison, he was surprised to find that, with an exposure of five hours, the photograph revealed stars down to the 16.5 magnitude. As the photograph was taken at the level of the sea and with a small telescope, and as a star of the seventeenth magnitude is at the limit of vision of the 36-inch glass, Prof. Schaeberle concludes that Dr. Wolf, with his relatively small telescope, can, with an exposure of five hours, photographically chart stars down to the seventeenth magnitude, or those as small as the giant refractor of the Lick Observatory will show visually.

**Faint Star near Alpha Centauri.**—Mr. Walter F. Gale, of Paddington, New South Wales, has noticed an eleventh-magnitude star, about  $70''$  preceding our nearest stellar neighbor, Alpha Centauri, at position angle  $272^\circ$ . He is not aware of any previous observation of the star, which is not now visible, owing to its proximity to the bright star. If unconnected with the system, its distance twenty years hence, because of the proper motion of Alpha, will be very small. As the angle and distance do not oppose such an hypothesis, the remote possibility of the faint star being connected with Alpha, making it a triple system, renders it of special interest. He thinks that the best investigations of the orbit of Alpha Centauri have been made by Profs. Gill, Elkin, and See, though their determinations fail to satisfy the most recent measures, the companion being a few degrees in advance of the computed place.

**Spectra of Stars.**—The annual report of Prof. E. C. Pickering, Director of Harvard College Observatory, ending Sept. 30, 1894, contains a digest of much valuable work done with the varied instruments at his command. The Henry Draper Memorial is fruitful in good works, 1,657 spectra having been photographed with the 8-inch Draper telescope, and 1,708 with the 8-inch Bache glass in Peru. All the plates have been examined by Mrs. Fleming, resulting in the discovery of eleven variable stars whose spectra show the hydrogen lines. In addition to the above, 912 photographs have been taken with the 11-inch Draper telescope. Of these, 59 out of the 340 photo-spectrographs of Zeta Ursæ Majoris and 47 out of 65 of Beta Aurigæ have been found periodically to have double spectral lines. These stars are termed photo-spectroscopic binaries, and the investigation of their duplex character is far beyond the reach of any visual telescope. Their periods of revolution are four and eight days respectively.

**Nebulous Region in Orion.**—Dr. Roberts's splendid photographs of the great nebula in Orion, so much talked of in late years, have not by any means exhausted the wonders of that remarkable region. Dr. Barnard also has secured not only photographs of the giant nebula itself, but of the space surrounding it, indeed, of the entire constellation, using for the purpose not a telescope, but a camera of his own construction, with the object glass of a magic lantern giving a field 30 degrees in diameter, about one half of which was flat. His negatives portray an enormous curved nebulousity encircling the belt and the great nebula covering a large portion of

the body of the giant. The mass, which seems to be of a spiral nature, starts from a little to the west of Eta, and, involving 29, passes to the north of Kappa, whence it trends nearly due north for a considerable distance, when, turning sharply toward the west, it passes Gamma and involves 38. An outlying section curves around Rigel, making the extreme diameter of the nebulous region 14 or 15 degrees in magnitude and surpassing anything hitherto photographed in the heavens.

Something similar in appearance was previously depicted on a negative taken in southern California by Prof. W. H. Pickering. Hence the thing seen can not be ascribed to fogging of the plates or any accidental cause. Photography only can make apparent to the sense of sight such delicate, almost spiritual, films.

**Proper Motion of Nebulæ.**—Assuming that no body in the universe is absolutely at rest, the nebulae, like the stars, must have their proper motions. Prof. Keeler has determined by the spectroscope that the great nebula in Orion, and doubtless all its appendages, are moving in the line of sight away from the Earth at the rate of 11 miles per second.

It was formerly supposed, and the identity strongly contended for, that the principal nebular line was identical with the magnesium fluting, but Prof. Keeler has proved that this is not the case. He has determined the wave length of the principal line to be  $5,007.05 \pm .03$  tenth metres, and that of the second to be  $4,959.02 \pm .04$  tenth metres, whence it follows that neither of these lines coincide with any known terrestrial element. The third nebular line is the  $H\beta$  one of hydrogen. From the displacement of this latter line Prof. Keeler deduced the motion of Orion as noted above. In like manner he showed  $\Sigma VI$  to be approaching us at the rate of about 6.5 miles a second, and that No. 4373, General Catalogue of Nebulae, has the greatest approaching velocity of any nebula known, amounting to 40.2 miles per second. Also that No. 6790, New General Catalogue, has the greatest velocity of recession, equal to 30.1 miles a second. Among other noteworthy results of his observations may be mentioned that the spectrum of the bright-line nebula indicates either a high temperature of the gases emitting the light or a state of strong electrical excitement, and that both temperature and pressure are greatly increased at the nucleus.

In "Harvard Observatory Annals," Part I, Prof. E. C. Pickering states that no clear indications of change of shape or of brilliancy have been noted in the nebula within the last ten years by photographing it through a thin perforated sheet of brass placed in contact with the sensitive film.

The image obtained with the prism placed in front of the object glass corresponding to the  $H\gamma$  line is found to resemble most closely the ordinary photographs, and wave length 372 is found very strong in the southeast border of the Huyghenian region. He gives reasons for supposing the parallax of the nebulae to be not greater than  $0.003''$ , corresponding to a distance that light would require a thousand years to move over.

Prof. Pickering has constructed a chart of the

nebula showing isophotal contours which will be valuable in subsequent researches of the variability of the nebulae.

**Photographic Nebulae.**—For several years it has been known that the cluster of the Pleiades or the Seven Stars, as it is popularly called, is filled with scattered patches of nebulae. The Merope nebula, discovered in 1859 by Prof. Wilhelm Tempel, is the only one conspicuously visible in the telescope, but photography reveals the presence of several others. The entire constellation seems to be a mixture of stars and nebulae.

Dr. Barnard, thinking he had observed signs of nebulosities outside of and surrounding the group, subjected his surmise to photographic proof. The exposure lasted for ten hours and fifteen minutes, and the resulting picture showed a number of singular curved and streaked nebulosities extending all around the cluster. Some of these wispy streams extend irregularly on each side of the cluster, especially toward the east, for several degrees. The photographic plate shows that for a considerable distance to the north is a region singularly devoid of small stars, but filled with large masses of very diffuse nebulosity. The discovery is important as showing that the photographic nebulae may surpass the telescopic in extent and numbers.

In course of his photographic study of the Milky Way he has discovered a magnificent nebula of vast proportions in Scorpius, connected apparently with many of the bright stars in the neighborhood, including Antares and Sigma Scorpii. The latter has a large, diffused mass of nebulosity reaching northward which can be traced on the photograph to a connection with brighter nebulosity about Rho Ophiuchi.

**Variable Nebulae.**—There has been long disputation regarding the variability of nebulae. From observations at the Lick Observatory by Profs. Burnham and Barnard it appears that Tau Tauri is involved in nebulosity, that Hind's celebrated variable nebula was only just visible with the 36-inch telescope, and that Struve's nebula close by can not be seen at all.

The history of Hind's nebula is too long for insertion here and too interesting to be entirely foregone. In "Chambers's Handbook of Astronomy" the record of its discovery, its disappearance, and final reappearance may be found. A faint star in close proximity to this nebula varies in brightness also, and adds to the interest already attaching to the nebula.

**Photograph of H. I. 84.**—This nebula, which is No. 3249 of the General Catalogue, has been photographed by Isaac Roberts with his 20-inch reflector. This is described by Lord Rosse as very large and very bright, its center like an elongated nebula with nucleus, and enveloped in an irregular ring or rings of nebulous light. He thought it spiral in form, but the photograph does not so present it, and shows the nucleus to be a nebulous star of the twelfth magnitude. Surrounding the nucleus at a great distance is a well-defined ring, and in this ring several star-like condensations of nebulosity are involved. Outside this ring, but symmetrical with it, is another and fainter one, and beyond this latter are indications of still another very faint ring.

Mr. Roberts has photographed H. I. 143 =



General Catalogue No. 3356, which in shape resembles the letter D, though thought by Lord Rosse to be spiral. Many other nebulae which this astronomer deemed spiral in form are not so depicted upon photographic plates.

**Variation in Latitude.**—When a very few years ago the suspicion was expressed that terrestrial latitudes undergo cycling variation, the thought was received with incredulity by a large majority of astronomers; but the researches of Dr. S. C. Chandler have raised to the rank of a demonstrated fact that what is known astronomically as the instantaneous pole of the Earth's rotation revolves about that of its axis of principal motion at an angular distance of  $0.2''$  from west to east in a period of four hundred and twenty-seven days.

Shortly after Dr. Chandler's announcement of the four hundred and twenty-seven days' period of revolution of the Earth's axes of figure and rotation Prof. Newcomb suggested that if such a phenomenon existed it should cause a synchronous oscillation in the mean sea level, and that possibly it might be detected by a careful study of the tidal observations of the United States Coast Survey. Acting on this suggestion, the superintendent authorized Dr. A. S. Christie, the head of its tidal division, to make such an examination. He chose the observations at two mareograph stations near San Francisco, Cal., and in February, 1892, communicated his results in an official report. He found from a thirty-five years' series a tide with a period of 437.4 days and a semi-amplitude of 17.3 millimetres. Immediately thereafter Dr. Christie undertook the reduction of the Coast Survey tidal observations in Penobscot Bay, Maine, from 1870 to 1888, and found, similarly, a tide with a period of 424.9 days and a semi-amplitude of 12.5 millimetres. Combination of the two series gave a mean period of  $431 \pm 4$  days, and a mean semi-amplitude of 15 millimetres or 0.59 inches.

The phase epochs from these tidal investigations show in a remarkable manner the harmony between the results of tidal and astronomical observation which can hardly be regarded as fortuitous. Dr. Chandler's paper on this subject may be found in "Astronomical Journal" of Aug. 15, 1895.

**Simultaneous Visibility of Six Major Planets.**—For several evenings during the month of June, 1895, six planets were visible at the same time. On one occasion the director of the Lowe Observatory saw in the evening sky within a single minute of time the planets Jupiter, Mercury, Mars, Venus, Saturn, and Uranus, the latter through the telescope, of course. It was an extraordinary happening, not to be repeated in many years. Mars, which but a few months before shone with such brilliancy, had diminished to the faintness of a third-magnitude star, but its redness was in striking contrast to the white light of Venus.

**Unification of Time.**—The joint committee of the Astronomical Society of Toronto, Canada, on the unification of astronomical, civil, and nautical days, have communicated with the astronomers of all countries for the ascertainment of opinion regarding the desirability of such change. A majority in the following-named countries declare in its favor: Austria, Aus-

tralia, Belgium, Canada, Columbia, England, France, Greece, Italy, Ireland, Jamaica, Madagascar, Mexico, Roumania, Russia, Scotland, Spain, and the United States.

Opposed to this change were Germany, Holland, Norway, and Portugal. Switzerland was neutral.

The system of changing time by entire hours, first inaugurated in the United States, is being adopted by many other countries. On Feb. 1, 1895, the plan went into effect in Australia, making the relation to Greenwich time, as follows: West Australia, eight hours; South Australia, nine; and all the other provinces ten hours ahead. At Sydney, under the new system of uniform standard time, it was necessary only to set the timepieces back less than five minutes.

**Astronomical Publications.**—"Astronomical Journal," Nos. 300, 319, and 347, publishes a list by Dr. Chandler of 344 variable stars with magnitudes, both of maxima and minima, the names of their discoverers, and much other important information. It is complete up to June 19, 1895. Both this table and the first and second catalogues of variables should be in the hands of all workers on this class of stars.

**Cordoba Durchmusterung, Part II.**—This second part of the important undertaking of the Argentine National Observatory at Cordoba, Argentine Republic, during the years 1885 to 1893 has recently been published as Vol. XVII of the "Results of the Observatory." It contains the positions and magnitudes of 160,415 stars, making, with the first part, a total of 340,215, between  $22^\circ$  and  $42^\circ$  of south declination. With this volume is an atlas of 12 maps on the same scale as Argelander's and Schönfeld's. Tables are given of the number of stars observed in each degree of declination and 4 minutes of right ascension. In the zone above mentioned ( $20^\circ$  wide) every star down to the tenth magnitude is recorded. The work in all its parts has been prepared with great painstaking by Dr. John M. Thome, director.

**Dreyer's Index Catalogue.**—This is a supplement to his New General Catalogue of Nebulae, by Dr. J. L. E. Dreyer, Director of the Armagh Observatory, Ireland, in which he adds 1,529 to his previous work, making the entire number of nebulae  $(7,840 + 1,529) = 9,369$ , all known up to the date of issue, January, 1895.

**Astronomical Prizes.**—The Watson gold medal was awarded to Dr. Seth C. Chandler for his valuable work on variable stars, and for his researches of the variation of terrestrial latitude.

*The Janssen prize*, a gold medal, was bestowed upon Prof. George E. Hale, of the University of Chicago, Ill. It is one of the high honors in the gift of the Academy of Sciences of France. This prize was established in 1887, and the medal has each year since been awarded to some worthy astronomer. In this instance it was in recognition of his spectroscopic and spectro-heliographic work on the Sun. Only two other Americans have received this medal, viz.: Prof. C. A. Young, of Princeton, N. J., and Prof. Samuel P. Langley, now secretary of the Smithsonian Institution.

*The Astronomical Journal Prizes.*—No. 1, with value of \$200, was awarded to Paul S. Yendell for the best series of determinations of

maxima and minima of variable stars by Arge-lander's method. Prof. Simon Newcomb was the recipient of prize No. 2, of the value of \$400, for the most thorough discussion of the theory of the rotation of the Earth with reference to the recently discovered variation of latitude.

The *Valz prize* was given to M. Coniel for work on the planetoids.

*Lalande Prize.*—For his researches of the nebulae, M. Javelle received this prize.

The *Demoiseau prize* was awarded to M. Brendel for his methods of calculating pertur-bations of the planetoids.

The *Royal Astronomical Society's prize* was bestowed on Mr. Isaac Roberts for his excellent and extensive series of photographs of nebulae and clusters.

The *F. A. P. Barnard gold medal*, worth \$200, was awarded to Lord Rayleigh for his discovery of argon, the new atmospheric ele-ment.

ATLANTA EXPOSITION. (See EXPOST-  
TION.)

AUSTRALASIA, one of the divisions of the globe, consisting of the continent of Australia and the island colonies of Great Britain in the Pacific, with intervening islands. With the ex-ception of the Dutch part of New Guinea, the German protectorates of Bisnarek Archipelago and the northern Solomon Islands, the French colony of New Caledonia, and the New Hebrides and smaller groups still under native rule, all the islands of Australasia are British colonies or dependencies. The five colonies of Australia and the colonies of New Zealand and Tasmania are self-governing, having each its representa-tive Legislature and responsible ministry, dis-posing of its own revenues, and making all its laws under charters granted by the British Par-liament, subject to a certain reserved veto power of the Imperial Government and the appellate jurisdiction of the British House of Lords in matters of imperial concern. The Crown is re-presented by a Governor in each colony, who, as the executive head of the colonial government, acts on the advice of ministers chosen from the party or combination that forms the majority of the Legislative Assembly. Fiji is a Crown colony in which the natives are governed partly by their own chiefs according to their tradi-tional customs.

**Area and Population.**—The area of the British Australasian colonies, computed from the latest surveys, and their estimated popula-tion on Dec. 31, 1893, are as follow :

COLONIES.	Square miles.	Population.
New South Wales .....	310,700	1,228,370
Victoria .....	87,884	* 1,172,144
Queensland .....	668,497	432,299
South Australia .....	908,690	341,978
Western Australia .....	975,876	65,064
Tasmania .....	26,385	157,423
New Zealand .....	104,471	672,265
Fiji and Rotuma .....	8,045	122,712
Total .....	3,085,548	4,187,255

\* March 31, 1894.

The aborigines numbered, in 1891, in New South Wales 8,280, including 3,183 half castes ; in Victoria there were 565 ; in Queensland, about 12,000 ; in South Australia, 3,369 in the

settled districts only ; in Western Australia there were 5,670 employed by whites. There were 13,000 Chinese in New South Wales in 1891, 9,377 in Victoria, 3,848 in South Australia, 8,574 in Queensland, and 943 in Tasmania. The Chinese are rapidly diminishing since the poll tax on Chinese immigrants was raised in 1888 to £100 in all the colonies excepting Western Australia and the northern territory of South Australia. The arrivals in New South Wales in 1893 were only 34, while 558 left the country. The wages paid to gold miners in Western Aus-tralia have attracted Chinese immigrants, and still more natives of India and Afghanistan. The law does not permit people of colored races to mine gold on their own account. The Chinese in Queensland are mainly employed in the gold mines. Those in the older colonies engage largely in market gardening. The number of Polynesian contract laborers in Queensland in 1891 was 9,428. The Polynesian immigration into that colony in 1893 was 1,212, and the emi-gration 1,343 ; the Chinese immigration was 548, and the emigration 534. In New Zealand 4,444 Chinamen were resident in 1891. The Maori population was 22,861 males and 19,132 females. The movement of population for the several colonies in 1893 was as follows :

COLONIES.	Mar- riages.	Births.	Deaths.	Natural increment.	Net immi- gration.
New South Wales...	7,749	40,342	16,022	24,320	8,059
Victoria .....	7,004	36,552	16,508	20,044	* 6,418
Queensland .....	2,524	14,394	5,695	8,699	2,303
South Australia ....	2,110	10,688	4,520	6,168	* 226
Western Australia ..	392	2,112	945	1,167	5,223
Tasmania .....	848	5,216	2,071	3,145	* 560
New Zealand .....	4,115	18,187	6,767	11,420	10,412
Fiji .....	.....	.....	.....	.....	.....

\* Excess of emigrants.

**Finances.**—The budgets of the several colo-nies for 1893, and the state of their debts for the fiscal year ending June 30, 1894, in New South Wales, Victoria, Queensland, and South Aus-tralia ; March 31, 1893, in Western Australia and Tasmania ; and Dec. 31, 1893, in New Zea-land and Fiji, are shown in the following table :

COLONIES.	Revenue.	Expenditure.	Debt.
New South Wales....	£9,706,734	£10,289,022	£58,079,083
Victoria .....	6,719,623	7,884,961	46,547,708
Queensland .....	3,348,069	3,351,536	30,639,584
South Australia .....	2,526,705	2,525,606	21,688,250
Western Australia...	570,651	640,801	2,873,098
Tasmania .....	706,972	836,417	7,645,604
New Zealand .....	4,407,963	4,170,616	38,901,330
Fiji .....	76,774	85,981	239,682

The debts were incurred for railroads, irriga-tion works, and similar public improvements. The older settled colonies derive a large part of their revenue from railroads, tramways, tele-graphs, and another large share from the rental of public lands. These lands are sold only in agricultural homesteads.

Of the revenue of New South Wales, £2,834,-479 came from taxation, viz., £2,127,645 cus-toms, £265,554 excise, £311,637 stamp duties, and £129,643 licenses ; £2,206,272 was the amount of the land revenue, £4,418,434 the revenue from the railroads and other services, and £247,551 from miscellaneous sources. Of



the expenditure, £1,895,347 went for railways and tramways, £774,502 for posts and telegraphs, £2,687,898 for interest and extinction of the public debt, £3,106 for immigration, £805,330 for public instruction, and £4,122,839 for other public works and services. The average interest on the public debt of this colony is 3·83 per cent. Of the total amounts of the loans, £38,557,903 had been expended for railways and tramways, and the rest for river and harbor improvements, water supply and sewerage, fortifications, military stores, roads, bridges, immigration, etc. The net return from railroads, telegraphs, waterworks, etc., is 3½ per cent.

In Victoria the amount of revenue raised by taxation was £2,522,779, of which £1,739,285 came from customs, £251,254 from excise, £119,216 from the land tax, £183,928 from duties on estates of deceased persons, £23,720 from a duty on bank notes, £170,000 from stamps, £19,869 from business licenses, and £15,507 from tonnage dues, etc. The revenue from railways was £2,912,788; from posts and telegraphs, £546,404; from Crown lands, £482,768; from miscellaneous sources, £494,490. Of the total expenditure, £1,836,185 went for interest and redemption of debt, £1,769,145 for working expenses of railroads, £894,466 for other public works, £716,138 for postal and telegraph service, £243,312 for expenses of Crown lands, £782,676 for public instruction, £290,751 for public charity, £198,935 for courts of law, £330,498 for police and prisons, £110,048 for customs and harbors, £104,498 for mining, £220,785 for defenses, and £492,320 for other purposes. The debt pays an average interest of less than 4 per cent.; £35,805,978 of the total debt was raised to construct railways, £7,228,483 for waterworks, £1,105,557 for school buildings, and £1,800,969 for other public works.

Of the Queensland revenue, £1,085,638 represented customs duties, £45,804 excise and export duties, £106,752 stamp duties, £53,125 business licenses, £350,021 rents from pastoral leaseholders, £238,592 other land rents and sales, £931,053 the gross receipts of railroads, and £208,474 postal and telegraph receipts. The expenditure for interest on the debt was £1,255,533; for public instruction, £210,245; for working railways, £592,403; for posts and telegraphs, £296,407; £378,077 were expended from new loans.

In South Australia, Western Australia, and Tasmania about half the revenue is derived from customs duties, and the other half mainly from public works and lands, and nearly the whole expenditure is for interest on the debt and the maintenance and operation of public works.

In New Zealand £608,637 of revenue was raised in 1893 by direct taxation, a large part of it from a tax of 1*d.* in the pound on the actual value of the land and on mortgages, and an additional land tax graduated from ½*d.* to 2*d.* in the pound; £1,740,384 were received from indirect taxes, namely, customs duties and an excise tax on domestic beer: £1,169,987 were receipts of railways and £322,906 postal and telegraph receipts; £221,217 came from other ordinary sources; and £344,832 were territorial revenue. Of the total expenditure, the service of the debt absorbed £1,601,890; railways, £724,080; public instruction, £418,610; posts and telegraphs,

£282,478; constabulary, militia, and volunteers, £172,206; other ordinary expenses, £735,423; territorial expenditure, £235,929. The expenditure from new loans was £735,406.

The Australasian colonies differ from most civilized communities in the proportion of public wealth to private property. The railroads, tramways, city waterworks, irrigation works, and all such public services belong to the state, and most of the land, not only the wild lands, but the areas now utilized for sheep and cattle raising, are the property of the Government, which disposes of them gradually as communications are opened and the settlements extend. In New South Wales 44,352,937 acres, out of a total land area of 195,882,150 acres, had been alienated before the close of 1893, while 127,092,070 acres were held under time leases. This leased property is available to agricultural settlers by free selection in lots of from 40 to 640 acres, in the central division up to 2,560 acres, at £1 an acre for residents. A maximum of 320 acres can be acquired without the condition of actual residence for £2 an acre. Under this system most of the cultivated land has come into the hands of farmers with holdings of less than 500 acres. The forests, which are mostly owned by the state cover about one fourth of the total area. In Victoria 2,656,817 acres have been alienated, 15,500,000 acres are leased for pastoral purposes, 4,700,000 acres are state forests and water reserves, 1,046,000 acres are auriferous land, and 1,330,000 acres are roads. In South Australia 9,144,071 acres out of a total of 578,361,600 acres have been alienated, 29,830,971 acres are inclosed, and 87,212,160 acres are held under 895 pastoral leases. In Queensland out of a total area of 414,049,953 acres 11,517,974 had been alienated, 2,270,153 were in process of alienation on Dec. 31, 1893, and 281,316,885 acres were leased to 3,715 squatters. In this colony a maximum of 1,280 acres can be leased for agricultural or 20,000 acres for pastoral purposes, and at the termination of the leases, which run fifty and thirty years respectively, a freehold title may be purchased under certain restrictions of residence and improvement. In New Zealand, where the system of taxing land values has recently been introduced, some large areas have been acquired by speculative individuals and corporations. The total area is 67,000,000 acres, of which 10,000,000 are covered with forests, 9,000,000 are waste and water, 16,000,000 are grass and fern lands not yet disposed of or occupied, 12,500,000 acres are rented from the Government for pastoral purposes, 12,500,000 are occupied by the owners, and 7,000,000 are leased from private owners. The holders of pastoral leases, which are only given in certain localities, can acquire the fee simple to restricted areas. The public lands can be bought for cash or leased in perpetuity.

The total wealth of New South Wales was estimated in 1892 at £593,286,500, of which £46,752,900 represented railroads and other revenue-paying works of the Government, £23,493,400 works and buildings of the state that yield no direct revenue, £13,671,200 the sums due the Government on purchased lands, £98,008,000 the public lands leased but not sold, and £7,213,000 municipal property, making the sum total of the

public wealth £189,138,500, while private wealth amounted to £404,148,000, consisting of land valued at £179,043,000, buildings and other improvements reckoned at £126,896,000, and £98,209,000 worth of personal property. The cost of the Victoria railroads was £37,451,487. The net profits in 1893 were 2·89 per cent. of the capital cost, and 3·14 per cent. of the borrowed capital, on which the Government pays over 4 per cent. interest. The Queensland railroads cost £18,177,383; those of South Australia, which pay a net profit of over 3½ per cent., cost about £12,000,000, the Tasmanian railroads £3,653,000, the Western Australian over £2,000,000, and those of New Zealand £15,942,000.

The total amount of the debts, public and private, owing to Great Britain by the 7 Australasian colonies has been estimated at £315,000,000, on which £12,750,000 of interest was paid in 1894, which was less than the sum paid in the two previous years.

**Commerce and Production.**—The following table shows the foreign and intercolonial trade of the several colonies for 1893 :

COLONIES.	Imports.	Exports.
New South Wales .....	£18,107,085	£22,921,223
Victoria .....	13,283,514	13,308,551
Queensland .....	4,352,783	9,632,662
South Australia .....	7,934,200	8,463,936
Western Australia .....	1,494,438	918,147
Tasmania .....	1,057,683	1,352,184
New Zealand .....	6,911,515	8,985,364
Fiji .....	276,398	355,632

The product of wool in New South Wales in 1893 was 344,982,876 pounds; the wool export of Victoria was 150,892,425 pounds, about one half being the product of the colony; the export from Queensland was about 107,000,000 pounds; from Tasmania, 9,000,000 pounds; from Western Australia, 7,400,000 pounds; from South Australia, 60,000,000 pounds; from New Zealand, 113,250,000 pounds.

The gold product of New South Wales for 1893 was £651,286 in value; for Victoria, £2,684,504; for Queensland, £2,159,290; for Tasmania, £131,104; for Western Australia, £421,385; for New Zealand, £913,138.

In New South Wales 252,606 tons of sugar cane, 748,929 gallons of wine, and 800,024 cases of oranges were produced in 1894. That colony has had a forest conservation department since 1887 which looks after 5,148,000 acres of forests, from which 196,114,000 square feet of sawed timber was taken in 1893. The value of the silver and silver-lead ore and metal raised in 1893 was £2,953,589; of copper, £73,287; of tin, £126,114; the quantity of coal, 3,278,328 tons.

In Victoria wheat and other cereals and root crops are more extensively cultivated than in New South Wales, and the manufacturing interests are larger. The export of breadstuffs was valued in 1893 at £1,067,583; leather and leather goods, £218,426; refined sugar, £99,897.

Queensland in 1893 exported tin of the value of £106,953, and silver and silver lead of the value of £42,408. The product of raw sugar was 76,146 tons. The export of sugar was valued at £753,983; of preserved and salted meat, £141,513; of frozen meat, £377,039; of

meat extract, £18,825; of hides and skins, £348,219; of pearl shell, £142,454.

In South Australia in 1894 there were 13,618,062 bushels, compared with 15,255,000 bushels in Victoria, 6,507,000 bushels in New South Wales, and 4,892,000 bushels in New Zealand. The wine crop was 712,845 gallons. The copper product was £208,967 in value.

Tasmania exported silver and silver ore of the value of £158,859; tin, £266,156; timber and bark, £57,256; hops, £13,948; fruit, green and preserved, £122,183.

The chief exports of Western Australia in 1893 were, besides gold and wool, pearl shell for £79,259, sandal wood for £32,160, timber for £78,419, and skins for £23,975.

New Zealand has a varied culture, producing, in addition to wheat, large crops of oats, barley, and hay. The export of grain and flour for 1893 was valued at £597,329; of frozen meat, £1,085,167; of Kauri gum, £510,775; of tallow, £183,588; of timber, £101,082; of hides, skins, and leather, £390,640; of butter and cheese, £354,271; of New Zealand hemp or phormium, £219,375; of preserved meat and bacon, £52,803; of grass seed, £57,544.

**Communications.**—The length of the railroad lines in the Australian colonies at the end of 1893 was as follows: New South Wales, 2,501 miles; Victoria, 2,975; Queensland, 2,379; South Australia, 1,810; Western Australia, 1,184; Tasmania, 475; total, 11,324 miles. In New Zealand there were 2,112 miles open on March 31, 1894, including 164 miles of private lines.

The telegraph system in all the colonies belongs to the Government. The lines of New South Wales in 1893 had 27,326 miles of wire; in Victoria there were 7,105 miles of lines, with 14,220 miles of wire; in Queensland, 10,004 miles, with 17,810 miles of wire; in South Australia, 5,546 miles, with 13,082 miles of wire; in Western Australia, 3,578 miles, with 4,303 miles of wire; in Tasmania, 2,187 miles, with 3,397 miles of wire, besides 366 miles of cable; in New Zealand, 5,513 miles, with 13,515 miles of wire. The number of dispatches sent in 1893 was 2,853,691 in New South Wales, 2,476,178 in Victoria, 1,104,311 in Queensland (1892), 220,717 in Western Australia, 207,591 in Tasmania, and 2,069,691 in New Zealand.

The postal traffic for 1893 was as follows: In New South Wales, 77,540,500 letters, 850,420 post cards, 63,702 parcels, 12,060,600 packets, 44,927,900 newspapers, and 530,546 money orders; in Victoria, 62,526,448 letters, 7,491,316 packets, and 22,729,005 newspapers; in Queensland, 16,297,827 letters, 67,487 parcels, 3,925,415 packets, and 10,545,485 newspapers; in South Australia, 16,597,917 letters, 1,402,540 packets, and 8,909,279 newspapers; in Western Australia, 7,002,913 letters, 145,701 registered letters, 1,401,146 packets, and 6,001,946 newspapers; in Tasmania, 5,555,641 letters, 166,323 post cards, 1,399,973 packets, and 4,231,868 newspapers; in New Zealand, 52,085,449 letters, 2,697,110 post cards, 14,478,985 books and parcels, 19,556,030 newspapers, and 210,957 money orders.

**Navigation.**—The number of vessels and the tonnage entered and cleared at the ports of the several colonies during 1893 are shown in the following table:



COLONIES.	ENTERED.		CLEARED.	
	Number.	Tonnage.	Number.	Tonnage.
New South Wales...	2,914	2,590,371	2,916	2,602,957
Victoria.....	1,889	2,009,187	1,887	2,020,551
Queensland.....	599	464,581	615	481,047
South Australia....	948	1,180,233	971	1,212,367
Western Australia..	293	539,953	288	531,465
Tasmania.....	693	466,312	690	468,127
New Zealand.....	617	615,604	635	642,466

The number of registered vessels and their aggregate tonnage in each colony were : New South Wales, 969 vessels, of 110,195 tons; Victoria, 439 vessels, of 93,913 tons; Queensland, 213 vessels, of 22,700 tons; South Australia, 304 vessels, of 38,902 tons; Western Australia, 157 vessels, of 5,899 tons; Tasmania, 226 vessels, of 19,499 tons; New Zealand, 478 vessels, of 73,753 tons.

**Australasian Federation.**—The first legal step toward the federal union of the Australasian colonies was the creation of a Federal Council as the result of an intercolonial conference. An enabling act having been obtained from the Imperial Parliament, all the colonies, with the exception of New South Wales, South Australia, and New Zealand, appointed delegates to the Federal Council, which met at Hobart, Tasmania, in January, 1886. At the next session South Australia was represented also. The Council is a purely deliberative body, with no power to legislate, but only to discuss matters of intercolonial interest and suggest subjects for the common legislative action of the colonial parliaments. The Council, which has met five times, has done very little to justify its existence except as a symbol of a more complete federation. A conference of representatives from all the Australasian colonies, held at Melbourne in February, 1890, resolved in favor of a national Australasian convention empowered to consider and report upon an adequate scheme for a federal constitution. This proposition was approved by the colonial legislatures, which elected delegates, 7 from each colony except New Zealand, which sent 3. The convention met at Sydney on March 2, 1891, and drafted a commonwealth bill embodying a plan for the union of the colonies under a governor-general, and a federal parliament, consisting of a senate and a house of representatives, with a responsible ministry and a federal judiciary. This has to be submitted to the colonial legislatures before being presented for the action of the British Parliament. The bill was brought first before the Victorian Parliament and passed the lower house, with some amendments. In New South Wales its main principles received the sanction of both houses, but not before 1893. It was brought up at various times in the other legislatures, and they have delayed forming a decisive resolution. The ardent advocates of federation in Victoria and New South Wales, finding the parliamentary method of procedure unproductive of results, organized in 1893 an Australasian Federation League, which in January, 1894, put forward a new programme. The Victorian branch of the league proposed that the constitution of the federation should be drafted by a popular convention and submitted to the direct vote of the people of the colonies. The New South Wales federationists agreed

in the main point, that the elaboration of the federal constitution should not be intrusted to the parliaments, for its adoption, but that the people should give it their direct sanction. They proposed, however, that conventions should be elected by the people of each colony to pass upon the principles, and that then a federal congress should be convened, its members to be elected by the colonial parliaments, and to this body of legislative experts should be intrusted the task of working out the details of the Constitution to be submitted to the electors of the colonies.

A conference of the premiers of all the Australasian colonies met on Jan. 29, 1895, at Hobart, where the Federal Council was holding its session, to consider the best means to bring about federation. They approved the simpler and more expeditious Victorian plan. Declaring that they regarded federation as the great and pressing question in Australasian politics, they proposed that a convention consisting of 10 representatives of each colony shall be directly chosen by the electors and be charged with the duty of framing a federal constitution; that the constitution so framed be submitted to the electors for acceptance or rejection by direct vote; that such constitution, if accepted by three or more colonies, shall be submitted to the Queen with an address from the parliaments of the colonies, praying for the necessary legislative enactment; and that a bill be submitted to the parliament of each colony for the purpose of giving effect to these resolutions.

When three or more colonies shall have elected their members to the convention, the governors of those colonies shall summon the convention. The members shall be elected under the ordinary elective franchise for members of the Legislative Assembly. When a constitution shall have been framed, the convention shall adjourn for thirty to sixty days to allow its provisions to be criticised, and then reassemble for its final adoption. It shall then be referred to the direct vote of the electors, and if it is accepted by as many as three colonies they shall, on receiving the sanction of the Imperial Government, forthwith establish a federal government. Provision is made for the entrance of New Zealand into the federation.

The Federal Council passed a counter-resolution in favor of proceeding with the consideration of the commonwealth bill by the Australasian parliaments, the method for which Sir John Forrest, Premier of Western Australia, stood out in the conference of premiers. The Council adopted also resolutions recommending official intercolonial supervision of companies, the federal regulation of their loan subscriptions, and the establishment of a federal quarantine.

**Womanhood Suffrage.**—In New Zealand women were admitted to the parliamentary franchise in 1893. A European of either sex who is twenty-one years of age has the right to vote if qualified by a residence of a year in the colony and three months in the district before registration, or by the possession of a freehold estate of the value of £25. Women, however, can not be members of either branch of the Legislature in this colony. On Jan. 15, 1895, the Legislature of South Australia passed the adult suffrage bill, which not only confers upon

women the right to vote, but permits them to sit in Parliament. In New South Wales a Womanhood Suffrage League was organized by Mrs. George B. Montefiore, Miss Rose Scott, Lady Windeyer, and other ladies in 1891. Sir Henry Parkes, the Premier, presided over the public meetings, and to test the sentiment of Parliament in the hope of being able to expunge the word "male" from the electoral reform bill then pending, he offered a motion in favor of female suffrage. There were 57 votes against it and 34 in its favor, while 50 members refrained from voting. In the session of 1894-'95 Dowell O'Reilly moved a resolution that the franchise should be extended to women. This was carried by 68 yeas to 23 nays. Premier Reid promised to give effect to the desire of Parliament in a bill to be brought forward in the next session.

**New South Wales.**—The members of the Legislative Council, of whom there are 64, are appointed by the Crown for life. The Legislative Assembly, under the electoral law of June 13, 1893, has 125 members, elected by as many constituencies. Every British male subject who has resided a year in the colony and three months in his district is entitled to vote. Alien Europeans can obtain naturalization after a residence of five years. The plural and non-resident suffrage formerly possessed by owners of real estate has been abolished. Members receive a salary of £300. Each Parliament, unless previously dissolved, lasts three years. The Governor in the beginning of 1895 was Sir Robert William Duff, appointed May 29, 1893. After his death Viscount Hampden, son of the former Speaker of the British House of Commons, Sir Henry Brand, was appointed.

The Cabinet constituted Aug. 2, 1894, consisted of the following members: Premier and Treasurer, George Houston Reid; Chief Secretary, James Nixon Brunker; Attorney-General, John Henry Want; Secretary for Lands, Joseph Hector Carruthers; Secretary for Public Works, James Henry Young; Minister of Public Instruction, Jacob Garrard; Postmaster-General, Joseph Cook; Secretary for Mines and Agriculture, Sydney Smith; Minister of Justice, Albert John Gould; Vice-President of the Executive Council and Representative of the Government in the Legislative Council, William Henry Suttor.

**Legislation.**—The elections of 1894 condemned the protective tariff, of which Sir George Dibbs was the author. After Parliament reassembled in February, 1895, a motion of want of confidence was rejected by 66 to 27. The Labor party, holding the balance of power, sustained the Government. They influenced largely the legislation of the session. A bill reducing the salary of the Governor from £7,000 to £5,000, following the example set by the Victorian Legislature, was carried by their votes. This bill the Legislative Council did not immediately reject, as was expected, but it was laid on the table. Mr. Reid stated that the extra allowance of £2,000 would be abolished in any case. \* The House further decreed that no agent-general of the colony in London should hold the office longer than five years. An act was passed imposing penalties on both masters and

men if employees work more than eight hours a day. The Government, adopting the recommendations of a commission appointed to inquire into the civil service, proposing that the control over it should be vested in a board free from all ministerial influence. Political patronage would be entirely swept away, and reforms carried out in the departments that would save the treasury £250,000 a year. Some manœuvring took place over a local government bill. After the Government had inserted a provision allowing taxation on unimproved land values, Mr. Reid moved an amendment applying this principle to newly created municipalities only. He was bitterly attacked by his own supporters, and the amendment was defeated by 63 votes to 17. The Opposition joined the Labor party to vote for extending to municipal elections the principle of one man one vote. The Premier demanded that this action should be rescinded, and the Government was defeated by 5 votes, but did not resign, as the bill was dropped. A bill enacted by the Assembly giving drastic powers to a board to deal with labor disputes between masters and men was vetoed by the almost unanimous vote of the Council. The policy of the Government was revealed in the exceedingly democratic budget, which altered entirely the incidence of taxation, exempting the working class from almost every burden. Sir Henry Parkes, though supported by Sir George Dibbs and the Protectionists, objected in vain to making important fiscal changes until federation was an accomplished fact. The old leader of the Free Traders found only three of his followers willing to enter into this unnatural compact, and consequently his motion of want of confidence was defeated by 67 votes to 34. The *ad valorem* and the specific duties of the Dibbs tariff were repealed. To provide the amount of revenue thus sacrificed, amounting to £554,000, a land tax of 1*d.* in the pound was imposed, which was estimated to bring in over £400,000, and an income tax of 6*d.* in the pound, which would yield £108,000. Properties under £475 in value were exempted from the land tax. An extra tax of 20 per cent. was levied on absentee landlords, which would affect about 8,000 of the larger landowners who live in Europe on the revenues of their Australian estates. Incomes under £300 were exempted from the income tax. The only permanent tariff will be duties on spirituous drinks and narcotics, which were fixed at the following rates: Spirits, 14*s.* a gallon; sparkling wines, 10*s.* for 6 quarts; other wines, 5*s.*; beer, 9*d.* a gallon; tobacco for home consumption, 3*s.* a pound; unmanufactured tobacco, 1*s.*; cigars and cigarettes, 6*s.*; opium, 20*s.* The specific duties on kerosene, candles, and other imports that were taxed by the former Free-trade Government were retained for twelve months, after which they will be gradually reduced and finally abolished after seven years. The duty on sugar will be retained for two years, and then gradually removed by annual reductions of 20 per cent. The estimated revenue for 1895-'96 is £9,118,337 and the estimated expenditure £9,062,153. The Premier proposed to amalgamate the two savings banks, which have £7,500,000 of deposits, into a state bank that shall be



the only bank of issue. Mr. Reid changed the date of the termination of the financial year to June 30 to make it correspond with the date adopted by the other colonies. For the six months ending June 30, 1895, he originally estimated that the revenue would be £4,970,843, including £389,153 of accrued interest from the loan fund. The expenditures for the six months were estimated at £4,861,850. Subtracting the surplus to the accumulated deficit, there would still remain on July 1, 1895, a deficiency of £1,356,233, which he hoped eventually to wipe out with the surplus revenue to be obtained by his reformed system of finance. The savings already effected before the conclusion of the six months reduced the deficit to £1,216,253. The estimate of expenditure for 1895-'96 was £1,923,000 less than the expenditure for 1892, £614,000 less than in 1893, and £841,000 less than in 1894. The land-tax bill was passed in the Assembly by 50 votes to 25, and the income-tax bill by 54 votes to 23.

**Conflict between the Two Houses.**—On June 20, the day after the final passage by the Legislature of the customs duties bill and the land-tax bill, the Legislative Council threw out the bill for assessing the land and income tax, by a majority of 41 to 4. Mr. Reid had declared that the Administration was prepared to stake its existence upon carrying the principle of direct taxation, and had warned the Council if it did not respect the right of the lower house to shape the system of taxation to accord with the will of the electors and taxpayers of the country, then the parliamentary machinery would have to be altered. There was no governor to whom the minister could apply for the creation of new councilors, as Sir R. W. Duff had died and his successor had not yet arrived. Moreover, Mr. Reid was unwilling to employ such a provisional expedient to bridge over the constitutional difficulty, nor could he be sure that the Imperial Government, however anxious for free trade, would approve his radical changes in taxation in the face of the desperate opposition of the wealth and landholding interest unless he were fortified by a new and imperative mandate. He announced the dissolution of the House and at the same time a scheme for the reformation of the Council that would prevent future deadlocks. According to this the Legislative Council will consist of 60 members nominated for five years, one fifth retiring every year. The sole power regarding appropriation bills must rest with the Assembly, but in loan and taxation bills the upper house may propose amendments, which will fail unless they are subsequently accepted by the Assembly. Any bill that has been vetoed by the Council will pass into law if the Assembly approves it again in the next session and the people signify their assent in a referendum taken in the following recess. The tension between the two houses grew sharper. Amendments made by the Council in an appropriation bill and in a bill authorizing a loan of £2,500,000 if it should become necessary were on the motion of the Premier thrown under the table as an invasion of the rights of the Assembly, Sir George Dibbs alone dissenting, and when Mr. Reid's plan for the reform of the Council was submitted to that chamber it re-

fused by 41 votes to 3 to receive the resolution, on the ground that it was an insult.

Parliament was dissolved on July 5 and new elections were fixed for July 24.

**The New Parliament.**—By replacing the protective duties with a land tax and an income tax levied on the well-to-do classes only, Mr. Reid antagonized not alone the Protectionists, led by Sir George Dibbs, but the Conservative Free-Traders, who followed Sir Henry Parkes. The fiscal scheme was nullified by the refusal of the Legislative Council to pass the measures required to give it effect. In appealing to the country, the Premier announced a programme for the reform of the upper chamber, whereby life membership would be abolished and a suspensive veto substituted for the absolute veto. The Labor party went further, demanding that either the Legislative Council should be abolished or the people should decide by a *referendum* when the two houses disagreed.

The appeal to the constituencies resulted in a victory for the Government, with the Labor party holding the balance of power. The Ministerialists in the new Assembly number 62, the Opposition, including the followers of Sir George Dibbs and Sir Henry Parkes, no more than 40, and the Labor representatives 23.

The new Parliament was opened on Aug. 13. Mr. Reid introduced in the Legislative Council a bill for reforming that body, and in the other chamber a free-trade budget and a bill for establishing direct taxation. The reformed Council is to consist of 60 members, appointed for five years, with chance of reappointment. The land and income-tax assessment bill passed the Legislative Assembly on Aug. 30 by 62 votes to 25. The Legislative Council rejected the bill by 54 votes against 24, and the bill for its own reform by 39 votes against 13.

**Victoria.**—The Legislative Council, consisting of 48 members, is an elective body. Members must possess an estate of £100 annual value, and electors, unless they belong to the learned professions, must own real property rated at £10 a year or occupy leased or rented property of £25 ratable value. The Legislative Assembly has 95 members, elected for three years by universal manhood suffrage. Their pay in 1895 was cut down from £300 to £240 a year.

The Governor in the beginning of 1895 was the Earl of Hopetoun, appointed in 1889. He retired in April, and was succeeded by Lord Brassey.

The Cabinet in the beginning of 1895 was composed of the following members: Premier and Treasurer, George Turner; Attorney-General, Isaac Isaacs; Solicitor-General and Minister of Public Health, H. Cuthbert; Commissioner of Trade and Customs, President of the Board of Land and Works, and Commissioner of Crown Lands and Survey, R. W. Best; Minister of Defense, G. Turner; Minister of Mines and Water Supply, H. Foster; Minister of Agriculture, J. W. Taverner; Minister of Railways, H. R. Williams; without portfolios, A. Mc Lean and W. McCulloch.

**Legislation.**—The Government had to deal with the question of reducing expenditure and increasing revenue so as to escape from the chronic deficit caused here, as in the other colo-

nies, by the falling off of revenue consequent upon the financial crisis of 1892, and especially to the diminution of net railway receipts, which fell far below the loans raised in Great Britain to build the roads. The Legislature cut down the salaries of ministers and other officials and voted to reduce the Governor's salary from £10,000 to £5,000. After the appointment of Lord Brassey, one of the chief founders of the Imperial Federation League, the ministry had it raised again to £7,000. The Labor party, who were strong in the Assembly, rebelled against the reduction of members' salaries, and when a reduction to £200 had been voted they joined with the Opposition to block the bill and carried an adverse vote against the Government on Jan. 8. As a coalition between the Labor party and the Opposition was not thought of, the Premier did not resign, but arranged a compromise on the question of salaries. A land and income-tax bill was passed by the Assembly. The Council showed its determined opposition to a tax on land by defeating this bill by a large majority. The income tax was revived, with a reduced minimum of exemption, and the bill passed both houses. Parliament was prorogued on Jan. 29, to meet again on May 29. A board appointed to consider the revision of the tariff reported in favor of moderate protection, but condemned high or prohibitive duties, and found that the duties that had been levied to foster industries had become a burden on the community. The board advised making wine free of duty, and proposed reductions in the duties on woollens, wine and spirits, sugar, boots, hats, soap, candles, carriages, biscuits, jewelry, bicycles, farm implements, stationery, and many other articles. Commissioners were appointed to consider the question of establishing a state bank. Another board studied the management of the railroads with the view of lessening the annual deficit. A committee of public accounts was created. Subjects of legislation proposed were the safeguarding of trust funds; the settlement of farmers upon Mallee lands; the amendment of the law regarding companies; an amendment of the Constitution establishing the principle of one man one vote, and another to facilitate the settlement of differences between the two houses of the Legislature; the construction of new railroads on the lines of a report of the standing committee; an amendment of the factories act intended to check the sweating system; encouragement of the establishment of sugar factories for the development of the cultivation of the sugar beet, for which several districts were found to be admirably suited; the encouragement of the production of valuable oil and fiber plants; the promotion of the trade in frozen meat; the removal of defects in the insolvency law; and the better regulation and maintenance of charitable institutions. The chief business of the session was the revision of the tariff. The duty on Australian tobacco was slightly increased; that on cigarettes raised from 6d. to 2s.; the duties on sugar and spirits reduced, but not those on wine and beer; the tariff on machinery was made 30 per cent.; the duty on woollens was fixed at 30 per cent. for the first year and 25 per cent. after that. The revised tariff goes into force on Jan. 1, 1896.

The revenue of the colony for the year ending June 30, 1895, was £6,719,151. The customs receipts showed an increase of £92,456 and the inland revenue one of £126,994, which was chiefly due to the income tax. There was a decline in the land revenue and in fees, and the receipts from public works fell off £124,096. The deficit for the year was about £120,000.

**Queensland.**—The legislative powers are vested in a Legislative Council of 37 members nominated for life and a Legislative Assembly of 72 members elected by the votes of all adult males qualified by a six months' residence. Owners of real property and leaseholders have plural votes wherever their property is situated. Members of the Assembly are paid £150 a year and their traveling expenses. The Governor in the beginning of 1895 was Sir Henry Wylie Norman, appointed in December, 1888.

The ministry in the beginning of 1895 was composed as follows: Premier, Vice-President of the Executive Council, and Colonial Treasurer, Hugh Muir Nelson; Chief Secretary and Secretary for Railways, Sir Thomas McIlwraith; Minister of Lands and Agriculture, A. H. Barlow; Postmaster-General, A. J. Thynne; Secretary for Mines, Secretary for Public Works, and Secretary for Public Instruction, Robert Philp; Colonial Secretary, H. Tozer; Attorney-General, T. J. Byrne; without portfolio, W. H. Wilson.

**Legislation.**—In March, Sir Thomas McIlwraith resigned his offices, while remaining in the Cabinet as minister without portfolio. H. M. Nelson, Premier and Colonial Treasurer, became Chief Secretary and Treasurer; Robert Philp became Secretary for Railways as well as Secretary for Mines and Works; and David Day Dalrymple entered the Cabinet as Secretary for Public Instruction. The Government has made arrangements with steamship owners for the carriage of frozen produce to Europe, and also for the bringing of English and German immigrants at about as low a rate as the passage to the United States. Parliament assembled on June 25. The revenue for the year ending June 30 was £3,413,000, showing an increase in customs and railway receipts. The expenditure was £3,308,000. The Government, in view of this decided improvement in the public finances, contemplated a renewal of reproductive public works as far as possible, without having recourse to a new loan.

**South Australia.**—The Legislative Council has 24 members, who are elected for nine years, by male citizens having freehold property or a leasehold of £20 annual value. The Legislative Assembly is composed of 54 members elected for three years by universal manhood suffrage.

The Earl of Kintore's tenure of office as Governor ceased, and he left the colony on Jan. 17.

The ministry in the beginning of 1895 was composed as follows: Premier and Attorney-General, C. C. Kingston; Chief Secretary, J. H. Gordon; Treasurer, F. W. Holder; Commissioner of Crown Lands, P. P. Gillen; Commissioner of Public Works, J. G. Jenkins; Minister of Education and Agriculture, J. A. Cockburn.

**Legislation.**—The Parliament met on June 6. It considered bills for consolidating the public debt, granting credit to facilitate advances to producers, and the extension of public works.



Among the economies adopted to balance the budget the Government decided to abolish the militia, thus saving £10,000 a year. The revenue for the year ending June 30 was £2,424,385, a decrease of £102,320, which left a deficit for the year of about £60,000.

A reciprocity treaty has been made with New Zealand, whose barley, oats, horses, and hops are admitted free in exchange for a similar privilege granted to South Australian wine, olive oil, salt, and fruits.

**Western Australia.**—The Legislative Council has 21 members, elected for six years, by owners of land worth £100, or occupiers of Crown lands or of other property valued at £25 a year. The Legislative Assembly has 33 members, elected for one year by all male citizens.

The Governor is Sir William C. F. Robinson, appointed in 1890.

The Cabinet in 1895 was composed as follows: Premier, Treasurer, and Colonial Secretary, Sir John Forrest; Attorney-General, Septimus Burt; Commissioner of Lands, A. R. Richardson; Minister of Public Works, H. W. Venn; Minister for Mines and Education, E. H. Witteuwrow.

**Legislation.**—Parliament was opened on June 25. The Government presented bills for establishing a mint, amending the gold-mining laws, reducing taxation on the necessities of life, improving the postal and telegraph services, and organizing public sanitation. The revenue for the year ending June 30 was £1,125,940, an increase of £444,695 over the previous year.

**Gold Mining.**—Discoveries of gold continued to be made in 1895. A party that found an enormous ledge of rich quartz 100 miles beyond Coolgardie came into conflict with the natives and killed a great number, and when they returned they were arrested for manslaughter. Prospectors suffered greatly for lack of water, and many were unable to procure sufficient food at the high prices prevailing. Good rainfalls gave much relief. Immigrants were arriving in May at the rate of 500 a week. The export of gold for the year ending June 30 was 239,594 ounces. The Southern Cross and other mining companies declared large dividends. In order to develop the reefs that have been found in great number in the Coolgardie district, some of which are found to be exceedingly rich, near the surface at least, water will have to be supplied. On some of the properties it is impossible to obtain water for boilers or stamps, and on others, where machinery has been put up, it has to be purchased at the price of 6 shillings and upward per 100 gallons. Surface storage reservoirs have proved useless by reason of the scanty and uncertain rainfall and the porous soil and rapid evaporation. The Government has set apart a sum of money to be devoted to boring artesian wells in various parts of the gold field, though the geological experts advised against making the experiment, as the formation is granite, which never has been known to contain water. If this plan fails, water will have to be pumped 346 miles from Swan river, which can give, however, but a limited supply, or the ore must be collected and carried by railroad to this river, or sea water must be brought in pipes a distance of 220 miles from Esperance Bay and pumped to an elevation of 1,500 feet.

**Tasmania.**—The members of the Legislative Assembly, of whom there are 37, are elected under a property or income limitation which is lower than that required of electors to the Legislative Council, which has 18 members.

The Governor is Viscount Gormanstown, appointed in August, 1893.

The ministry in the beginning of 1895 was composed as follows: Premier, Sir E. N. C. Braddon; Chief Secretary, W. Moore; Treasurer, P. O. Fysh; Attorney-General, A. J. Clark; Minister of Lands and Works, A. J. Pillinger; without portfolio, Thomas Reilly.

**Legislation.**—Parliament, which was opened on June 25, had little to consider except financial matters. The Treasurer expected to avoid the necessity of fresh taxation by curtailing expenses in various departments. The year's account showed a surplus of over £8,000, leaving a deficiency entailed from previous years of £442,000. A domestic loan of £500,000 at 3½ per cent. was proposed, repayable in five years. The metal production of 1894 was £830,000, a large increase over the previous year. The Premier desired to arrange a treaty of complete reciprocity with Victoria.

**New Zealand.**—The General Assembly consists of two chambers. The Legislative Council consists of 47 members, holding their seats for seven years, except those who were appointed before Sept. 17, 1891, when the term was for life. The House of Representatives has 74 members, including 4 Maoris elected by their nation.

The Governor is the Earl of Glasgow, appointed June 7, 1892.

The ministry in the beginning of 1895 was composed of the following members: Premier, Minister of Public Works, and Minister of Native Affairs and Defense, R. J. Seddon; Attorney-General and Colonial Secretary, Sir P. A. Buckley; Minister of Education, Minister of Labor, and Commissioner of Stamps, W. P. Reeves; Minister of Lands and Immigration, Minister of Agriculture, and Commissioner of Forests, J. Mackenzie; Colonial Treasurer, Postmaster-General, Telegraph Commissioner, Commissioner of Customs, and Minister of Marine and of Industries and Commerce, J. G. Ward; representative of the native race, without portfolio, J. Carroll; without portfolio, W. Montgomery; Speaker of the House of Representatives, Sir George Manrice O'Rorke.

**Legislation.**—Parliament was convened on June 20. Reciprocity treaties with South Australia and Canada were ratified. The Legislature approved a scheme of village settlements as a means of making people out of work self-supporting. The military forces were all armed with the Martini-Henry rifle before the end of the year, as Parliament had authorized. The Midland Railway Company having failed to complete its contract, the Government took possession of the line. The legislative projects submitted to the General Assembly were measures for rating the unimproved value of land, for reforming local government and charitable aid, for readjusting the tariff, for protecting family homes by restricting the influx of aliens, and for making provision for a living wage in all public contracts, besides several other labor bills. The House of Representatives has a standing

order, adopted in 1894, which limits the duration of speeches to half an hour.

The collapse of credit and financial depression having happened to New Zealand some years earlier than to the Australian colonies, the recovery also came earlier. The development of the trade in frozen meat, the improved market for Kauri gum, the buoyancy of the quartz-mining industry and increased output of gold, the improved prices of wheat, and successful shipments of live cattle and refrigerated beef operated to restore the confidence of the English public in New Zealand as a field for investments and tempted the colonial ministry, though it had taken office on a nonborrowing policy, to seek loans on favorable terms in the glutted money market of London, not, however, for public works, which were being extended at a moderate rate out of the ordinary revenue, in which is included the proceeds of sales of public lands. The New Zealand Government had not borrowed in the London market since 1887. Meanwhile the expenditure on public works had been £3,226,000. In the opinion of its public men, what the colony most needed to increase its resources was a good class of settlers on the land, such as the emigrant farmers who have developed the West of the United States. To promote the settlement of the land the Legislature had authorized advances of money to settlers at a low rate of interest. Applications under this act soon reached £500,000, and the Government decided to raise £1,500,000 in the London market to be loaned out in this way. In the summer of 1895 colonial Treasurer Ward went to England to negotiate this loan and to borrow in addition £250,000 for the purchase of private lands suitable for settlement, some of which had already been acquired by condemnation proceedings not always satisfactory to the expropriated owners. He desired further to obtain £250,000 for surveys and roads, and £250,000 to be spent on native lands, and to place £1,000,000 of consols. In pursuance of its policy the administration had increased the public debt during 1894-'95 by £730,421, besides having incurred a liability of £2,000,000 by guaranteeing the debts of the Bank of New Zealand. Mr. Ward concluded these financial arrangements.

**Fiji.**—The Legislative Council, which makes laws for the colony, is composed of the Chief Justice, the Attorney-General, the Receiver-General, the Commissioner of Lands, and the medical officer, with the Governor as president. The Governor, who is also High Commissioner for the Western Pacific, is Sir John B. Thursston.

Complaints were made in 1894 that the Government was arbitrary and oppressive, especially in its dealings with the natives. The attention of the Colonial Office was called to the high death rate among the islanders, which was 50·12 *per mille* in 1893. The Governor in his reply attributed this abnormal mortality to the prevalence of European epidemics, the ignorant superstition of the natives, the want of nutritious food for nursing mothers, and the unsanitary condition of the houses. In January, 1895, the islands were visited by a hurricane that destroyed buildings and shipping, and did serious and lasting damage to the cocoanut and banana plantations. The Government appropriated a sum

of money to meet the pressing wants of the native population, whose food supplies were destroyed. The Methodist missions took steps to afford more permanent relief.

**British New Guinea.**—The southeastern part of the island of New Guinea, or Papua, was annexed to the British Empire in 1888, under an arrangement between the Imperial Government and Queensland, New South Wales, and Victoria, whereby these colonies pay £15,000 a year toward the expenses of administration for the first ten years. The area is 88,460 square miles. The population is about 350,000, of whom not more than 300 are Europeans. The natives can not be deported as contract laborers. White men are allowed to acquire land under restrictions safeguarding the interests of the native race. With a view of encouraging settlers taxation has been made light, and the settlement of land-claims and the acquisition of land is rendered easy, with but few and simple restrictions upon the employment of native labor. Land is offered at 2s. 6d. an acre. The Administrator since the first proclamation of British sovereignty has been Sir William Macgregor. The local revenue in 1894 was £6,000. The value of imports was £28,501. The exports are trepang, copra, pearl shell, gold, pearls, and sandalwood. About 60 white miners are engaged in digging gold in the Louisiade Islands. The forests contain ebony and other valuable timber. Gums are plentiful. Rattan grows luxuriantly, and the cocoanut and sago palms are abundant. The exports in 1894 were about £25,000 in value, including pearls worth nearly £10,000.

**AUSTRIA-HUNGARY**, a dual monarchy in central Europe, composed, under the fundamental law of Dec. 21, 1867, of the Empire of Austria and the Kingdom of Hungary, two inseparable constitutional monarchies that are declared to be hereditary in the male line of the house of Hapsburg-Lorraine, and in case of its extinction in the female line. The legislative power in regard to common affairs, which are confined to diplomatic relations, the army, common finances, and the administration of Bosnia and Herzegovina, is exercised by committees of the legislative bodies of the two halves of the empire, which meet alternately in the two capitals, Vienna and Buda-Pesth. These committees, called the Delegations, are composed of 20 of its members elected every year by the Austrian House of Lords and the same number from the Hungarian Table of Magnates, and 40 from each of the lower houses, the Hungarian Table of Representatives and the Austrian House of Deputies. The two Delegations meet and vote separately, except when there is a disagreement, in which case the matter is decided by joint ballot. The common ministers are responsible to the Delegations, and for any dereliction of duty they may be impeached.

The Emperor of Austria and King of Hungary is Franz Josef I, born Aug. 18, 1830, who was proclaimed Emperor of Austria when his uncle Ferdinand I abdicated on Dec. 2, 1848, in consequence of a popular uprising, and was crowned King of Hungary and took his oath on the Constitution on June 8, 1867. The heir presumptive is the Archduke Karl Ludwig, the Emperor's brother; the next in succession, the latter's old-



est son, the Archduke Franz Ferdinand, born Dec. 18, 1863.

The ministers for common affairs at the beginning of the year were: Minister of Foreign Affairs and of the Imperial House, Graf G. Kalnoky de Korospatak; Minister of War for the Whole Monarchy, Edmund, Edler von Krieghammer, General of Cavalry; Minister of Finance, Benjamin de Kallay. On May 15, in consequence of demands made by the Hungarian Prime Minister for diplomatic action regarding what the Hungarian Government considered to be illegitimate interference of the papal nuncio in Hungarian affairs, which demands, in the opinion of the common Minister of Foreign Affairs, tended to restrict the sphere of his official activity and prevent him from maintaining the independence and continuity of policy that form the main basis of the confidence of foreign cabinets, Count Kalnoky, who had been Foreign Minister for nearly fourteen years, retired from his post. He was succeeded by Count Goluchowski, who took the oath of office on May 18. Count Agenor Goluchowski, born in 1849, the son of a well-known Polish nobleman who was Governor of Galicia, studied in Austrian universities, and, entering the diplomatic career, was appointed *attaché* at Berlin in 1872, and subsequently secretary of the legation. Later he went to Paris as counsellor of the embassy, marrying there the daughter of Prince Joachim Murat, which stood in the way of his succeeding Count Hoyos as ambassador. From 1887 till 1893 he was Austrian minister at Bucharest.

**The Common Budget.**—The budget for common affairs for the year 1895, approved Oct. 8, 1894, makes the total expenditures 152,058,203 florins or gulden (1 florin = 41 cents), distributed as follow: Ministry for Foreign Affairs, 3,751,600 florins for ordinary and 49,400 for extraordinary purposes; Ministry of War, 118,501,466 florins for ordinary and 14,525,872 for extraordinary expenses of the army, and 10,227,060 florins for ordinary and 2,854,200 for extraordinary expenses of the navy; Ministry of Finance, 700,020 florins for central administration and 1,320,000 for military pensions; Board of Control, 128,585 florins.

The receipts are as follow: From the departments of administration, 2,678,290 florins; net receipts from common customs, 47,529,720 florins; payment of 2 per cent. of the remainder from the Hungarian treasury, 2,036,804 florins; matricular quotas, 99,803,389 florins, of which Austria pays 70 per cent. or 69,862,372 florins and Hungary 30 per cent. or 29,941,017 florins.

The extraordinary expenses for the army occupying Bosnia and Herzegovina are 3,632,000 florins.

**Public Debt.**—The general debt of the empire on Jan. 1, 1894, consisted of 2,732,823,356 florins of interest-bearing stock and 27,106,977 florins bearing no interest; total, 2,759,930,333 florins. This does not include the common floating debt, which amounted to 411,993,735 florins on July 1, 1893, consisting of 99,459,650 florins of interest-bearing bills and 312,534,085 florins of paper money.

Austria's special debt amounted on July 1, 1894, to 1,226,783,926 florins, having grown from

408,616,000 florins in 1880. The special debt of Hungary, contracted mainly for the purchase and construction of railroads, increased from 1,093,834 florins in 1880 to 2,228,744,358 florins in 1893. The productive public wealth is estimated to be about as much.

The Austrian Government in February, 1895, arranged with a group of financiers for a gold loan of 50,000,000 florins bearing 4 per cent. interest, which was taken at par. With the proceeds the Government expected to have enough gold to cover the state notes that were in circulation. The Hungarian Government was already in a position to restore specie payments on a gold basis, and was waiting till Austria was able to begin the operation. A Hungarian 3-per-cent. gold loan of 45,000,000 crowns, or 22,500,000 florins, was contracted for the regulation of the Danube at the Iron Gate. A Bosnian loan of 12,000,000 florins was authorized, of which 4,200,000 florins are to repay advances obtained from the Austrian and Hungarian governments for the construction of railroads, 4,900,000 florins to be used in improving and extending the railroads, and the remainder to be expended mainly for military purposes.

**The Army.**—The army is organized in 15 army corps, most of them containing 2 divisions of infantry, each of 2 brigades, with 1 brigade of cavalry, 1 brigade of artillery, and 1 section of railway troops. There are altogether 31 divisions or 63 brigades of infantry troops, 6 brigades of mounted artillery, 4 divisions of cavalry troops, 18 brigades of cavalry, and 14 brigades of artillery. The infantry brigade consists of 1 or 2 regiments, and has usually attached to it a battalion of yagers or of pioneers. A brigade of cavalry contains 2 or 3 regiments. A brigade of artillery consists of 1 regiment of corps artillery, with 2 separate divisions of heavy artillery, and from 1 to 3 battalions of fortress artillery. Each infantry regiment contains 4 battalions, each of 4 companies, the company consisting of 92 men and 3 officers. The infantry arm is the Mannlicher rifle of 8 millimetres caliber, with a fixed magazine holding 5 cartridges. The field artillery consists of 14 regiments attached to corps and 42 regiments of divisional artillery, each of 4 batteries of 4 pieces. The guns, of tempered bronze, have for the field artillery a caliber of 87 centimetres; for the mounted batteries, 66 centimetres. Each cavalry regiment consists of 2 divisions of 3 squadrons, the squadron having 5 officers and 166 men, with a platoon of pioneers. The peace effective of the army for 1895 is as follows:

TROOPS.	Officers.	Men.	Horses.
Staff .....	2,606	4,301	
Sanitary corps .....	81	6,831	
Military establishments .....	2,332	7,512	170
Regular infantry .....	8,276	163,598	622
Yagers .....	877	18,339	104
Cavalry .....	1,982	46,864	89,453
Field artillery .....	1,323	26,011	12,112
Fortress artillery .....	420	7,746	134
Pioneers .....	493	8,370	18
Railroad and telegraph troops ..	91	1,679	4
Train .....	388	3,486	2,664
Austrian Landwehr .....	2,006	18,655	1,534
Hungarian Honved .....	2,570	17,408	3,101
Total .....	23,445	330,807	59,916

The war strength of the army is computed to be 45,238 officers and 1,826,940 men, with 281,886 horses.

**The Navy.**—The Austrian navy, designed for the defense of the coasts, has but 2 modern battle ships, the "Erzherzog Rudolf" and the "Erzherzogin Stephanie," launched in 1887, which have 12 and 9 inches of armor respectively on the water line, and carry one 13- and the other 2 12-inch guns in barbettes, and each a secondary armament of 8 guns. There are 7 casemated ironclads that were built between 1871 and 1878, an old ironclad frigate, 7 corvettes, 6 gunboats, 4 river monitors, and 3 new ram cruisers, the largest of which is the "Maria Theresa," launched in 1893, of 5,250 tons displacement, an armament of 2 9½-inch, 6 6-inch, and 11 quick-firing guns, and a nominal speed of 19 knots. Three coast-defense armor clads, of 5,550 tons displacement, are being constructed, and an addition to the large torpedo flotilla is provided for. There are now 24 first-class, 31 second-class, and 7 third-class torpedo boats and 13 torpedo cruisers. The navy is recruited by conscription, like the army, and has also its Landwehr. It had in 1894 620 officers, and crews numbering 11,684 men.

**Navigation.**—The number of vessels entered at the Austrian seaports during 1892 was 77,635, of 9,094,863 tons; cleared, 77,457, of 9,082,491 tons. Of the total tonnage 87 per cent. was Austrian, the Italian tonnage ranking next, and British third. At the Hungarian port of Fiume 6,287 vessels, of 987,000 tons, were entered in 1893, and 6,256, of 982,500 tons, were cleared.

**Commerce and Production.**—The total value of the merchandise imports into the Austro-Hungarian customs union in 1893 was 683,200,000 florins; the values of the exports, 799,200,000 florins. The values of the principal imports were: Cotton, 55,400,000 florins; coffee, 43,100,000 florins; wool, 35,200,000 florins; coal, 29,000,000 florins; silk, 24,300,000 florins; skins and peltry, 23,400,000 florins; leaf tobacco, 21,800,000 florins; machinery, 19,400,000 florins; woolen yarn, 17,100,000 florins; leather, 17,100,000 florins; books, etc., 15,800,000 florins; cotton yarn, 12,900,000 florins; silk manufactures, 12,600,000 florins; hardware and timepieces, 12,500,000 florins; woolen goods, 12,200,000 florins; grain, 10,800,000 florins; cattle, 9,800,000 florins; colors and tanning materials, 9,700,000 florins; manufactured tobacco, 4,300,000 florins.

The values of the principal exports were: Sugar, 97,100,000 florins; grain, 86,700,000 florins; timber, 59,000,000 florins; cattle, 31,200,000 florins; coal, 30,400,000 florins; eggs, 24,700,000 florins; hardware, 22,200,000 florins; gloves, 21,100,000 florins; woolen goods, 20,200,000 florins; wood manufactures, 18,900,000 florins; glass and glassware, 17,700,000 florins; paper and paper manufactures, 17,600,000 florins; iron manufactures and iron, 12,600,000 florins; feathers, 12,200,000 florins; minerals, 12,100,000 florins; wool, 11,100,000 florins; leather goods, 10,600,000 florins; linen yarn, 8,600,000 florins; silk goods, 7,500,000 florins; wine, 6,300,000 florins; flour, 5,600,000 florins.

The imports of gold and silver coin and bullion in 1893 were 150,878,210 florins, and the exports 20,079,852 florins in value.

The import and export trade with the principal foreign countries in 1893 was in florins, as follows:

COUNTRIES.	Imports.	Exports.
Germany .....	252,122,000	444,356,000
Great Britain.....	66,955,000	51,948,000
Italy.....	45,775,000	60,133,000
Switzerland.....	28,694,000	34,356,000
British India.....	51,241,000	5,590,000
Russia.....	27,328,000	26,373,000
France.....	25,229,000	27,972,000
United States.....	27,328,000	15,185,000
Turkey.....	16,407,000	23,976,000
Roumania.....	6,149,000	29,570,000
Servia.....	16,397,000	13,586,000
Brazil.....	25,279,000	1,600,000
Netherlands.....	6,832,000	12,008,000
Belgium.....	10,248,000	5,094,000

About half the population of the Austrian provinces and a much larger proportion in Hungary are dependent on agriculture. In Austria 36·7 per cent. of the land area and in Hungary 42·58 per cent. is occupied with farms and gardens, nearly 24 per cent. in both countries is meadow and pasture land, 32·6 and 26·8 per cent. respectively is under forests, 0·8 per cent. and 1·32 per cent. is covered with vineyards, and 0·4 and 0·32 per cent. consists of lakes and fish ponds. The product of wheat in Austria in 1893 was 15,386,000 hectolitres; of barley, 18,502,000; of oats, 31,503,000; of rye, 27,814,000. The Hungarian crops for 1892 were: Wheat, 50,239,000; barley, 18,317,000; oats, 22,007,000; rye, 16,414,000; Indian corn, 41,075,000. Austria produced 83,428,000 centners of potatoes, 49,234,000 of sugar beets, and 23,202,000 of other beets in 1893 while Hungary in the preceding year raised 40,100,000 centners of potatoes, 13,368,000 of sugar beets, and 30,058,000 of other beets. The wine crop was 4,535,000 hectolitres in Austria and 796,000 in Hungary. The value of the mining produce of Austrian mines, chiefly iron and coal, was 76,750,410 florins in 1893; the value of furnace products, 32,690,524 florins. The industrial establishments of Austria gave employment in 1890 to 2,880,897 workers, engaged in the metal and textile industries and in making earthen and glass wares, machinery, chemicals, alimentary preparations, and various special manufactures requiring skill and taste.

**Communications.**—At the end of 1893 the Austrian Government owned 4,380 miles of railroads, and operated 2,477 miles more that had not yet been acquired by the state, while the companies still had 3,577 miles under their private management. In Hungary there were 2,744 miles owned outright, and 3,663 miles of companies' lines worked by the Government, while 1,199 miles remained under the direction of companies.

The telegraph lines of Austria in 1892 had a total length of 17,609 miles, with 50,154 miles of wire; those of Hungary had a length of 12,473 miles, and 35,320 miles of wire; in Bosnia and Herzegovina there were 111 miles of line, and 1,780 miles of wire. The number of messages during the year was 12,068,084 in Austria, 9,969,844 in Hungary, and 425,696 in the occupied provinces.

The Austrian post office during 1893 handled 568,008,120 letters, 78,620,870 samples and books, and 70,898,600 journals. The receipts for both



the postal and telegraph services were 37,182,850 florins, and expenses 34,103,045 florins. In Hungary 129,813,000 letters, 25,990,000 packets, and 78,565,000 newspapers passed through the post office in 1892. Receipts were 14,176,000 florins, and expenses 9,802,000 florins.

**The Delegations.**—The Delegations met in Vienna on June 9. The report of the Committee on Foreign Affairs stated that it was recognized on all sides that the triple alliance was pacific and free from aggressive intentions, and that nobody has cause to take up a defensive attitude against it; if other powers, then, also effect a *rapprochement* among themselves with a view to the substantial protection of their own legitimate interests, it ought not to disturb the general tranquillity that was the object which the triple alliance had in view.

**Austria.**—The provinces composing the Austrian Empire are represented in the national Legislature or Reichsrath, and at the same time possess a large degree of legislative and administrative autonomy, each having its provincial diet or Landtag. The Reichsrath consists of the Herrenhaus or House of Lords and the Abgeordnetenhaus or House of Deputies. The Herrenhaus is composed of the princes of the blood royal, 68 large feudal proprietors, who are hereditary members, 8 prince bishops, and 131 life members. The Abgeordnetenhaus has 353 members, elected for six years by 4 classes of electors, viz., the large proprietors, the cities, the chambers of commerce and industry, and the rural communes.

The ministry constituted on Nov. 11, 1893, was composed as follows: Minister-President, Prince Alfred Windischgrätz; Minister of the Interior, Marquis Baequehem; Minister of Public Instruction and Ecclesiastical Affairs, Stanislaus, Ritter von Madeyski; Minister of Finance, Dr. Ernst von Plener; Minister of Agriculture, Count Julius Falkenhayn; Minister of Commerce and National Economy, Graf Wurmbbrand; Minister of National Defense, Graf Zeno von Welsersheimb; Minister of Justice, Graf Friedrich von Schönborn; without portfolio, Appolinar, Ritter von Jaworski.

**Finances.**—The revenue of the Government for 1893 was 743,232,000 florins, and the expenditure 736,201,000 florins. For 1894 the total revenue, including 17,200,754 florins from extraordinary sources, was estimated in the budget at 623,157,030 florins and the total expenditure at 620,834,011 florins, including 37,700,065 florins of extraordinary expenditures. Of the ordinary revenue 110,295,000 florins were derived from direct taxes, viz., 35,690,000 florins from the land tax, 30,813,000 florins from the house tax, 11,659,000 florins from the industry tax, 28,978,000 florins from the income tax, and 3,185,000 florins from other taxes; 296,539,875 florins were obtained by indirect taxation, viz., 110,815,080 florins from excise, 21,497,875 florins from salt, 86,616,450 florins from tobacco, 20,542,000 florins from stamps, 37,819,000 florins from judicial fees, 16,678,000 florins from the public lottery, and 2,571,500 florins from various taxes; 5,178,830 florins were received from state properties; 36,825,000 florins came from the postal and telegraph services, 83,554,750 florins from railroads, and 3,635,380 florins from other

services in charge of the Ministry of Commerce; 5,001,960 florins came from forests and domains, 7,910,921 florins from mines, and 643,358 florins from other departments of the Ministry of Agriculture; 1,077,000 florins were receipts of the Ministry of Justice, 742,600 florins were turned in by the Council of Ministers, 1,071,352 florins by the Ministry of the Interior, 314,405 florins by the Ministry of Defense, 6,157,204 florins by the Ministry of Education and Worship, 3,294,849 florins by the Ministry of Finance, and 309,015 florins were miscellaneous receipts.

The ordinary expenditures were allocated as follow: Imperial household, 4,650,000 florins; imperial chancery, 74,627 florins; Reichsrath, 746,939 florins; Supreme Court, 22,400 florins; Council of Ministers, 1,095,243 florins; Ministry of the Interior, 18,458,896 florins; Ministry of National Defense, 17,989,840 florins; Ministry of Education and Ecclesiastical Affairs, 1,758,145 florins for central establishments, 7,282,450 florins for worship, and 14,196,609 florins for education; Ministry of Agriculture, 14,108,253 florins; Ministry of Finance, 88,422,168 florins; Ministry of Justice, 21,307,820 florins; Ministry of Commerce, 101,248,120 florins; Board of Control, 177,600 florins; interest and sinking fund of the public debt, 158,488,038 florins; administrative expenses connected with the debt, 606,400 florins; pensions and dotations, 18,694,750 florins; subventions, 5,930,040 florins; Cisleithan quota of the common expenditure, 107,875,608 florins.

**Cabinet Crisis.**—The Windischgrätz ministry depended on the incongruous coalition of Conservatives, Poles, and German Liberals, which defeated Count Taaffe's electoral reform bill in 1893 and thus forced him to retire. These parties united against the extension of the suffrage because it would reduce their parliamentary representation. They had no principles in common in regard to electoral reform, which they did not expect to defeat permanently, nor to other political questions. The Government was likely to fall as soon as the franchise or any question involving principles arose. The Clericals, whose influence in the Government was predominant, made use of the opportunities that the situation afforded for the advantage of their party and the Church. The Anti-Semites and the Christian Socialists were at first favored by the Government, while repressive measures were applied to check the spread of social democracy. The Christian Socialists, led by Prince Alois Liechtenstein, with whom were associated other young aristocrats, encouraged by the Vatican, aimed to upset the capitalistic system and restore the predominance of the clergy and the feudal nobility in the political and social life of the country. When Prince Liechtenstein went to Linz in January to extend the Christian Socialistic agitation to upper Austria, he applied to the papal Secretary of State for the Pope's benediction upon his movement, which he said would realize the principles of the papal encyclical "*rerum novarum*," and the benediction was communicated to him in a telegram from Cardinal Rampolla. The Anti-Semites, led by Dr. Lüger, of Vienna, held out an ideal of social organization not very different from that of the Christian Socialists, and were to some extent

identified with them. They assailed the Jews because they are the chief organizers of modern industry and finance, and were equally hostile to all capitalists. This party, composed in Vienna of small tradespeople and latterly petty officials, was the rival of the German Liberals, from whose ranks it gained recruits constantly, some of them of the Jewish faith, especially since the coalition of the Liberals with the Clericals. The municipal council was composed of Liberals and Anti-Semites in equal numbers, the balance of power being held by independents, mostly revolted Liberals, who wavered between the 2 parties but inclined more and more to the Anti-Semites. Dr. Lüger was elected Vice-Burgomaster, whereupon Dr. Grübel, the Burgomaster, resigned. When the election for the office took place on May 29 Dr. Lüger was elected, but by so scant a majority that he declined to accept. Popular excitement ran so high that Anti-Semites invaded the council hall to make a demonstration and mobbed Liberal members of the council on the street. The election was postponed, and before the date set the Government dissolved the council.

An electoral reform bill was worked out by a committee of the Reichsrath and accepted by the Government, though it satisfied no party, not even the Clericals, who had the chief hand in its composition. The Prime Minister, who had promised to the working classes that were clamoring for universal suffrage a liberal extension of the franchise, said that it did not go far enough. The Young Czechs, the Poles, and the German Liberals repudiated it altogether. Agricultural laborers were excluded from the benefits of the reform, and of the workingmen of the town only those were admitted to the franchise who have steady employment the year round and had belonged to a mutual-aid society two years, nor could they vote directly, but elect delegates who meet to choose the member of the Reichsrath. Small taxpayers who have paid direct taxes one year would vote directly. The Socialistic celebration in Vienna on May 1, in which 250,000 persons took part, assumed the form of a demonstration for universal, equal, and direct suffrage, with the eight hours' day.

A project of tax reform was elaborated which had better chances of succeeding. It was proposed to exempt from the income tax earned incomes of 630 florins and incomes from investments of 600 florins, and to graduate the tax from  $\frac{6}{10}$  per cent. up to 5 per cent. Persons carrying on a trade or business are subject to an additional impost, as also all joint-stock companies. From this tax small traders were exempted or taxed lighter than before, whereas large traders and manufacturers and corporations were to pay higher taxes. Foreigners were made liable to taxation equally with citizens, and the method of assessment was very stringent and inquisitorial. The official lists of the incomes of taxpayers were to be open to public inspection, and in cases of disputed returns witnesses could be summoned.

This reform was not welcome to the German Liberals, though they did not denounce it on political grounds as they did the electoral bill. They were chagrined at the treatment of nationality questions by the Government at the

dictation of the Clericals. The Italians of Istria were so incensed in January at the action of the authorities in posting official notices in two languages that the session of the Diet was broken up in disorder and the Government dissolved the House, which had passed a resolution establishing Italian as the only language in which proceedings could be conducted. A similar situation arose in Styria, where the Slovenian members in February withdrew from the Diet in consequence of a motion carried by the German majority condemning the concurrent use of their language with German in the gymnasium at Cilli. The Conservatives and Clericals, led by Count Hohenwart, approved the position taken by the Slovenians, and the Minister of Education upheld the project of teaching in the Slovenian language when the matter was discussed by the budget committee of the Reichsrath in June. The committee sustained the view of Herr von Madeyski, and after its decision in favor of the Slovenian demand the German Liberals notified the Prime Minister of their withdrawal from the coalition. The Reichsrath subsequently voted the grant for teaching Slovenian in the school at Cilli by 173 votes to 143.

The resignations of the members of the Cabinet were presented to the Emperor by Prince Windischgrätz on June 18 and were accepted. Count Kielmannsegg, Stadtholder of Lower Austria, undertook to form a Cabinet to conduct business until a definitive ministry should be formed. The provisional Cabinet was constituted on June 20 as follows: President of the Council and Minister of the Interior, Count Erich Kielmannsegg; Minister of Finance, Ritter Böhm von Bawerk; Minister of National Defense, Count Zeno von Welsersheimb; Minister for Polish Affairs, Ritter von Jaworski. The other departments were placed in charge of administrators not holding ministerial rank. The new Prime Minister, who was the author of the scheme for a greater Vienna and attendant public improvements, such as the metropolitan railroad and the regulation of the river Wien, was a Hanoverian by birth and a Protestant in religion, born in 1847, the son of an officer of King Georg. Dr. Ernst von Plener, the late Minister of Finance and the leader of the German Liberals in the Reichsrath, on July 2 resigned his seat in consequence of the failure of the efforts to maintain a permanent coalition of the moderate elements. When the Reichsrath met again in the autumn a definitive ministry was formed, Sept. 14, by Graf Badeni, Governor of Galicia, composed as follows: President of the Council and Minister of the Interior, Graf K. Badeni; Minister of Finance, Belinski; Minister of Justice, Gleispach; Minister of Agriculture, Ledebur-Wicheln; Minister of Commerce, Glanz; Minister of Education, Gäutsch; Minister of National Defense, Graf Welsersheimb.

**Hungary.**—The Hungarian Parliament is composed of the Table of Magnates and the House of Representatives. The upper house contains 20 archdukes, 286 hereditary peers paying 3,000 florins of taxes, 40 prelates of the Roman and Greek Catholic Churches, 11 representatives of Protestant confessions, 17 civil dignitaries, 82 life members, and 3 delegates



from Croatia-Slavonia. The lower house has 453 members, including 40 delegates of Croatia-Slavonia. The representatives are elected for five years by all adult male citizens who pay a certain small amount of land or income tax. The ministry in the beginning of 1895 was composed of the following members: President of the Council and Minister of Finance, Dr. Alexander Wekerle; Minister of National Defense, Baron Geza Fejervary; Minister of Justice, Dr. Desiderius von Szilagyi; Minister for Croatia-Slavonia, Emerich von Josipovich; Minister of Commerce, Bela de Lucae; Minister of the Interior, C. de Hieronymi; Minister of the Royal Court, Count Julius Andrassy; Minister of Worship and Public Instruction, Baron L. von Eotvoes; Minister of Agriculture, Count Andor Festetics.

**Finances.**—The budget for 1895 makes the ordinary revenue 445,375,831 florins, and the transitory revenue 22,435,226 florins, giving a total revenue of 467,811,057 florins. The ordinary revenue was expected to be obtained as follows: State debts, 3,600,391 florins; Ministry of the Interior, 1,351,220 florins; Ministry of Finance, 303,024,837 florins; Ministry of Commerce, 118,859,277 florins; Ministry of Agriculture, 16,054,799 florins; Ministry of Education and Worship, 1,307,124 florins; Ministry of Justice, 742,964 florins; Ministry of Defense, 374,419 florins. The ordinary expenditure was estimated at 421,053,098 florins; transitory expenditure 20,046,853 florins; investments, 20,095,195 florins; and extraordinary common expenditure, 6,597,602 florins; making a total of 467,792,748 florins. The ordinary expenditure was apportioned as follows: Civil list, 4,650,000 florins; chancery, 77,065; Legislature, 1,763,958 florins; Hungary's quota of common expenditure, 26,504,967 florins; imperial pensions, 34,554 florins; Hungarian pensions, 7,902,431 florins; national debt, 126,945,391 florins; debts of guaranteed railroads acquired by the state, 13,671,747 florins; guaranteed interest of railroads, 578,928 florins; administration of Croatia, 7,843,640 florins; accountant-general, 4,000 florins; Minister-President, 411,420 florins; Ministry of the Royal Court, 60,112 florins; Ministry for Croatia, 42,760 florins; Ministry of the Interior, 14,575,314 florins; Ministry of Finance, 76,839,220 florins; Ministry of Commerce, 83,559,891 florins; Ministry of Agriculture, 16,564,716 florins; Ministry of Public Instruction and Worship, 9,589,288 florins; Ministry of Justice, 15,216,024 florins; Ministry of National Defense, 14,071,988 florins.

**Ministerial Crisis.**—The year opened with a crisis of an unusual sort in a country accustomed to smoothly working parliamentary institutions. All the influence of the Catholic Church and of the Conservatives dominating both the Austrian and the Imperial Government was brought to bear upon the King, who was offended with the Hungarian Cabinet on account of the insinuations made against him and his court, in regard to the first rejection of the ecclesiastico-political bills by the House of Magnates. The Clericals hoped to nullify the bills that had been passed by having their application confided to friendly hands. The King was persuaded not only that Dr. Wekerle and

Minister Szilagyi were allied with the party of Hungarian independence, because the Kossuth faction had voted with the Government on the question of civil marriage, but that the seceders, led by Count Szapary, and the party of Count Albert Apponyi could be fused with the moderate Liberals and a conciliatory ministry formed that would temper the most obnoxious of the ecclesiastico-political measures in their execution. The King delayed giving his sanction to the bills that had been passed until the Liberals were exasperated, and finally he intimated that he lacked confidence in the Wekerle ministry, forcing Dr. Wekerle and his colleagues to resign in the beginning of January, 1895. Without consulting with Dr. Wekerle, he sent for Count Khuen-Hedervary, the Ban of Croatia, whom he expected to form a fusion Cabinet. Count Khuen accepted the Liberal programme, but proposed that the two remaining ecclesiastico-political bills should be postponed till the autumn, and that the fusion of parties should be the declared aim of his policy. To this the Liberals would not agree, considering it a renunciation of their standpoint, equivalent to the acceptance of a different *régime*. After Count Khuen had given up the task on Jan. 9, Koloman Szell, another advocate of the immediate fusion of parties, was asked to attempt it, but he declined. Baron Banffy, President of the Chamber of Deputies, was then summoned to the King, who had at length discovered the error into which he had been led regarding the temper of the Hungarian Parliament and people. Baron Banffy was a thoroughgoing Liberal, who insisted on carrying out the whole party programme. As a Protestant, Banffy was even more obnoxious to the Clericals than Wekerle. He had established a reputation for energy and determination by his centralizing and Magyarizing course as an administrator in Transylvania, about which the Roumanians and Saxons complained bitterly, and as President of the House of Deputies he gave offense often by his stringent application of the rules; but now Saxons, Radicals, and Separatists were willing to follow him as the mandatory of the Liberal party.

The new Cabinet was constituted on Jan. 15, 1895, as follows: President of the Council, Baron Desiderius Banffy, born Oct. 28, 1843, in Klausenburg, son of a provincial prefect belonging to the ancient nobility of Transylvania, studied in Leipsic and Berlin and traveled extensively, twice an unsuccessful candidate of the Left Center for the House of Deputies, prefect of the county of Szolnok-Dobka (1875-'91), and commissary of Beszerecz-Naszod County (1883-'91), member of the House of Magnates, and elected a life member after the reform, supervising curator of the Reformed Church of Transylvania, elected as a Liberal to the Chamber in 1892, and immediately chosen its president; Minister of the Interior, Desiderius Perczel; Minister of Finance, Dr. Ladislas Lukacs; Minister of Industry and Commerce, Ernest Daniel; Minister of Agriculture, Count Andor Festetics; Minister of Education and Worship, Dr. Julius Wlassies; Minister of Justice, Alexander Erdelyi; Minister of National Defense and *ad interim* Minister of the Royal Court, Baron Geza Fejervary; Minister for Croatia-Slavonia, Emerich de Josi-

povich. Baron Samuel Josika was appointed minister at the Austrian court on Jan. 18.

**The Ecclesiastico-political Bills.**—Though the issue of the crisis was a blow to those who brought about the overthrow of the Wekerle Cabinet, the Ultramontanes were not disposed to give up the struggle, although Cardinal Vaszary, the primate, and the great majority of the Hungarian bishops were now willing to accept the secularizing laws, recognizing the fact that they were approved by the bulk of the Catholic population. Count Ferdinand Zichy and Count Moritz Esterhazy had organized a Catholic People's party, which already had wrested a seat from the Liberals in a Slovak district. In social politics the new party was closely affiliated to the Anti-Semites and the Christian Socialists of Austria, and, like the latter, it was encouraged by the politicians of the Vatican, whose aim was not only to preserve the prerogatives of the Church in Austria-Hungary, but to undermine the triple alliance and restore the temporal power of the Pope. The programme of the Hungarian Ultramontane Democrats declared that their object was to preserve the Christian character of the social order, to heal the wounds inflicted upon the Catholic Church in Hungary as well as elsewhere, and to watch over the economic and political interests of the people and the country. Taking their stand on the Hungarian Constitution and the compromise of 1867, they demanded a revision of the laws; the inviolability of the rights and liberties of the Catholic Church; freedom of education throughout the whole course of public instruction for Catholics and for other creeds; consideration of the interests of agriculturists, particularly of small proprietors, in matters relating to customs and communications; legislation to secure the welfare of the agricultural population; state-supported associations to provide for the requirements in the way of credit of small agriculturists and traders and facilities for the more favorable disposal of agricultural produce; the creation of a more just system of taxation, the fixing by law of a minimum income required for existence according to the Hungarian conditions of life, which shall be free from all taxation, and a tax on transactions in the stock exchange; simplification of the system of taxation, such as will enable every taxpayer to estimate exactly the amount of his contributions; protection of small tradesmen and laborers against the competition of large manufacturers and capitalists; regulation of the relations existing between the employer and his work people, particularly the protection of the family and of the moral and physical interests of the laborers, together with an extension of working-class insurance and more stringent regulations regarding periods of rest; administrative reform that is not calculated to increase the power of the state and exclude the co-operation of the people; friendly consideration of the claims of the nationalities as far as is consistent with the unity and national character of the Hungarian state; the reform of electoral abuses and the establishment of an adequate system of identification.

The People's party put forward candidates in the six districts where the newly appointed ministers were seeking re-election. The priests, es-

pecially in the districts having a large Slav population, took an active part, threatening the ignorant peasantry with the vengeance of Heaven if they opposed the Ultramontane candidates, and administering oaths at mass binding the members of their congregations to give their votes as the Church desired. The public authorities on their part resorted to coercion and intimidation, sending troops into the doubtful districts and making many arrests. The elections were very tumultuous. All the ministers were re-elected. In a subsequent by-election the Government candidate was counted in only by annulling a number of votes that were declared illegal. The Liberal candidate thus irregularly elected declined to take the seat, and another election was necessary. While the ministers deprecated the formation of a political party on religious lines as a great danger to the country, the Vatican gave public support to the movement in the form of a letter from Leo XIII to Count Zichy, approving the new union of Catholics that had been formed for the defense of the rights of the Church and the religious dignity of Hungary in the Parliament. In March a papal allocution was issued containing a protest against the civil-marriage law, which had been promulgated and would go into force on Dec. 1, 1895.

The interference of the priests in the elections provoked the Liberals to propose a law in Parliament to punish members of the clergy who thus abuse their office and to disqualify a candidate who makes use of religious services or church edifices for electioneering, who promises voters religious benefactions or threatens them with ecclesiastical penance, or who exhibits at electoral meetings objects of religious veneration or such as are used in church ceremonies.

The resolute attitude of the Liberals was shown in the election of ex-Minister Szilagyi to the presidency of the Chamber on Jan. 21 by a majority of 66. The two remaining ecclesiastico-political bills were submitted to the Chamber of Magnates when it met on March 20. At the suggestion of Count Emerich Szechenyi the bill for freedom of worship was amended by striking out a provision that the legal position of persons belonging to no received or recognized religion should be regulated by a special ordinance, which could not be revoked or amended without the approval of the Legislature. The bill for the reception of the Jewish faith among the state religions was rejected on March 24, but it was passed by the casting vote of the President on May 15, when the bills were returned from the lower house. A clause providing for the adoption by Christians of the Jewish creed was, however, suppressed. The religious freedom bill was again mutilated by the striking out of the clauses relating to persons having no religious profession.

Of the ecclesiastical reforms that had already become law the state registration of civil marriages and the law relating to the religion of the children of mixed marriages went into operation on Oct. 1, 1895. In the ceremony of civil marriage the official is bound to inform the contracting parties that the fact of having gone through the civil form of marriage does not absolve them from the fulfillment of their religious obligations.



The prescribed questions and the words declaring the parties legally married must be uttered in the Hungarian language. No fee may be charged for civil marriage. When the new law regulating the religious training of the children of parents professing different faiths went into force the decree issued by Count Csaky, Minister of Education, on Feb. 26, 1890, which threatened priests with punishment who acted contrary to the laws, and brought on the whole politico-religious conflict, was withdrawn.

**Conflict with the Vatican.**—In April, while Baron Banffy, in communication with the King, was considering what course to pursue regarding the ecclesiastical bills that had just been rejected by the House of Magnates, the papal nuncio, Mgr. Agliardi, went to Hungary on a visit to the primate. It was a scarcely disguised political mission, for in public utterances as well as in published conversation he took occasion to promote and encourage resistance to the ecclesiastical measures that had already become law and to excite the people against the Government. Baron Banffy drew up a protest against Mgr. Agliardi's proceedings, which he sent to Count Kalnoky with the request that it be forwarded to the Vatican. In his note, dated April 26, the Hungarian Premier informed the imperial Minister of Foreign Affairs that he would have to reply to an interpellation in the Chamber, and should say that the papal nuncio had exceeded his functions as a foreign representative, which were not different from those of an ordinary ambassador, and that representations had been made at the Vatican. Count Kalnoky, in his answer, expressed the opinion that the conduct of the nuncio showed a reprehensible want of tact, and that if he had really acted in the manner described he considered that representations were desirable. In Austria, where the Clericals were not in opposition, but dominated the Government, the intervention of the Vatican in domestic politics was not resented as jealously as in Hungary. Therefore the protest of the Hungarian Government was not forwarded at once, but was kept back in order that it might be couched in diplomatic phrases that would harmonize with the divergent policies of the two governments. Baron Banffy, in replying to the interpellation on May 1, took the ground that the influence of the Holy See in ecclesiastical matters could not be exercised by the nuncio, but solely by the Prince Primate of Hungary, and said that this view of the Hungarian Constitution was shared by the Common Austro-Hungarian Government. On the day following an official *communiqué* was published in the "Politische Correspondenz" of

Vienna expressing surprise at the statements of Baron Banffy, which were declared to be in many respects inaccurate, and consequently did not correspond with Count Kalnoky's views; it was not known how Baron Banffy was authorized to declare that Count Kalnoky shared the views of the Hungarian Government or that explanations had been demanded of the Vatican in the absence of data proving that the papal nuncio had really interfered in the internal affairs of Hungary. Baron Banffy went at once to Vienna to seek explanations. He let it be understood that he would not remain at his post if his views as to the purely diplomatic standing of the nuncio were not accepted, and if the Foreign Office refused to represent faithfully the views of the Hungarian Government in regard to foreign intermeddling in the domestic affairs of Hungary. Count Kalnoky held that the papal nuncio, while theoretically a diplomatic representative, held a different position in fact from the representatives of secular powers, because he was also the supreme chief of the Catholic Church in a Catholic state. Count Kalnoky, in his correspondence with the Hungarian Premier, had insisted upon a formal assurance that in future no parliamentary communication should be made concerning the Ministry of Foreign Affairs before its contents and form have been approved by the latter. The Hungarian Chamber, on hearing the correspondence, in which the Minister of Foreign Affairs on April 27 said that he was ready to complain at the Vatican of the tactless proceedings of the nuncio, voted that Baron Banffy's inference that representations would at once be made was justified. Count Kalnoky had placed his resignation in the hands of the Emperor-King on May 2. Franz Josef I, in view of the critical political situation in Austria as well as in Hungary, was unwilling to part with either the Foreign Minister or the Hungarian Premier, and therefore wished to treat their differences as a personal question that mutual explanations and temporary concessions would accommodate, leaving in abeyance the fundamental disagreement in policy. He consequently wrote to Count Kalnoky on May 6 declining to accept his proffered resignation. The proposed solution did not satisfy the Hungarian parliamentarians, who in interpellations in which Ministerialists and Opposition members concurred, called upon the Cabinet to vindicate the constitutional position of Hungary. As the result of a second visit of Baron Banffy to Vienna, Count Kalnoky, on May 15, again tendered his resignation, and it was accepted by the Emperor.

## B

**BAPTISTS. Statistics.**—The "American Baptist Yearbook" for 1895 gives the following totals of the statistics for 1894 of the Baptist churches in the United States: Number of churches, 37,910; of ministers, 27,091; of members, 3,637,421; of baptisms during the year, 205,857; net increase of members for the year, 140,433. The Sunday schools returned 1,500,834 pupils.

Amount of contributions: For salaries and expenses, \$8,046,668; for missions, \$1,138,059; for education, \$174,865; for miscellaneous objects, \$2,313,098; aggregate of contributions, \$11,672,691, against \$12,560,714 in 1893.

The educational institutions comprise 7 theological schools, with 67 instructors, 937 students, and property valued at \$3,514,103; 35 universities and colleges, with 722 instructors, 9,385 pu-

pils, 946 of whom were preparing for the ministry, and \$19,370,888 of property; 27 seminaries for the education of young women, with 3,433 pupils and \$3,780,049 of property; 56 institutions for both young men and young women, with 12,774 pupils and \$3,845,146 of property; and 34 institutions for the colored people and Indians, with 4,808 pupils and \$1,417,438 of property; making, in all, 159 institutions, with 1,846 instructors, 31,337 pupils, 2,715 of whom are preparing for the ministry, and \$31,927,624 of property. Of the property of these institutions, \$14,500,782 is in the form of grounds and buildings and \$15,513,579 in endowments. The schools having the most valuable property are the University of Chicago, \$5,034,000; Brown University, \$2,791,527; Colgate University, \$2,352,000; the University of Rochester, \$1,204,078; and Columbia University, \$1,062,000. In North America, outside of the United States, including the British provinces, Mexico, Cuba, Hayti, Jamaica, other West India islands, and Central America, are returned 1,086 churches, 675 ministers, 131,316 members, and 8,451 baptisms during the year; in South America (Argentine Republic, Brazil, and Patagonia), 16 churches, 12 ministers, 648 members, and 159 baptisms; in Europe (Austria-Hungary, Denmark, Finland, France, Germany, Great Britain and Ireland, Holland, Italy, Norway, Roumania and Bulgaria, Russia and Poland, Spain, Sweden, and Switzerland), 3,855 churches, 3,121 ministers, 445,020 members, and 24,756 baptisms; in Asia (Assam, Burmah, Ceylon, China, India including the Telugus, Japan, Orissa, and Palestine), 895 churches, 562 ministers, 111,010 members, and 5,705 baptisms; in Africa, 65 churches, 86 ministers, 5,511 members, and 469 baptisms; in Australasia, 209 churches, 153 ministers, 17,928 members, and 1,304 baptisms; total for the world, 44,036 churches, 31,700 ministers, 4,348,854 members, and 276,701 baptisms; showing an increase from the previous year of 1,829 ministers, 164,347 members, and 24,977 baptisms during the year.

**American Baptists.** *Southern Baptist Convention.*—The Southern Baptist Convention met in Washington, D. C., May 10. The Rev. Jonathan Haralson was unanimously re-elected president. The Foreign Mission Board reported that its total receipts had been \$125,417, of which amount the churches had contributed \$123,262, a larger sum than ever before, and that the debt had been reduced to \$20,000. Six missionaries had been sent out during the year, but the number was not sufficient to replace those who had returned or were resting at home. Several persons had offered themselves as missionaries, but they could not be accepted for want of money to support them. The reports from the mission fields showed that in China there were 16 churches, 50 out stations, 41 missionaries, 25 native helpers, and 1,131 members, and 118 persons had been baptized during the year; in Japan, 1 church, 8 out stations, 6 missionaries, 5 native workers, 40 members, and 9 baptisms; in Africa, 4 churches, 7 missionaries, 6 native workers, 239 members, and 67 baptisms; in Mexico, 32 churches, 20 missionaries, 1,120 members, and 226 baptisms; in Brazil, 14 churches, 14 missionaries, 610 members, and 133 baptisms; and

in Italy, with principal stations in Rome and Florence, 18 churches, 46 out stations, 3 missionaries, 28 Italian helpers, 353 members, and 28 baptisms. Sunday schools and day schools are connected with all these missions. The contributions of the native churches amounted to \$6,458, an average of nearly \$1.90 per member. The Home Mission Board had received during the year \$215,852, or \$15,319 more than in the previous year. It had begun the year with a debt of \$6,763, and had met all its expenses, had paid \$9,476 on a house of worship in New Orleans, had reduced the debt to \$1,100, and had a small balance in the treasury. It had employed 425 missionaries, an increase of 44, under whose labors 178 churches had been constituted, 52 houses of worship built, 7,392 Bibles and Testaments and 584,938 tracts distributed, and 5,921 persons baptized. Seventy-five missionaries had been at work in the Indian Territory and Oklahoma. Institutes had been held in Georgia and Alabama at which colored pastors had been given instruction. Progress was reported of work among the Germans. The reports from Cuba were meager and not definite. The report of the board contained the reflection that "notwithstanding all that has been done by our churches and mission boards since 1845, and the great success that has attended our efforts, the Baptists having increased from 450,000 to 2,748,171 (including the colored churches) in this Southern land, there are more unregenerate persons within the limits of this convention than there were fifty years ago." The Sunday-school Board had received \$53,034, as against \$48,539 the year before. Its benevolent work included gifts in money to organizations in 9 States and to the Foreign Mission Board for Bible schools in foreign fields, amounting in all to \$4,375; gifts of literature amounting to \$1,190 to needy schools, and full sets of publications to all the missionaries of the Foreign Board and some of the Home Board; and gifts of Bibles to the needy, for which \$351 were expended. A report urging the introduction by the churches of the tithing system for raising money was adopted. The report of a conference held at Fortress Monroe with the American Baptist Home Missionary Society with reference to co-operation in the work among the colored people was adopted. A committee was appointed to devise plans for reaching the masses of the Southern Baptists in the interest of missions. A report respecting young people's meetings recommends that such churches as wish to have young people's meetings should do so, but that each church should keep entire control of the meeting, and pastors should keep the societies in close sympathy with the Southern Baptist Convention. Mr. Alberto J. Diaz, the missionary of the convention in Cuba, has under his charge, in different parts of the island, 27 churches and stations, 23 ordained ministers (besides many unordained laborers), 26 Sunday schools with 2,228 teachers and pupils, and 2,600 church members.

The Woman's Missionary Union returned resources amounting to \$24,933, including \$5,000 raised to pay off the debt.

A conference in the interest of the Young People's Societies was held in Washington pre-



vious to the meeting of the convention. Propositions were made for a general organization auxiliary to the convention, and others in favor of affiliation with the Baptist Young People's Union of America; while a considerable party opposed any general organization. A motion, called a "compromise report," for the formation of a general union auxiliary to the Southern Baptist Convention was voted down, 164 to 215.

**Home Mission Society.**—The sixty-third annual meeting of the American Baptist Home Mission Society was held in Saratoga, N. Y., May 30. The receipts of the society for the year had been \$515,447, and the expenditures \$455,024. The year had been begun with a debt exceeding \$101,000, with a prospect, at the usual rate of expenditure, of adding from \$30,000 to \$40,000 to it; but by careful management the amount added had not been more than \$7,000.

Eleven hundred missionaries, teachers, and other laborers had been supported wholly or in part by the society, distributed as follows: In the New England States, 41; in the Middle and Central States, 55; in the Southern States, 201; in the Western States and Territories, including 76 in Indian Territory, 771; in the Canadian Dominion, 7; in Mexico, 23. French missionaries have wrought in 8 States; Scandinavian missionaries in 23 States; German missionaries in 19 States, Manitoba, and British Columbia; colored missionaries in 19 States and Territories. Of these agents, 247 had labored among the foreign populations, 43 among the colored people, 24 among the Indians, 17 among the Mexicans, and 512 among Americans. They represented 16 nationalities, or peoples—viz., Americans, Germans, French, Portuguese, Swedes, Danes, Norwegians, Finns, Welsh, Bohemians, Poles, Indians, negroes, Chinese, Mexicans, and Italians. They had supplied 1,933 churches and out stations, and returned 50,132 church members, 6,192 received by baptism during the year, 150 churches organized, 1,242 Sunday schools with an attendance of 72,115 pupils, and \$91,152 of benevolent contributions. The society aided in the maintenance of 35 established schools for the colored people, the Indians, and the Mexicans, 16 day schools for the Chinese, and 2 day schools in Utah and 1 in New Mexico. Of the 28 schools for the colored people, 15—including 3 of the higher schools and 12 of the secondary or academic schools—were under the entire control of colored trustees, but are subject to visitation by the superintendent of education, and made the same reports to the office in New York as the schools controlled directly by the society or by boards of white trustees. In all the schools for the colored people, 232 teachers were employed. The whole number of pupils was 4,358, of whom 373 were studying for the ministry, 1,379 were preparing to teach, 20 were in the teachers' professional course, 35 in the missionary training course, 32 in the nurses' training course, and 1,128 had received systematic training in some line of industrial work. Two hundred and ten pupils were enrolled in the schools for Indians, 9 of whom were studying for the ministry and 30 preparing to teach. Of the 15 missionaries employed by the society in Mexico during the year, 10 were Mexicans. Besides these, the two Women's Home Missionary Soci-

ties, at Chicago and Boston, had supported 3 women missionaries and 9 teachers.

In the church edifice department, 89 churches had been aided by gifts and loans during the year, in the sum of \$33,493.

The report contained some observations regarding the relations of the society with the people of the South, which were called out by discussions in the report of the previous year concerning the origin of the fires by which 3 of the society's school buildings had been burned, which fires were supposed to be of incendiary origin, and were attributed, as was also the beating of one of the teachers, to Southern hostility to negro education. These allegations were denied by Southern Baptists; the facts concerning the fires were again inquired into, and it was found that one of them was accidental; another was probably instigated by personal malice; and with respect to the burning of Benedict College, Columbia, S. C., positive proof was wanting. "That," however, "there is, unfortunately, extensive though not universal prejudice in the South against higher education for the negroes, as provided for them in the society's schools, and that this prejudice has seriously hindered our work, is capable of overwhelming proof. The most serious event alluded to in the last report—the brutal beating of Prof. Reddick by white men for the offense of teaching and preaching to negroes—has never been called in question. During the past year, however, there has been not only no violence exhibited toward our work, but there has been manifested a growing spirit of appreciation of its importance, its urgency, and its wisdom. We believe there is a greatly improved public sentiment, among a large body of Southern people, certainly, regarding this whole matter." Illustrations were given of this improving condition. The belief was expressed that the plan of co-operation between Northern and Southern Baptists would be productive of results of a high order, especially in improved methods of conducting missionary work by the negro evangelists.

The original charter of this society was granted in 1832, and contemplated simply "the preaching of the Gospel in North America." In 1849 it was found desirable to amend the charter, and in 1877 it was still further amended so as to provide for the establishment and maintenance of schools for freedmen in the South. Now it has been found desirable still further to broaden the scope of the society, so as to enable it to establish, maintain, and aid Baptist churches and missions, acquire sites for buildings, and establish and care for schools in connection with its missionary work. It was already authorized to take and hold necessary real estate and receive, accumulate, and hold in trust endowment funds for the support of its freedmen's schools, provided the income from the whole did not exceed \$50,000 a year, and to hold real estate and endowment funds for its general work, provided the income did not exceed \$10,000 a year. By amendments to the charter recently obtained in the State of New York, these restrictions are removed.

**Publication Society.**—The seventy-first annual meeting of the American Baptist Publication Society was held at Saratoga, N. Y., June 1,

The receipts from sales had been \$532,763, against \$497,807 in 1894, and from other sources \$19,950. The sum of \$6,766 had been transferred from the profits of the publishing department to the missionary department. The whole amount received for Bible work had been \$15,243, and the amount received for missionary work \$112,609. Sixty-three new publications had been issued, of which 362,250 had been printed. Eighty-five missionaries and workers had been employed, in connection with whose labors 648 persons had been baptized, 62 churches constituted, 244 Sunday schools organized, 500 Sunday schools aided by gifts of the Scriptures, books, etc., and 233 ministers aided in grants for their libraries. Three chapel cars had been in operation along lines of railroad, visiting destitute places, with the result of many conversions. A resolution was unanimously adopted protesting against the arrest and punishment of persons who, having conscientiously observed the seventh day as a day for religious rest and worship, have on the first day of the week conscientiously engaged in labor which in no wise disturbed other citizens, as a violation of the rights of religious liberty. A conference was directed with the American Bible Society respecting the circulation of the Scriptures in languages other than English, that its co-operation may be secured for publishing and distributing the versions made by Baptist missionaries and approved by Baptist missionary societies.

**Missionary Union.**—The eightieth annual meeting of the American Baptist Missionary Union was held at Saratoga Springs, N. Y., beginning May 27. The society had begun the year with a debt of \$203,596, in view of which it had been obliged to reduce its appropriations by \$109,000. On this basis it had met the year's appropriations and reduced the debt by the amount of \$13,639. The total income of the society had been \$661,255. The appropriation had amounted to \$564,200, and \$83,416 had been added to the permanent fund and bond account. A noteworthy feature of the work abroad was the increase of the number of self-supporting churches in heathen lands from 377 to 458, and of self-supporting schools from 247 to 369. Other items of increase were: Missionaries, 8; native preachers, 82; churches, 41; church members, 5,770; pupils in Sunday schools, 1,330. Connected with missions to "nominally Christian" lands were 1,167 preachers; with missions to the heathen, 1,053; making in all 2,220; churches in the former missions, 866; in the latter, 787; making a total of 1,653. The baptisms during the year numbered 11,791. The present membership in the churches was 190,998, and the number of pupils in Sunday schools 92,326. Amount of contributions spent on the field, \$289,532. An amended constitution for the Union was adopted, among the features of which are the requirement that at least one fifth of the board of managers shall be women, and the constitution of the presidents of the women's foreign missionary societies *ex-officio* members of the board of managers. An application on behalf of the mission of the Rev. A. Ben Oriel to the Jews in Jerusalem to be taken under the care of the Union was referred to the Executive Committee. A committee on self-support on foreign

fields reported, recommending steps to promote this object. The true aim, the report said, being the planting of native churches that will be self-supporting and reproductive, involves a modification of the excessive and sentimental pity which many feel with regard to the hardships that the natives must undergo. Proportionate giving should be urged; so, also, native churches should be plain in architecture and cheaply constructed; the congregation rather than the missionary should make the choice of the pastor, and the practice in some churches of sending money to support native preachers should be discouraged. Some form of industrial education also should be maintained in connection with the mission. A resolution was adopted favoring the formation of home-mission societies in all missions, so that lessons of self-support may be taught to the converts.

**Other Societies.**—The total receipts of the Baptist Education Society for the year had been \$20,211, of which Mr. John D. Rockefeller had contributed \$19,091. Payments of \$16,289 had been made to 13 colleges which had collected altogether \$76,907 of endowment pledges; making a total addition to their endowment funds of \$93,196.

The Woman's Baptist Home Missionary Society, Chicago, had had in its employ during the whole or part of the year 114 missionaries, at 82 stations, among native Americans, European populations, Jews, Indians, negroes, Chinese, Mormons, and Mexicans. It and its auxiliaries co-operate with the American Baptist Home Mission Society and with State and Territorial conventions on the frontier in the support of certain teachers and beneficiaries, for which it had contributed \$5,062 during the year. At the thirteenth annual commencement of its training school, June 29, 1894, 12 American, 4 Swedish, 3 German, and 1 Icelandic pupils were graduated; all but 2 of whom entered the mission service in some form. A movement has made considerable progress for the establishment of a training school for colored women. The total receipts of the society for the year were \$64,129, and the disbursements \$62,710.

The work of the Woman's Baptist Home Mission Society, centered at Boston, Mass., is chiefly educational. Sixty teachers were under appointment in 1894, for whose work \$27,000 had been expended. Their field embraced Alaska, China, Mexico, the Indians of the United States, etc.

The twenty-fourth annual meeting of the Woman's Baptist Foreign Missionary Society of the West was held at Fort Wayne, Ind., April 16 to 18. The financial report showed a deficiency for the year on general account of \$9,530, the receipts having been \$43,278, and the expenditures \$52,808. The receipts for the Home for Missionaries' Children were \$1,516, and the expenses \$1,669, but a deficiency was averted by the aid of a cash balance from the previous year. The society had 47 missionaries in the field, with 2 under appointment, 110 Bible women, and 37 schools, with 2,050 pupils and 100 native teachers. During the year 4 new missionaries were sent out and 2 returned to their fields, and 140 baptisms were reported. Ten candidates were under appointment or in preparation.



The fifth international delegate convention of the Baptist Young People's Union of America (United States and Canada) was held in Baltimore, Md., July 18 to 21, and was attended by 6,559 enrolled delegates. The board of managers reported that \$14,358 had been raised during the year toward a proposed founding fund of \$50,000, making the whole amount secured so far \$32,851. The Union furnishes three courses of religious study for its members—the Bible Readers' Course, the Conquest Missionary Course, and the Sacred Literature Course—in which examinations are conducted each year. The meetings of the convention were devoted to addresses, educational discussions, conferences, and religious exercises.

**German Baptist General Conference.**—

The German Baptist Triennial Conference met at Dayton, Ohio, Sept. 24. The Rev. J. Grimmel was re-elected moderator. Although the past year had not been as fruitful of converts as the preceding one, 1,400 baptisms were reported in 230 churches numbering about 20,000 members. The discussions of the conference concerned chiefly the Theological Seminary at Rochester, N. Y., home missions, foreign missions in Germany and other countries, and publication. A probability was announced that the aid hitherto afforded to the Theological Seminary would be withdrawn on account of financial stringency. An effort was determined upon to raise the sum of \$100,000 for the support of the German professors, and subscriptions of \$10,000 toward this amount were taken up in the conference. Demands for home missionaries were reported coming in from every quarter. A question as to the policy of continuing German churches arose during the discussion of this subject, when the Rev. J. Grimmel, moderator, said that such churches would be necessary as long as immigration continued. It would be no gain for Christ's kingdom or for America if these churches should too soon become English-speaking. To most of the 10,000,000 Germans in the United States the Gospel must be preached in German if they are to understand it. The process of assimilation, however, was constantly going on. Ten thousand German members had already taken out their letters and joined English-speaking churches—"a proof to the Home Mission Society that their work had not been in vain." Arrangements were making for the co-operation of the publication house with the American Baptist Publication Society, and the subject of making the concern a part of that society was referred to a committee, to report to the next triennial conference. Reports of the orphan asylum at Louisville, Ky., and of the Mutual Aid Society were considered.

**Baptist Congress.**—The thirteenth meeting of the Baptist Congress was held in Providence, R. I., Nov. 12 to 14. The Rev. E. B. Andrews, D. D., LL. D., President of Brown University, presided. The first theme discussed was that of "Monism," which was considered in papers on its philosophical basis, by Prof. F. C. French, of Vassar College; its relation to theology, by the Rev. Dr. A. Hovey; and its ethical bearing, by Prof. Gordon B. Moore, D. D., of Furman University, South Carolina. "The Centralization of Baptist Polity" was discussed

by the Rev. J. D. Christian, D. D.; the Rev. Cephas B. Crane, D. D.; and the Rev. D. W. Faunce, D. D. Each of the appointed speakers conceded imperfections in the working of Baptist polity, but none suggested increase of centralization as a remedy. Papers referring to the New Testament were on the "Canonicity of its Books in the Light of Modern Research," by the Rev. D. D. Hahn, and "Types of New Testament Theology," by the Rev. P. A. Nordell, D. D. "The Relation of the State to Semipublic Corporations and their Employed" was presented in a paper sent by the Hon. T. E. Barkmerth in reference to railroads, and a paper by Prof. Albion W. Small in reference to trusts and monopolies. On the subject of "The Physiological Basis of Morality," the appointed speakers were Prof. W. I. Poteat, the Rev. S. B. Meerer, and Smith Baker, M. D. The closing addresses were on "The Baptism of the Holy Spirit," by the Rev. F. L. Chapell and the Rev. H. M. Sanders, D. D. The reading of the papers by appointed speakers on each topic presented was followed by volunteered addresses from other members of the congress.

**British Baptist Union.**—The annual meeting of the Baptist Union of Great Britain and Ireland was held in London, beginning April 23. The Rev. J. G. Greenhough, of Leicester, presided. The report of the council showed that £147,626 had been spent during the year on new chapels, £30,576 on improvements, new schools, etc., and £50,166 in paying debts. Six associations, 1 college, 49 churches, and 18 personal members had joined the Union during the year. A question had been raised, at the autumnal meeting in 1894, on the admission of a woman who had been appointed as a delegate. While the council regarded this appointment as a "revolutionary innovation," it had decided that the constitution admitted of the appointment of women as delegates. A resolution was adopted with reference to making an effort, in connection with the centenary of the Home Mission fund in 1897, to secure it an adequate permanent increase. It was represented in the discussion that the average income of the mission pastors was about £90. In some cases it was only £60 or £70. Resolutions were passed that the meeting "views with the greatest distress the growth of gambling among all classes of the community, and would earnestly call upon the Legislature to turn their serious attention to enforce the laws already existing, and to enact such other measures as will bring about the object desired"; protesting against the atrocities that had been perpetrated in Armenia, and calling upon the Government, "in accordance with treaty obligations, to take immediate steps to prevent the continuance of such barbarous persecution"; authorizing an appeal to Parliament to appoint a national board of conciliation to which disputes between employers and employed may be referred, with a view to settlement with promptitude and justice; approving the Welsh disestablishment bill, hoping that in its main provisions it would become a law, and expressing the belief that all State establishment of religion is opposed to the progress of Christ's kingdom on earth, and consequently to the best interests of the nation;

approving the local veto bill (of the sale of intoxicating liquors). The officers of the union were requested to prepare and submit to the autumnal assembly a letter to his Holiness the Pope, in reply to his recent invitation to English Christians to return to the Church of Rome.

The autumnal assembly of the Union was held at Portsmouth, beginning Oct. 8. The address of the president, Mr. Greenhough, concerned the question of Catholicism and reunion which had been much discussed. A reply, in the form of an address to the English people, was adopted to the encyclical which had been promulgated from the papal court inviting a return to the Catholic fold. In it the society declared that it could not adopt the position "that complete unity of opinion is an indispensable condition of Christian fellowship or intercommunion, but reunion with the Roman Church is rendered impossible by the maintenance of beliefs and practices which we deem subversive of the first principles of Christ. We, in common with a vast majority of English Christians, are under the solemnly pronounced 'anathema' of the Roman Church because we deny the following propositions :

"1. 'That it is a dogma divinely revealed that the Roman pontiff, when he speaks *ex cathedra*, is possessed of infallibility, and that therefore such definitions of the Roman pontiff are irreformable.'—*Decrees of the Vatican Council.*

"2. That the Apostle Peter was 'appointed the prince of all the apostles and the visible head of the whole Church militant'; and 'that the Roman pontiff is the successor of blessed Peter in this primacy.'—*Ibid.*

"3. That the Virgin Mary and other saints are our intercessors in heaven, and that 'it is good and useful suppliantly to invoke them.'—*Decrees of the Council of Trent.*

"4. That 'honor and veneration' are to be given to 'images of Christ, of the Virgin, and of the other saints,' also to 'relics of saints.'—*Ibid.*

"5. That there is a purgatory, and that the souls there detained are helped by the suffrages of the faithful.'—*Ibid.*

"6. That Christ instituted an order of sacrificing priests to 'offer his own body and blood.'—*Ibid.*

"7. That the Lord's Supper is a propitiatory sacrifice in which bread and wine become the very body of Christ, and as such are offered to God.—*Ibid.*

"8. That sacramental confession and penance were instituted by Christ.—*Ibid.*

"9. That in 'absolution' sentence is pronounced by the priest as a judge.—*Ibid.*

"10. That 'the power of granting indulgences was granted to the Church.'—*Ibid.*

"11. That baptism is necessary to salvation, and that by it we are made entirely new creatures.—*Ibid.*"

Reference was made in this address to the pastoral letter of the Archbishop of Canterbury, and renewed assurance of brotherly love was made to all reformed Churches in English-speaking lands. The address then directed itself to those Englishmen "who do not glory in the Christian" name, confessing the faults and deploring the divisions of the Church and its failure to reach the divine ideal, which was, however, "sought more ardently and with more definite conceptions of its worth and world-wide significance than at any other time"; and, continued, "we invite men to judge and condemn our defects, but we entreat them not to spurn

the ideal because too sublime for present attainment, or because it has been travestied by unworthy institutions in the past. In the greater matters of belief all Christians, including the Romanists, are agreed; we differ in things supplementary." The assembly approved the work accomplished by school boards since 1870, and demanded that the school board system be extended to every part of the country, and a board school be placed within easy and reasonable distance of every family; renewed its protest against denominational teaching and preferences; demanded that all public elementary schools be placed under the management of boards elected by the people; and instructed the council of the Union to co-operate with other representative unions and conferences in the formation of a national vigilance committee for the maintenance of the rights of nonconformists. The assembly's protest against all establishments of religion by the state was renewed. The system of local option for the control of the traffic in intoxicating drinks was approved. An appeal was made at the meeting of the Missionary Society for an additional income of £10,000, simply to maintain present operations in foreign missions, leaving re-enforcements out of the question.

**Baptist Missionary Society.**—The one hundred and third annual meeting of the Baptist Missionary Society was held in London, May 18. The report showed that the total receipts on general account had been £60,000, or £3,219 more than in 1893, and the expenditures had been £68,753, showing a decrease of £1,868. The society's debt had risen from £14,183 to £22,860. The unappropriated balance of the Centenary fund would reduce this figure to £7,056, that fund having now produced £118,717. The churches were reminded that without an increase of £9,000 in the ordinary income a further heavy debt would be incurred. From the mission fields were returned: India, 77 European and native missionaries at 178 stations, 6,115 children in the day schools under 221 native Christian teachers, and 5,313 pupils and 313 teachers in Sunday schools; China, 21 missionaries and 53 native evangelists at 188 stations in Shan-Tung, Shensi, and Shansi, with 21,926 patients treated by the medical missionaries at Taing-Choo-Foo and Chou-Ping; Congo Free State, 27 missionaries, with the native churches entirely supporting native evangelists; West Indies (Bahamas, San Domingo, Turks and Caicos Islands, and Trinidad), 3 missionaries and 136 evangelists, besides 3 missionaries at the Calabar College, Jamaica; Brittany, 1 missionary and 3 evangelists; Italy, 6 missionaries and 14 evangelists; and Nablous, Palestine, 1 missionary.

**Other English Societies.**—The Baptist Tract and Book Society had made grants of 300,000 tracts for use in England and the colonies during the year. A new departure had been made in the publication of the works of eminent American writers. A new set of rules was adopted at the annual meeting, in order, without disregarding the views of the founders, who were Calvinistic and strict communion Baptists, to secure the support of all Baptists. The income of the original capital of £700, and such other moneys as may be expressly given for the purpose, are to be devoted to the promotion of



the stricter views, and strict communion Baptists to the number of 10 are to be made life members of the committee.

The report of the Baptist Building fund showed that 41 churches had been aided with loans amounting in all to £10,915. The capital of the fund stood now at £57,442. All the installments due on loans had been received.

The Bible Translation Society returned £1,309 as the amount of the Legacy fund.

The Zenana Missionary Society held its first annual members' meeting April 28. Though it had been at work for twenty-eight years, it had hitherto been without a proper constitutional existence, and an organization was now for the first time completed. The year's receipts, £9,005, had been insufficient by £250 to meet the expenditure. Missionary work was carried on in India at 24 stations, by a staff of 54 missionaries, 200 native Bible women and teachers, with 80 schools with 3,340 children. Regular instruction was given in 1,300 zenanas, and 1,707 houses were visited for Bible teaching alone. Medical work was carried on at Delhi, Palnal, and Bhinani. In China, 4 missionaries were at work in the Shan-Tung province.

The annual meeting of the Baptist Building fund was held April 18. The report showed that the capital of the fund was £51,442, showing an increase of £59. The congregational collections amounted to only £51. During the year, £10,915 had been lent to 41 churches, in sums varying from £25 to £500, and for periods varying from two to ten years. Applications for loans to the extent of £8,920 were awaiting the committee's decision, and these would absorb the ordinary income of the fund for the next nine months. It was remarked that in 1865 the loans amounted to £3,340; in 1875, to £4,385; in 1885, to £8,450; and now, in 1895, to £10,915.

**Baptists in Sweden.**—The Baptist churches in Sweden returned an increase of 1,310 members during 1894, the total membership at the beginning of 1895 being 37,601, with 552 churches distributed among 19 district associations. The number of preachers was 644, and of houses of worship 301, valued at 2,380,730 kronor, against which the indebtedness was 771,651 kronor. The Sunday schools included 40,353 pupils and 3,175 teachers. The sum raised for different branches of work was about 420,000 kronor. The theological school was favorably reported upon.

**Baptists in Holland.**—A jubilee celebration of the beginning of the Baptist churches in Holland was held May 22 and 23, at Stadskanal, near the field water trench in the neighborhood of Groningen, where the first seven believers were baptized fifty years ago by the late Pastor Kobner. Two of these persons are still living, seventy-four and ninety-two years old, respectively. The seven, with three others, were formed into the first Baptist church by Pastor Oncken, of Hamburg. From this beginning have grown 19 Baptist churches.

**BELGIUM**, a constitutional monarchy in western Europe. The Senate has half as many members as the House of Representatives, elected for eight years, one half being renewed every four years, 26 by the provincial councils, and the rest by citizens paying 1,200 francs in direct

taxes or possessing real property yielding 12,000 francs rent. The Chamber has one member to 40,000 of population, elected directly for four years, one half retiring every two years, by all resident male citizens twenty-five years of age, who have an additional vote for each of the following conditions: Being thirty-five years old and married or widowed with legitimate offspring, and paying a personal tax of at least 5 francs; possessing real estate worth 2,000 francs or renting for 100 francs a year. Citizens having diplomas of superior instruction, or who have filled a public office, or have attained a position that presumes a liberal education, have, moreover, 2 additional votes. The revised Constitution of Sept. 7, 1893, which extended the franchise, sanctions the acquisition by Belgium of colonies or protectorates beyond seas. In default of a male heir to the throne, the King is authorized to nominate his successor with the approval of the Chambers, given by a majority of two thirds of their members. The reigning sovereign is Leopold II, born April 9, 1835, who succeeded his father, Leopold I, the first King of the Belgians, on Dec. 10, 1835. The heir presumptive is Prince Albert, second son of Philippe, Count of Flanders, the King's brother.

The ministry in the beginning of 1895 was composed as follows: President of the Council and Minister of Public Instruction, J. de Burlet; Minister of Justice, V. Begerem; Minister of Finance, P. de Smet de Nayer; Minister of Agriculture, Industry, and Public Works, L. de Bruyn; Minister of Railroads, Posts, and Telegraphs, J. H. P. Vandenpeereboom; Minister of Foreign Affairs, Comte de Mérode-Westerloo; Minister of War, Lieut.-Gen. J. J. Brassine.

**Area and Population.**—The kingdom has an area of 11,373 square miles, and on Dec. 31, 1893, had a population of 6,262,272, or 551 to the square mile. There were 3,124,068 males and 3,138,204 females. The vital statistics for 1893 were: Living births, 183,062; deaths, 125,530; marriages, 47,065. The number of immigrants in 1893 was 21,686 and of emigrants 22,117, showing a net emigration of 431. Every commune must maintain at least one elementary school, of the expense of which it bears two thirds, the other third being shared by the state and the province. In 1890 only 77 per cent. of the adult population could read and write.

**Finances.**—In the revised budget for 1895 the revenue is computed to be 357,727,028 francs, of which 144,000,000 francs come from railroads, 42,247,409 francs from excise duties, 25,840,570 francs from customs, 24,955,000 francs from the direct property tax, 20,000,000 francs from registration duties, 19,525,000 francs from succession duties, 19,250,000 francs from personal taxes, 16,115,700 francs from funds and securities, 11,687,300 francs from the postal service, 6,900,000 francs from trade licenses, 6,050,000 francs from stamp duties, 6,000,000 francs from telegraphs, 5,803,000 francs from various indirect taxes, and 9,353,049 francs from other sources. The total ordinary expenditure is estimated at 356,193,486 francs, applied as follows: Interest and amortization of debt, 109,790,484 francs; Ministry of Railroads, Posts, and Telegraphs, 106,525,589 francs; Ministry of War, 47,229,652 francs; Ministry of the Interior and Public Instruction, 25,-

025,684 francs; Ministry of Justice, 20,025,684 francs; Ministry of Public Works, Commerce, and Agriculture, 17,670,003 francs; Ministry of Finance, 16,282,495 francs; civil list and dotations, 4,830,760 francs; gendarmerie, 4,484,650 francs; Ministry of Foreign Affairs, 2,552,682 francs; repayments, 1,545,000 francs.

The public debt, which was contracted for useful works, consisted in 1893 of  $3\frac{1}{2}$ -per-cent. loans amounting to 1,299,935,457 francs, and 3 per cents. amounting to 643,292,735 francs, besides 219,959,632 francs paying  $2\frac{1}{2}$  per cent., forming Belgium's share of the old debt of the United Netherlands, and 20,000,000 francs of treasury warrants; total, 2,183,187,824 francs.

A bill for the conversion of  $3\frac{1}{2}$ -per-cent. *rente* into 3-per-cent. stock was adopted by the Chamber on Feb. 13, 1895.

**Communications.**—On Jan. 1, 1894, there were 2,018 miles of railroads in the Government system, while 792 miles were worked by companies. The receipts of the Government lines were 145,608,909 francs, and the expenses 81,969,346 francs. The capital cost of the state lines was 1,941,283,473 francs.

The Government telegraphs in 1892 had a total length of 4,617 miles, with 22,739 miles of wire. The number of messages in 1893 was 8,311,960; receipts were 3,450,770 and expenses 5,136,385 francs.

The post office in 1893 handled 102,307,722 private and 19,103,155 official letters, 40,195,766 postal cards, 80,579,743 printed inclosures, and 108,221,087 journals; receipts were 18,276,628, and expenses 10,178,073 francs.

**Commerce and Industry.**—In the general commerce the imports in 1893 were valued at 2,810,709,742 francs, and the exports at 2,590,261,736 francs. The imports for domestic consumption were 1,575,100,000 francs, and the exports of articles of Belgian produce and manufacture were 1,234,300,000 francs in value.

The principal special imports and their values were: Grain, 254,276,000 francs; textile materials, 175,845,000 francs; chemicals, drugs, and dyes, 88,921,000 francs; timber, 67,693,000 francs; gums, resins, etc., 67,128,000 francs; oil seeds, 64,283,000 francs; minerals, 61,630,000 francs; tissues, 58,166,000 francs; coffee, 53,616,000 francs; hides, 52,166,000 francs; live animals, 50,877,000 francs; animal products, 41,848,000 francs; metals, 40,797,000 francs; yarns, 29,078,000 francs; fertilizers, 23,243,000 francs; wines, 22,218,000 francs; fish, 21,139,000 francs; flour, 20,396,000 francs; coal, 18,477,000 francs; machinery, 15,333,000 francs; butter, 15,298,000 francs; tobacco, 12,781,000 francs.

The values of the leading domestic exports were: Yarns, 101,403,000 francs; coal and coke, 96,555,000 francs; grain, 88,547,000 francs; textile materials, 82,737,000 francs; machinery and vehicles, 70,715,000 francs; tissues, 61,403,000 francs; chemicals and drugs, 54,334,000 francs; leather and hides, 51,015,000 francs; glass, 49,438,000 francs; iron, 46,131,000 francs; steel, 38,168,000 francs; animal products, 34,312,000 francs; zinc, 32,606,000 francs; minerals, 30,629,000 francs; meat, 28,268,000 francs; fertilizers, 27,817,000 francs; horses, 18,873,000 francs; resins and bitumen, 18,313,000 francs;

dyes and colors, 16,680,000 francs; flour, 12,517,000 francs.

The values of the special imports from and exports to the principal commercial countries were, in francs, as follow:

COUNTRIES.	Imports.	Exports.
France.....	278,423,000	310,256,000
Great Britain.....	197,986,000	241,912,000
Germany.....	180,180,000	300,970,000
Netherlands.....	200,601,000	177,114,000
United States.....	134,950,000	50,344,000
Russia.....	97,642,000	17,132,000
Argentine Republic.....	88,631,000	14,980,000
British India.....	71,312,000	14,940,000
Roumania.....	65,146,000	8,374,000
Sweden and Norway.....	50,145,000	15,326,000
Brazil.....	37,771,000	17,995,000
Italy.....	20,396,000	24,642,000
Spain.....	18,575,000	18,758,000
Switzerland.....	3,504,000	28,299,000
Peru.....	26,419,000	717,000
Chili.....	13,216,000	8,388,000
Australia.....	18,209,000	3,571,000
Egypt.....	4,379,000	14,259,000

About two thirds of the surface of the kingdom is arable. This land is divided into small farms and is kept in a high state of cultivation. The yield of winter wheat is 26 bushels an acre; of sugar beets, 35,182 kilos. The coal produced in 1893 was 19,411,000 tons, valued at 181,406,000 francs. The iron and steel product was 745,264 tons of pig iron, valued at 36,052,000 francs; 485,021 tons of manufactured iron, valued at 61,873,000 francs; 273,113 tons of steel ingots, valued at 22,929,000 francs; and 224,922 tons of steel rails, valued at 28,868,000 francs. The value of the zinc produced was 39,602,000 francs. The product of sugar, 190,312,000 kilos.

**Navigation.**—During 1893 there were 7,022 vessels, of 6,001,968 tons, entered, and 6,977, of 5,939,502 tons, cleared at the seaports of Belgium. More than one third of the arrivals were from British ports, and more than one half of the departing vessels cleared for England. From the United States 273 vessels arrived, of 567,721 tons, while 233, of 540,093 tons, were destined for the United States.

The merchant navy in 1893 consisted of 6 sailing vessels, of 1,039 tons, and 50 steamers, of 74,499 tons.

**Legislation.**—The outcome of the elections held under the new Constitution granting universal suffrage was a strong Catholic majority pledged to restore the system of religious education in the elementary schools, to introduce a protective tariff for the benefit, in particular, of the agriculturists, and to legislate for the amelioration of the condition of the working classes. The Liberals, who represented the principles of secular education, free trade, and economic *laissez passer*, were reduced to a small and impotent minority. The workingmen, represented for the first time, had sent a strong band of ardent Socialists, who agreed with the Liberals on the school question and whose views of social reform, on the other hand, were making progress among the Catholic population, which made the ministry sensitive to their criticisms of its policy toward workingmen. On Jan. 25, the Socialist leader, Anseele, denounced the manufacturers of Ghent for their treatment of their work people, and accused the Government of having one law



for the rich and another for the poor. M. Eeman, in reply, described his invective as the speech of a madman, and was called to order by the President, M. de Lantsheere. The Left rose in approval of this ruling, while the Right remained seated, whereupon M. de Lantsheere resigned the office which he had filled for more than ten years. M. Beernaert, the Liberal leader and ex-Premier, was elected to the vacant post on Jan. 30 by 92 votes against 46 given by the Socialists to M. de Lantsheere.

The Socialists and all the groups of the Opposition were roused to hostility by a new communal electoral law, submitted on Feb. 26, that was the first step of the Conservative Government toward a policy of reaction. It fixed the limit of age at thirty years, the same as for senatorial elections. The plural vote was maintained, with added restrictions in favor of the property-holding class. Instead of giving an additional vote to every householder assessed at 5 francs a year, the limitation was made to vary from 5 to 20 francs in the various communes. This provision was afterward modified, but one was maintained that gives a supplementary vote to the owner of land yielding a revenue of 150 francs or over, provided he has not 4 votes under the other qualifications. In cases where candidates for all the seats to be filled do not receive an absolute majority of votes it was proposed to apply the principle of proportional representation instead of holding a second ballot. A residence of three years in the commune is required. The Christian Democrats held monster meetings to protest against the undemocratic law, and the Labor Congress passed a resolution in favor of a general strike. The miners of the Liège district, who had already begun to strike for a rise of 15 or 20 per cent. in their day's wages, varying from  $4\frac{1}{2}$  to  $2\frac{1}{2}$  francs, went into the political strike, which became so bitter that strikers shot at the police with revolvers, and the police fired into the mob, wounding many people and killing some. The strike would have become general had not the Socialist party in the Chambers disapproved and the Socialist Congress at Antwerp condemned political strikes altogether. The Government accepted an amendment to the electoral bill, offered by M. Helleputte, leader of the Christian Democrats, by which the taxpaying qualification was made 5, 10, and 15 francs for communes containing respectively under 2,000, from that to 10,000, and over 10,000 inhabitants, and that additional communal councilors should be chosen among masters and workmen by the electors of the councils of industry. At the close of the debate on the bill the leader of the Liberals, M. Ans-pach-Puissant, declaring that he shared the convictions neither of the Right nor the Left, nor even those of his own party, felt bound to surrender his mandate. The bill was passed on April 3 by 92 votes to 8, the Left having withdrawn before the vote was taken.

The Government was seriously embarrassed in dealing with the question of the annexation of the Congo Free State by the opposition roused throughout the country by the Radicals and Socialists. The Progressists and a part of the Clericals, who were averse to the project, urged that the country should de-

cide by means of the referendum. The Labor Congress, which met in Brussels on Feb. 24, passed a resolution condemning annexation. The question was referred to a committee of Parliament and was there shelved. Owing to this timid procedure the Comte de Merode resigned the Ministry of Foreign Affairs. M. de Burlet on May 25 assumed the portfolio of Foreign Affairs, while M. Schollaert, a Deputy, became Minister of the Interior and M. Nyssens Minister of Industry and Labor. The debate on the Government tariff bill was begun on May 9. It placed a duty of 2 francs per 100 kilos on flour and on malt, one of 50 francs on chocolate, 25 francs on biscuits containing over 15 per cent. of sugar, 15 per cent. *ad valorem* on cutlery, heavy duties on butter and margarine, a duty on cotton, and one on silks, etc. The Liberals arranged demonstrations in Antwerp and other towns against the new duties, especially against those on flour and margarine. The Socialists, led by M. Vandervelde, resisted the taxation of these articles of food; otherwise they took the attitude of indifferent spectators of a struggle between industrial and agricultural capitalists. The bill was passed in the Chamber on June 25 by 78 votes to 64.

M. Lejeune, late Minister of Justice, brought up the question of the alarming increase in the consumption of spirits, which had risen from 12 litres for each adult in 1851 to 48 litres, the revenue from the excise having mounted from 4,000,000 to 33,000,000 francs and the number of drink shops from 53,000 to 175,000. He declared that the country was reverting through alcohol into barbarism, criminality having increased 200 per cent. and insanity 138 per cent., and that 80 per cent. of the deaths of adults were connected with the abuse of alcohol and were due to the insufficiency of the food procurable by the working classes and to the poisonous quality of the spirits that were sold. The establishment of the licensing system and the suppression of 38,000 drinking places had done nothing to stay the increase in the consumption of liquor, for as many illicit establishments had sprung up in the place of those that were suppressed. A commission, of which M. Lejeune was made president, was appointed by the Government to inquire into the causes and the extent of the ravages produced by the abuse of alcohol, and to report on the means of checking the evil.

After the protective duties were adopted the Government brought forward its school bill making religious education compulsory. All the Liberal elements of the country protested against reverting to the educational system of 1842, and the votes on the various clauses were accompanied by scenes of tumultuous disorder. Under the system of education introduced by M. Frère-Orban in 1879 education was made free and undenominational, although religious instruction might be imparted to particular pupils by the desire of their parents. When the Clericals returned to power in 1884 they allowed communes to substitute Church schools for the state schools or to maintain them alongside of the latter. The purpose of the new school bill was declared by M. Schollaert to restore to religion in all primary schools the place of honor

that belongs to it by right. It provided for the teaching of religion and the principles of morality in every public school, and placed such teaching under the control of the ministers of the different faiths. Parents who object to the form of religious instruction in any communal school have the right to have their children exempted from attendance during the hours when religious instruction is imparted.

The Liberals, Radicals, and Socialists arranged popular demonstrations against the bill that were almost as fervent as those that compelled the adoption of universal suffrage. The change in the school law was denounced as a violation of the clause in the Constitution that forbids the Legislature to seek to penetrate into the consciences of citizens with a view to appreciate their conduct by their adherence to one or another religious faith or by their profession of none at all.

The law, as finally enacted, provides that the local authorities in each parish shall determine the number of schools and teachers necessary; but no school can be closed or vacancy left unfilled without the consent of the Minister of Education. Instruction is obligatory in religion and morals; reading, writing, and arithmetic, including weights and measures; the elements of the language of the district, French, Flemish, or German; geography and Belgian history; rules for the preservation of health; and drawing, singing, and gymnastics. In addition to these branches girls must be taught to sew and boys in rural districts must receive instruction in agriculture. The parish clergy must either personally impart the religious instruction that is given in the first or last school hours of each day or superintend it, and the bishop appoint inspectors who visit the schools and supervise the instruction in religion and morals. Parents have a right to free their children from religious instruction. Clerical and private schools receive the same subvention from the state that is given to the communal schools if they have a sufficient number of pupils and classes conforming to the standard.

**BICYCLES.** From the earliest ages one of man's greatest desires has been to rival the swiftest animals in their progress over the ground or the flight of birds in the air. This is seen first in his conquest of the horse, and next in the efforts to fly, which last attempts have brought misery on foolhardy inventors from time immemorial. A machine to go on wheels and be propelled by the feet was devised by Baron Drais early in this century, and was called a *draisine* (see "Annual Cyclopædia" for 1884, page 80). Ten years ago bicyclists were content to ride on what was called the "Ordinary," a bicycle that had one high front wheel and one little, almost tiny, rear wheel. This permitted one to travel at a wonderful rate compared with anything that had so far been achieved, but it was fraught with danger. The invention of the "Safety," a machine that has two wheels of equal or nearly equal size, depending for power on a chain gearing, was what practically conquered space so far as the bicycle-riding world is concerned, and gave even ladies and children an instrument on which many of them can develop a speed surpassing that of

thoroughbred horses. There were two factors of almost equal importance in the wonderful speed records attained by the new Safety bicycle that has occasioned such a *furor* in this sport. The one that played almost as important a part as the chain gearing and the low wheels was the introduction of the pneumatic tire. This was invented in England half a century ago. It was tried there for wagons and carriages, but was a failure. On the introduction here of the pneumatic tire, the popularity of the bicycle was established at once. It has become a feature of common life in all civilized countries. Not only do all classes of society use it for pleasure and exercise, but it has been made useful to deliver the mails, in the army, on the police force, for the delivery work of messenger boys, even in such a crowded city as New York; and, with the application of power that is now being tried for the doing away with the working of the pedals by the feet, it is believed that its usefulness has practically no limit. The riding-academy business in New York has been changed into a bicycle-school business, and the letting of horses and light wagons has been as much diminished by the popularity of the bicycle as the sale of horses in New York for the horse-car lines has been hurt by the advent of the cable roads. On the other hand, sporting-goods establishments that barely existed have, through the demand for the bicycle, become important mercantile houses; and while hundreds of new factories and stores have been started, the importance of the trade is perhaps better shown by the entrance into it of some of the largest sewing-machine and rifle-manufacturing establishments in the country. There are in America 130 large bicycle manufactories, while counting the concerns that turn out only 50 to 100 machines a day the number rises to nearly 300.

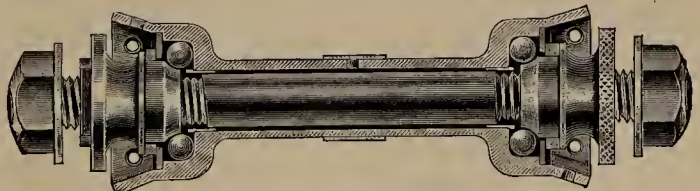
During 1895 these 300 factories turned out 500,000 machines of all sorts, from the light and graceful ladies' bicycles to the heaviest ones for large men seeking to reduce their weight. The astonishing thing about these latter bicycles is that now a heavy machine only weighs about 22 or 24 pounds, while a few years ago the best racing bicycle made scaled over 60 pounds. A fine racing machine now will not weigh over 16 pounds. The cost of bicycles has come down in the last few years, till the average cost of these 500,000 machines to the user is about \$75, or a total of \$37,500,000. And with all this enormous production, the supply is unequal to the demand. Although a bicycle is guaranteed for the first year, like a watch, each purchaser spends, on an average, half as much as his machine cost him in the first six months on all sorts of improvements, and twice as much more for extras. A bicycle is almost as good a thing for business and the promotion of industry in a country as horse-and-carriage keeping. Rubber tires wear out. Spokes get twisted in accidents, new air pumps are wanted, there are always a hundred little nothings for the machine, all of which means so much more money to the maker, for all the makers manufacture the accessories. Then the rider has need of a list of extras long enough to frighten any but a prodigal. It is estimated that in a factory that can turn out 30,000 bicycles a year, over 800 persons, mostly full



grown men, are employed. A recent estimate of the machines likely to be made in the United States during 1896 puts the number at 800,000. These bicycles will, as a general thing, be a little heavier, as regards the wheels, as the manufacturers in the past two years have done more to secure lightness than strength, and customers are now asking for a somewhat stronger wheel, even at the expense of a little weight. The bicycle has been made to a great extent on the plan of the sewing-machine and the typewriter—that is, on an agreed-upon basis of sale price; but now the competition is so great that the price of a good wheel will soon come down from \$100 to about \$45.

To describe the modern bicycle is to try to follow a bullet in its flight. No such perfection of strength and lightness combined has appeared before. The principal departure in the Safety bicycle is the changing of the application of the motive power from the front to the rear wheel. Until the Safety was brought out the power was applied direct by means of pedals on the front wheel. The Safety type depends for its power on pedals connected by a chain with the rear wheel. When the Safety was first introduced, the racing officials required the riders to pass the winning line with the rear wheel in front of the fore wheel of an Ordinary, to score a victory. Soon it was discovered that much more of a handicap than this would have to be accorded the Ordinary if it was to be raced against the Safety. A Safety bicycle is a velocipede with front and rear wheels of the same size. These wheels are each about 28 inches in diameter generally, and the favorite "base line," as it is called, for the modern bicycle is 44 inches. The base line of a bicycle is the distance from the outside circumference of the forward wheel to the farthest point on the rear wheel. These wheels are made with wooden tire rims, to which are fitted the pneumatic tires. The spokes are of fine and wonderfully strong steel wire. Each of these wires is secured in the wooden tire with a small nut at the axle, where it goes through a steel frame, and is then run to another point in the wooden tire, crossing another steel-wire spoke on the way. One of the most interesting points to notice in the construction of the bicycle is the ball bearings, of which there are 12. These ball bearings make a bicycle as near frictionless as is possible. A ball bearing is a cup fitted for an axle to run through and provided with a half dozen or more solid steel balls. For some bearings these balls are not larger than small shot, for others they are as large as buck-shot, while now and then for the heavier bearings even larger balls are used. A line of these tiny balls is fixed in the outer edge of the bearing cup, and they are well oiled. The axle runs directly on these little balls, each of which revolves freely, and the friction is so slight that a wheel held up and set running by a quick motion of the hand will sometimes run several minutes before coming to a complete standstill. There are ball bearings in both front- and rear-wheel axles, and in the handles and steering gear, as well as in the

pedals. The power is applied by means of a chain connected with the axle of the rear wheel. This chain runs over a sprocket wheel on which are hung the pedals, and is strung at a high or a low tension, according as the rider wishes to go rapidly or have the power of climbing hills. To go rapidly on a level surface the chain may be tightened up to the last notch, but to climb a hill it must be hung loosely. There are two devices for effecting the change in the chain from high to low, and *vice versa*. One of these is a bar or lever throwing the chain off from one axle wheel and upon another; the second is a change in the wheels themselves. The objection to the first-mentioned plan is that it leaves too much space for the dirt and dust to gather between the wheels at the axle. The trouble with the second plan is that it is not convenient to carry a spare wheel always with one on a tour, much less on a short pleasure ride. The frame of a bicycle is made of the best hollow steel tubes. Aluminum is now much used, as it gives greater strength with the same weight. Over the framework in front are the handles or steering gear. These are of various shapes and designs, according to the class of the bicycle or the purpose for which it is intended. The handles are provided always with a brake and a rubber alarm. Not long ago there was a crusade against bicyclists riding at night without lights. A small oil lamp is sold with every bicycle, and its use is as much to the advantage of the rider as to the foot passenger or the driver he encounters. The best weight for the bicycle at present is considered to be about 24 pounds. The frame of a ladies' bicycle is bent in and down at the upper bar or tube. This enables women to ride without using bloomers or other special costume; but many ladies prefer the man's bicycle, and have adopted costumes in keeping with the idea. The saddle of the bicycle is considered to be a long way from perfection. The most favored idea at present is the pneumatic saddle. Ladies, in particular, have found much fault with the ordinary saddle, complaining of fatigue from the use of the saddle more than from the long ride or other causes. Several experiments that have been tried in the way of saddles have been unsuccessful. Riders and physicians have complained loudly of the injurious effects caused by riding



FRONT HUB AXLE AND BEARINGS, SHOWING THE BALLS.

upon the ordinary leather saddles. These saddles rely solely upon the lateral tension of the leather of which the seats are constructed to retain their shape. The teaching of experience has been that while the saddle is being ridden the weight of the body so alters its shape as to render it highly injurious to the rider. The bony prominences of the pelvis, which must support the weight of the body while it is in a sitting posture, are about 4 inches apart, and

they, so to speak, straddle the leather, and this leather yields and forms a ridge. The latest saddles to a certain extent overcome this difficulty, being molded in anatomical conformity with the lower parts of the human body. The frame of one of the best saddles is made entirely of metal and weighs about 16 ounces.



THE LATEST IMPROVED SADDLE.

The cushions rest upon a perforated base, insuring a circulation of air through the horn of the saddle, and as cool a seat as possible under the circumstances. The pads of these saddles are removable.

After the chain gearing the prominent feature of the modern bicycle is its tire. The present pneumatic tire was just coming into use as an experiment in 1890, and in 1891 it had started fairly on its way. The pneumatic tire is the result of experiments to obviate the jar to which the rider was subjected, which sometimes had seriously injurious effects in case of long rides. Many physicians even advised against the riding of the bicycle, if this vibration could not be done away with, particularly in bicycles for ladies. It was admitted that the principal cause of fatigue after a bicycle ride was this jar or vibration experienced during the journey. The earliest effort to meet this difficulty was spent upon the fork to the forewheel axle. Coiled springs were fitted to the bottoms of these forks in the machines at the exhibition held in London in 1889. Other steel springs were placed in the steering post, to prevent the vibration of the handle bars. The most successful of the devices tried was a spring fork on which the two front forks were curved. This was very springy, giving a comparatively pleasant motion to the wheel and greatly reducing the vibration. But the best authorities were beginning to see that the place to get at this vibration and minimize it was at the point of contact of the bicycle with the ground, and this led to the search for a new tire that should be more springy than the solid rubber ones already in use. Up to 1890 the ordinary size of a solid rubber bicycle tire was  $\frac{3}{4}$  inch, but hollow rubber tires as large as  $1\frac{1}{2}$  inch were already making their appearance. The pneumatic tire, like many great inventions, was at first looked upon as a clumsy, stupid thing, of little or no practical value. It was a stout rubber tube 3 inches in diameter, fitted on the tire of a bicycle and inflated with air. It was an

Irish invention, and the first wheels that were equipped with it had to make, so their detractors said, frequent excursions to Dublin. The new pneumatic tires had to be inflated with compressed air, which was in itself a great inconvenience; but the chief difficulty was in their likelihood to injury from contact with all sorts of hitherto unconsidered foreign surfaces, such, for instance, as bits of broken bottles and sharp stones. The rubber of which the tires was composed was porous, and this added another difficulty, for the air gradually filtered through the tiny holes and the tire had to be refilled from time to time. This was done with a small pump constructed for the purpose. But soon it was found that the newly equipped machines were much faster than the old style and withal went with a smoothness of movement hitherto almost unhoped for. The breaking of the records began anew with the invention of the pneumatic tire for bicycles, for a Safety thus equipped was as superior to the old style as the first Safety had been to the Ordinary. The pneumatic tire began to be looked upon as the nucleus of a grand idea. Early in 1892 the pneumatic was an accomplished fact; it had come into vogue, and soon no bicycle was complete without it. In the last months of 1892 there was as little use for an ordinary solid tire on a Safety bicycle as there was sale for an Ordinary, big-and-little-wheel bicycle of a few years before. At this time Ordinary bicycles, such as had been sold for \$150 to \$300, were a drug at \$10.

A perfect pneumatic tire is the harnessing of compressed air by such means and in such a manner as will least affect its perfect resiliency and at the same time maintain that rigid connection between the rim of the wheel and the surface over which it travels, without which the power can not be transmitted without loss and the highest working efficiency attained. The method of constructing such a tire is briefly as follows: Upon a pure gum tube are wound spirally 2 layers of thread, each thread imbedded in rubber and out of contact with its neighbors, the 2 layers separated from each other by a wall of pure rubber and wound at an angle of  $45^\circ$  to each other. A seamless, endless, spirally laid tube is thus made, meeting all the required conditions and giving a tire unequalled in strength, speed, and durability, in combination with, and at no expense to, resiliency. The most difficult of the many problems connected with the bicycle is the construction of the pneumatic-tube tire. There are over 100 threads spirally wound in an ideal tire; they extend the whole length of the tire, and, as they are imbedded in an elastic body, any inequality in tension adjusts itself. The threads must be non-stretching and laid at a tangent to the rim of the wheel for speed and power, and they must be free to move over each other without friction for perfect resiliency. Resiliency in a tire is defined as the property of returning to the original shape with the same force that was used in depressing it. By this property the momentum lost by a rider in striking a stone is given out again as the obstacle is passed. It has been found that easy riding or absence of vibration is obtained in the greatest degree by such construction as admits of the tread of the tire



stretching in the direction of its length with the least resistance possible. A recent improvement in the pneumatic tire is in the manner of attaching the valve through which the air is pumped. A thick washer of soft rubber is interposed between the metal base of the valve and the inner tube of the tire. This improvement precludes the possibility of the inner tube being cut by the base of the valve, and as the slightest pressure only is necessary to secure an air-tight joint, there is no danger of the fabric's being torn by the outer plate.

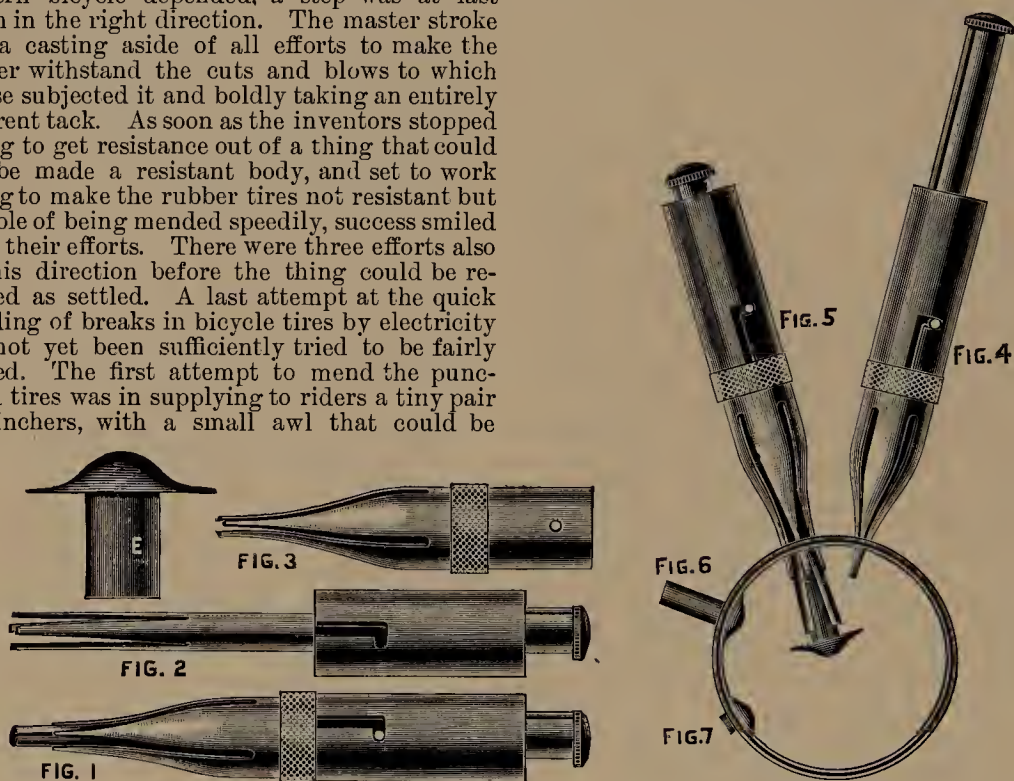
The best idea of what the Safety and the pneumatic tire have done for bicycling speed may be obtained from a glance at some of the records. In 1881 the best record for 1 mile was that held by Frye, three minutes twelve and a half seconds. In 1895 Lawson rode a 5-mile race at Chicago, making the distance in eleven minutes thirty-three and two fifths seconds. Lawson's fastest mile was his second, which he covered in two minutes fifteen and one fifth seconds, while his slowest mile, his fourth, was finished in two minutes twenty-two and one-fifth seconds. Since this race the 5 miles have been done in ten minutes eighteen seconds, 10 miles inside of twenty-three minutes, and longer distances at similar rates. It is difficult to quote records accurately, for in one week may come reports from England, France, or the West, surpassing all previous performances. Then, too, these records are not always allowed by the governing boards of the wheelmen, and such a number of conditions are considered in the performances—such as the wind at the back, paced or unpaced, and standing or flying start—as well as the authenticity of the track measurements, that it is well into the following year when a correct table of records may be compiled for the year preceding. One of the most sensational records, which proves what a wonderful machine the bicycle as lately improved is, is the comparison that may be made between the steel horse and the one of flesh and blood. The fastest record of the running turf is that of great Salvator, who ran a mile against time to beat the time made by Ten Broeck, also a record made against time on a specially prepared track. Ten Broeck's record was one minute thirty-nine and three quarter seconds. Salvator astonished the world by doing a mile on a straightaway track in one minute thirty-five and a half seconds. There is at present a record awaiting recognition of a bicyclist having made a mile on a straight track in less than one minute thirty-five seconds. There is an authenticated record of a mile to Safety bicycle over a straightaway track in better time than the champion thoroughbred horse Salvator did it. This is Johnson's fast mile at Buffalo in 1894 in one minute thirty-five and two fifths seconds. The best road race time for 25 miles in 1894 was one hour fifty-nine minutes. Twenty-five miles have been ridden on a bicycle on a track, in 1894, in fifty-six minutes four seconds, and in 1895 in fifty-five minutes six seconds. The best one-hour record for 1894 is 26 miles 1,489 yards. The best record for 100 miles in 1894 was three hours fifty-four minutes twenty-nine and two fifths seconds. The best twenty-four hour record in England is 469 miles 1,296 yards. This has been beaten in France, where

Constant Huret rode 529½ miles in twenty-four hours. The road record from Chicago to New York city is held by R. P. Searle, who covered this distance in five days twenty-three hours fifteen minutes.

As soon as the pneumatic tire was appreciated the fact was recognized that its one tremendous disadvantage threatened to be so serious a handicap as to throw it out of the race with the solid tire unless a remedy could be promptly found. This defect was its liability to injury. A pneumatic tire that could take the rider of a bicycle more noiselessly, easily, tirelessly, and with almost none of the jar that was still only too apparent with the best solid rubber tire was certainly a great thing; but a machine equipped with a pneumatic tire lost its charm when its rider found himself miles from home with a punctured tire from riding over a sharp stone, a tack, or some carelessly exposed bit of glass. The efforts to supply this deficiency afford a cumulative record of American ingenuity. The inventors first tried every way to render the rubber unbreakable, punctureless, proof against the onslaughts of tacks, sharp stones, wire, and bits of glass. The efforts in this direction all left the bicycle improved on these lines, capable of resisting to a certain extent the injuries it was aimed to guard against, but they did some undesirable thing in its place. The first effort to prevent the pneumatic tire from bursting when punctured along a road that promised better success was the attempt of the men in the rubber business. Rubber is very elastic. What more simple, then, than to have the pneumatic tires made of so nearly pure gum that they would close up and come together over the puncture of a tack? This was at first hailed as a sure remedy, and it acted well for a time. The objection was, that the rubber of which the new tires were constructed was as unserviceable as gold unalloyed. The new tires wore out too quickly. A half dozen schemes in the direction of a tire that would heal itself were tried before this plan was given over. Then began a long series of experiments in the direction of securing a pneumatic tire that would be tough and strong without being too heavy. The hollow rubber tires were coated with all sorts of preparations to render them impenetrable. Most of these coverings, with the idea of lightness always in view, were in the form of liquid. One inventor got up a horsehide covering, which had a certain success until the cold weather set in, when it was found to be too slippery. A bicycle provided with a horsehide covering for its pneumatic tire could go on very well, and was not much heavier than one without this protection in summer, but in winter the ice and frost of the climate of New York rendered the horsehide as slippery as so much glass, and no rider, even the most expert, had any chance of staying on his wheel. After the horsehide came the idea of a covering within. The tube was coated inside instead of outside with all kinds of preparations. The most successful of these attempts at interior protection was a strip of cloth called "punctureless armor." The idea of this punctureless armor was that it would lie in the bottom of the tube, and in case the rubber was punctured it would at once fill up the hole and prevent the escape

of the air. This strip of cloth was toughened by immersion in liquids till it was capable of resisting a good strong prick from a tack. This armor was put inside the tube before it was inflated and might stay for some time in position. The main difficulty was, that it could not be held in position at the bottom or top of the pneumatic tire, and sometimes a rider found, after days of uselessly carrying the extra weight, that his inside armor would slip and afford no protection when the outer tire was punctured. When ingenuity had exhausted itself in finding methods for toughening and strengthening, and at the same time keeping light, the pneumatic tires on which so much of the success of the modern bicycle depended, a step was at last taken in the right direction. The master stroke was a casting aside of all efforts to make the rubber withstand the cuts and blows to which its use subjected it and boldly taking an entirely different tack. As soon as the inventors stopped trying to get resistance out of a thing that could not be made a resistant body, and set to work trying to make the rubber tires not resistant but capable of being mended speedily, success smiled upon their efforts. There were three efforts also in this direction before the thing could be regarded as settled. A last attempt at the quick mending of breaks in bicycle tires by electricity has not yet been sufficiently tried to be fairly judged. The first attempt to mend the punctured tires was in supplying to riders a tiny pair of pinchers, with a small awl that could be

The plug was to be put in big end first, and the stem coming back through the hole could be trimmed off to fit. The difficulty with this arrangement was the amount of mechanical skill required. The improvement on this first rude attempt at the speedy mending of an injured bicycle tire was a neat and ingenious little contrivance something like a corkscrew. This had an oblique opening at one end, and its chief claim as an improvement was that it had the awl in the hollow of the handle. With the awl thus secured, and certain of working properly, the rubber plug was driven home to its position much more quickly and certainly than the former appliance did the work. One of the latest repairing tools effects



heated red hot, a little book of rubber plugs (something like a fly fisher's book of flies), and some powerful liquid glue or cement. With a small hand pump for refilling a burst tire, a rider might now go on a long trip and feel reasonably certain that, even if he did have the mishap to prick his tire in some out-of-the-way place, the chances were that the injury could speedily be repaired, at least sufficiently for him to proceed on his journey and get home that night. With the set of tools spoken of, the mode of procedure was as follows: When the tire was punctured the rider dismounted and examined the injury. If it was a simple puncture, with a smooth inner surface, he need not trouble to heat the awl, but could proceed at once to patch the wound with his rubber plug. This rubber plug looked like a tiny toadstool. It was inserted with the pinchers or pliers after being carefully folded and covered with glue. The theory of this plug is that the pressure of the air from the blown-up pneumatic will hold it in place once it is secured in the puncture, with the head inside.

a reparation almost with the turn of the wrist. It is a little instrument about six inches long and has, like the others, the object of inserting and securing a tiny rubber plug where a hole in the tire has been made. The tool shown in the accompanying illustration is the instrument with the repairing plugs. Fig. 1 shows the tool as carried in the tool bag or in the pocket. Figs. 2 and 3 show the tool separated. Fig. 2 shows the divided plunger in which the stem of the plug is inserted. Fig. 4 shows the tool locked together, with the rubber plug inside the pointed expander, which is inserted in the puncture. Fig. 5 shows the plunger forced through the puncture inside the pointed expander, with the plug carried through and inside the tire. Fig. 6 shows the tool withdrawn, leaving the plug in the puncture with the head of the plug inside of the tire and covering the puncture. Fig. 7 shows the stem of the plug cut even with the surface of the tire, making the repair complete. It is always well in repairing punctures not to use any larger plugs than are absolutely necessary.



the object of this being not to increase the size of the puncture. The very latest in bicycle repairs is a device just placed upon the market by a Western company. It is a contrivance for repairing tears or punctures in any kind of tire. The hole to be repaired is filled with new material, and the part then subjected to the vulcanizing effect of heat generated by electricity, under the influence of which the new and the old materials are united. This machine is small, the combined heater and regulator only occupying a space 3 feet long by  $7\frac{1}{2}$  inches wide. The heater plates are 2 by 12 inches each, so that from 1 to 8 tires can be repaired at the same time. This latest device may be connected with any incandescent-light circuit. The machine was originally got up to enable a jobber in tires to make repairs in his shop on tires returned under his guarantee, and was found to do work in the most satisfactory manner. It is claimed that by this latest process uncured or partially vulcanized rubber and the necessary fabric and friction duck are placed in and around the hole to be patched, and it is then to be filled in with materials prepared for the purpose, which, when vulcanized on the machine, make a smooth, even job, exactly the same as could be done in the factory where the tire was originally made.

One of the causes of the fast time credited to bicycle experts in the recent efforts is due to the excellence of the tracks. The best style of track is considered the elliptical. The knowledge of the elliptical track was borrowed from the trotting-horse circuits, as was the idea of thrown-up turns. This was only a fair return, for the trotting-horse people borrowed the pneumatic tire from the bicyclists, and by doing so reduced the records of trotting horses at once, and wonderfully. The result of years of careful study and experimenting in the construction of bicycle tracks can be seen at Manhattan Beach, where Austin Corbin spent \$60,000 to produce a perfect track for bicycle racing and for the daily practice of the constantly increasing patrons of this popular sport. The Manhattan Beach track is one third of a mile round, which is the most favored by bicyclists because, while a third of a mile is enough for a good swing, it is not too large, and does not let the racers get too far from their audience. Then, too, the turns can be thrown up better or oftener. And this is quite an advantage, for the bicyclist really comes to depend on the enormously thrown-up turns more than he himself believes. A thrown-up turn of 6 feet or more on the outer edge is a great help to a speeding bicyclist. The power developed is not only a rest for the few seconds spent on each of the turns, but the throw-in really helps to send the wheel along. The track at Manhattan Beach is composed of 8 inches of ashes and concrete, and  $4\frac{1}{2}$  inches of crushed granite, powdered cement, and sand. The outer bank of this track is thrown up 6 feet  $\frac{1}{16}$  inches. At first view, this great incline would make a rider hesitate: but if he hesitates, he is lost. The power of remaining on his bicycle depends on his keeping on at a high rate of speed. This track has a grand stand capable of seating 8,000 persons, and there are also 3,100 folding chairs.

The art of sitting on a bicycle is not so difficult as most people suppose. One can learn to

ride passably in a very few lessons. In the large cities it will be found best perhaps to go to a school where for a fee of 50 cents an hour, or 5 lessons for \$2, one can learn well enough to go out alone. In case of learning out of doors, with a friend instead of a professional instructor for a teacher, a smooth level piece of road should be chosen. The friend should steady the machine, for at first even a Safety seems the giddiest thing imaginable and at least a mile high. The friend steadies the machine by the handle bar while the learner mounts, and as soon as he is seated the friend should place one hand under the saddle while retaining his grasp of the handle bar. In this position he can completely control the machine, and render a fall the next thing to an impossibility. If a violent or unexpected swing or lurch comes, simply let go of one pedal, and, putting out one foot, save yourself by keeping in an upright position by means of the ground. One of the most important things in learning to ride a bicycle is not to grasp the handles too firmly. Frequent rests should be taken, and not more than from 15 minutes to a half an hour consumed at any one of the earlier lessons. A bicycle is maintained in its upright position through its momentum, and the tendency of all rotating bodies to continue as started unless interfered with. It is a mistake to depend too much on the steering crank or handles to keep up. After one has acquired a perfect balance, the bicycle will keep up of itself, aided now and then by an almost imperceptible motion of the steering handles, which will turn the front wheel in the direction you would fall, thus re-establishing the equilibrium. The natural impulse of a learner is to turn the wheel away from the direction in which he is inclining. This is a case in which the natural instinct is at fault, and learning to ride a bicycle is simply learning to overcome this first impulse, and by practice developing a new and different one. To learn to ride by one's self, the pedals should be removed and the saddle placed so low that the learner's feet can be placed flat on the ground. Then grasp the handles, bestride the machine, and get it into motion by pushing on the ground 2 or 3 times with each foot; lift the feet from the ground, and try to steer the machine so that it will continue erect until it loses its momentum. Repeat this for some time, with occasional rests. When you find that you can actually steer well enough to keep the machine erect for a few yards, you can make the work easier by getting a good start, and then putting your feet on the pedals and coasting. It will not require much practice to give you confidence, which is all that is necessary to begin with the pedals. The saddle should still be kept low, so that in case of a slip or a fall the foot may be near enough to the ground to prevent an accident. A woman may learn to ride in a school or on the road as quickly as a man. Capable assistance is especially desirable for women, as many have not much strength, and require considerable help until the exercise has brought their muscles into play and accustomed them to the little exertion required. The first ride out on the road should be, if possible, under the eye of an experienced rider, and must be taken very slowly. Half a

mile is far enough to go the first time. The distance and speed of the daily ride may be gradually increased, and within a fortnight a healthy woman ought to ride 5 or 6 miles without fatigue, and a man at least twice as much.

Men who had long given up all idea of active participation in athletics have taken to riding the bicycle, with the best effect, and ladies have found in the use of the wheel a tonic exercise of the greatest value. The principal charm of the wheel is the fact that one can, in a fraction of the time it would take to walk or even to be driven to a place, go there independently and in a fashion that has all the pleasure of the most delightful transportation imaginable, while at the same time obtaining the benefits of a most healthful exercise. Once a bicyclist always a bicyclist has become a proverb. The more people ride a machine, the more enthusiastic they become and the more they want to ride. One of the most popular forms of amusement at present is road racing on the bicycle. On account of the poor state of most roads in America, this pastime has not yet become what it is in England and in France, where the roads are nearly perfect. Two race courses with a national reputation are the Irvington-Milburn and the Pullman. On Memorial Day the best Western riders enter for the races at Pullman, and the Eastern ones try their speed and endurance at the Orange course in New Jersey. The Irvington-Milburn course is a 5-mile stretch between two villages of these names at Orange, N. J. The road here is smooth but hilly, and often a third of the starters fail to finish the race. The Pullman course is a 14 $\frac{7}{8}$ -mile stretch between Chicago and Pullman. Some idea of the place that bicycling has taken in New York life may be gained from the fact that a bill was recently introduced for the turning of the old aqueduct path into a bicycle track. This bill was passed by both Houses, and only failed to become a law through Gov. Morton's failure to attach his signature.

The League of American Wheelmen was founded in 1880, and now numbers 38,000 members. The president of the L. A. W., as it is always called, is A. E. Williston, of Maryland, and its vice-president is George Perkins, of Boston; but the controlling influence is said to be Isaac B. Potter, of New York, who would be the president of the body but for an amicable suit at law. The objects of the league are, in general, twofold: First, to encourage and aid bicycling by obtaining passage of laws favorable to the sport, by protecting the rights of bicyclists, and seeking to secure better roads all over the country; and, second, to protect the better class of riders from the damage that might be done the sport by unscrupulous professionals. To accomplish this latter purpose, riders are divided into three classes, Class A, Class B, and Class P. The riders in Class A are pure amateurs who have never taught, pursued, or assisted at bicycling or athletics for a livelihood, and only ride for their own amusement. Class B is composed of what are called half-and-half men—for instance, of what are called maker's riders, that is, of young men who, while not actually making their living as bicyclists, go from one country to another partly for the sake of the traveling, and ride a bicycle of a certain make with which they

break records and give exhibitions or compete in amateur competitions, thus furnishing a regular and constantly moving advertisement for the house that pays their expenses and provides them with wheels. Class P is made up of professional bicyclists. The L. A. W. is divided into State divisions, each self-governing.

Great as is the bicycle in America and popular as it is in England, it finds its true home in Paris. That city, with its smooth wooden pavements, is better adapted to bicycling, and 10 Parisiennes ride where one Englishwoman would. In Paris, too, one finds the more practical adaptation of the bicycle principle. Here one sees on all sides the tiny bicycle boys with messages and letters, and the little tricycles with which even the bread is delivered in the morning. The newspaper conditions in Paris are so different from what they are in England and the United States that in the French capital more than one big daily utilizes the tricycle for the delivery to the kiosks and to customers every morning. In England few ladies ride in London, but the bicycle is as popular at the country places as ever. It has become unfashionable to ride bicycles in London, because the cheapening of the wheel has enabled laborers to use it, and the business man who a few years ago went to his office on a bicycle will no longer be seen astride one except on a country road.

**BOLIVIA**, a republic in South America. The Constitution of 1880 vests the executive power in a President elected directly by the people for four years, and the legislative power in a Senate and House of Representatives, of 16 and 64 members respectively. Every male citizen able to read and write has a vote.

Moriano Baptista was elected President for the term ending in August, 1896. The ministers in the beginning of 1895 were: Foreign Affairs, E. Cano; Finance, E. Borda; Interior, L. Paz; Justice, E. Tovar; War, S. Alonso.

**Area and Population.**—The estimated area of the republic is 567,360 square miles. The population is estimated at 2,019,549, not including the tribal Indians. La Paz, the capital city, has about 56,000 inhabitants.

**Finances.**—The revenue for 1892-'93 was estimated at 5,737,200 bolivianos (the boliviano has an exchange value of 42 cents), and expenditure at 5,937,200 bolivianos. For 1893-'94 expenditure was estimated at 5,234,820, and expenditure at 5,721,300 bolivianos. The foreign debt includes a war debt of 1,616,655 bolivianos due Chili. This is being paid off; but on the rest of the debt, amounting to 3,763,273 bolivianos, no payments of interest or principal have been made for a long time. There is an internal debt of 4,484,916 bolivianos.

**Commerce and Production.**—About two thirds of the exports consist of silver. Other commercial products are tin, cinchona, bismuth, India rubber, and alpaca wool. The value of imports officially given for 1892 was 11,071,000 bolivianos; exports, 21,570,000 bolivianos.

**Communications.**—The railroad from the Chilean port of Antofagasta has since May 1, 1892, been completed from Ascotan, on the frontier, to Oruro, with a branch to the silver mines of Huanchaca, the total length on Bolivian territory being 500 miles.



The post office during 1892 forwarded 1,238,840 internal and 368,539 international letters, newspapers, etc. Receipts, 384,821 francs; expenses, 417,527 francs.

The telegraph lines have a length of 903 miles.

**Quarrel with Peru.**—Toward the close of 1894 the Government protested vigorously against Peru's action in stopping traffic on Lake Titicaca, which had been done for some time, contrary to the terms of the treaty between the two countries. After the election of Nicola Pierola as President of Peru, the dispute was settled, and there was no more interference with Bolivian vessels. Bolivia demanded that Peru should salute the Bolivian flag. This *amende* the Peruvian Government refused to give. Bolivia had been for some time increasing her armed forces, and supplying them with breechloading rifles and artillery, especially mountain guns. On July 9 Bolivia's minister to Peru presented an ultimatum demanding that Peru give satisfaction by a formal salute to the Bolivian flag within twenty-four hours; otherwise the Bolivian minister would quit Lima. The act of a Bolivian mob in stoning the Peruvian consulate in La Paz caused the Government to moderate its attitude. A protocol was drawn up for the settlement of the dispute by arbitration, as suggested by the papal nuncio. The offer was accepted by Peru, and the agreement was signed on Sept. 7, 1895. Brazil was selected to act as arbitrator, or Colombia in case Brazil should decline the office.

The relations between the two republics were strained on account of a question that had arisen in relation to the destination of some of the territory that Chili had retained after the conclusion of her war with Peru and Bolivia. The former Bolivian province of Atacama and the Peruvian province of Tarapaca were definitely annexed. The northern districts of Arica and Tacna, according to the terms of the treaty that was signed in October, 1883, were to be occupied by Chili for ten years, at the end of which the inhabitants should decide by a *plébiscite* to which of the two republics they would belong. The Chilean Government did not hold a *plébiscite* when the ten years expired. It was not until Peru seemed likely to have a stronger and more stable government, after Pierola's accession to power, that Chilean statesmen became alive to the necessity of reaching a final settlement of the status of Tacna and Arica. Chili could not in honor and safety retain them against the will of the inhabitants, who did not seem disposed to elect the Chilean nationality; but she was unwilling to restore them to Peru, and thus aggrandize her old enemy and rival, and make it easier for the Peruvians to regain the rest of the conquered territory. A third solution of the problem was to give the districts to Bolivia, which was already an economic dependency of Chili. By this means Bolivia could be seduced from her old alliance with Peru against Chili, and would become Chili's ally, greatly strengthening the position of that power in a possible war with Peru and the Argentine Republic or with Peru alone. The people of Arica and Tacna would first have to be reconciled to the transfer and induced to accept Bolivian nationality. To bribe them Chilean cap-

italists promised to extend the railroad from Arica to Tacna into the interior, so that it would become an outlet channel for the bulk of the exportable produce of Bolivia. A treaty was drawn up by the Chilean Government whereby Chili was to cede at once to Bolivia a seaport in the northern part of Tarapaca. Chili further agreed to promote the acquisition of Tacna and Arica by Bolivia, on condition that Bolivia pay \$5,000,000 to Chili. This money was to be paid finally to Peru as compensation. Since the Bolivian Government had no such sum at its disposal, Chili offered to advance it, requiring as a guarantee that the control of the customhouses in the seaports that Bolivia would acquire should be intrusted to Chilean officers, and the customs applied to the repayment of the debt until it shall be extinguished.

The people of Bolivia were not won immediately by this alluring proposition, and the majority of the Cabinet were opposed to its acceptance. President Baptista nevertheless declared that he would accept and support the treaty, and would submit it to the Congress for ratification.

**BRAZIL**, a federal republic in South America. The legislative power is vested in the National Congress, consisting of the Senate and the House of Deputies. There are 3 senators from each State and from the Federal District, 63 in all. The Deputies, elected in the States according to their population, number 205. All tax bills originate in the lower house. Members of both houses are paid. They can not be Cabinet officers unless they resign their seats, and none can accept any office bearing emoluments, except in the diplomatic or military services, in which case he must resign his seat, nor can he become interested in any public contracts or be a director in a private corporation having contracts with the Government. Congress meets annually on May 3 and sits four months. The President, who is elected for four years, has power to prorogue it or to call an extra session, and has a suspensive veto upon legislation.

The President is Prudente de Moraes Barros, who entered upon his office on Nov. 15, 1894. He appointed the following Cabinet: Finance, Rodríguez Alves; Public Works, Antonio Olyntho; Interior and Justice, Gonçalves Ferreira; War, Gen. Bernardo Vasques; Marine, Admiral E. Barbosa; Foreign Affairs, Carlos Carvalho. The Vice-President of the Republic is Dr. Manoel Victorino Pereira.

**Area and Population.**—Brazil has an estimated area of 3,209,878 square miles, and an estimated population of 14,354,217 souls. Rio de Janeiro, the capital, had 422,756 inhabitants in 1890. Pernambuco has about 190,000, and Bahia 200,000. The immigration in 1893 was 84,143; emigration, 17,525. The German and Italian colonies in Rio Grande do Sul and elsewhere have been formed of emigrants brought out at the expense of the Government, who are fed and housed until land is allotted to them, when they receive a small sum of money and tools to enable them to build a habitation and begin work. Beginning almost without capital, they cultivate in a primitive manner and make slow progress. The Italians are said to be the more energetic and economical, and to get more out of rugged,

hilly land than the Germans out of rich bottom lands; but the latter settle down and become permanent citizens, while the Italians are inclined to go back to their own country when they have saved some money.

**Finances.**—The receipts of the General Government in 1893 were 258,835,000, and expenditures 317,467,000 milreis. In 1894 the revenue was 201,568,000, and expenditure 253,473,000 milreis. The estimate of expenditure was 250,457,908 milreis, of which 14,473,833 milreis were for the Ministry of the Interior and of Justice, 100,716,824 milreis for the Ministry of Agriculture, 85,645,244 milreis for the Ministry of Finance, 29,959,815 milreis for the Ministry of War, 17,846,200 milreis for the Ministry of Marine, and 1,815,992 milreis for the Ministry of Foreign Affairs. The extraordinary expenditures were estimated at 116,384,000 milreis. For 1895, receipts are estimated at 270,198,000 milreis, and expenditures at 275,692,000 milreis.

The total debt in 1893 amounted to 1,481,136,784 milreis, less 233,612,484 milreis of assets, leaving a net debt of 1,247,524,300 milreis. The foreign debt was 261,809,111 milreis and the internal debt 649,042,399 milreis, besides which there were 215,111,964 milreis of treasury bonds and 355,173,310 of guaranteed bank notes.

**Commerce and Production.**—After coffee, of which 8,000,000 bags were produced in 1892, the chief products are rubber, cotton, tobacco, cattle, sugar, and fruits. There were 450,000 cattle slaughtered in 1893, and 575,160 salted hides, 2,592,864 kilogrammes of tallow, and 24,474,077 kilogrammes of jerked beef were exported. The exports of coffee and India rubber go largely to the United States. The value of the exports to North American ports in 1892 was \$118,633,604, while only \$14,291,873 worth was imported from North America. Most of the imports come from Great Britain, Germany, and France. The imports of cotton cloth from Great Britain amounted in 1892 to about \$17,000,000, the iron imports to \$3,000,000, machinery imports to \$3,700,000, woolen imports to \$2,000,000, and imports of coal to \$2,250,000.

**Navigation.**—There were entered in 1893, at Rio de Janeiro, 1,397 vessels, of 2,062,294 tons, and cleared 1,218, of 1,924,449 tons; at Bahia, in 1892, were entered and cleared 965 vessels, of 1,297,712 tons; at Rio Grande do Sul were entered 471 vessels, of 200,798 tons, and cleared 485, of 202,776 tons. From November, 1894, foreign vessels are inhibited from the coasting trade. The registered vessels of over 100 tons burden in 1894 were 164 steamers, of 110,068 tons, and 126 sailing vessels, of 35,908 tons.

**Communications.**—There were 6,651 miles of railroads in operation, 3,815 miles were building, and 13,411 miles more were projected in 1893. Of the existing lines the Government owned 1,586 miles and subsidized 1,815 miles, and the bonds paying 6 and 7 per cent. of many of the others were guaranteed.

There were 9,179 miles of telegraphs in 1892, with 14,326 miles of wire, all belonging to the Government. The number of dispatches sent in 1892 was 1,143,360.

The post office in 1890 forwarded 18,246,739 private letters, 19,280,135 journals and circulars, and 1,281,700 registered letters and packets; re-

ceipts were 3,243,421 milreis, and expenses 9,323,108 milreis.

**The Army and Navy.**—Personal service for three years in the army and three years in the reserve is obligatory, except for various exempt classes. The standing army consists of 40 battalions of infantry, 16 regiments of cavalry, 5 regiments of field artillery, 9 battalions of foot artillery, and 2 battalions of pioneers, besides special corps. The peace effective in 1894 was 1,600 officers and 30,000 men. The gendarmerie numbers 20,000.

The naval force consists of 2 battle ships, the "Riachuelo" and "24 de Maio," 3 large cruisers, 9 coast-defense ironclads, 23 small cruisers and gunboats, and 7 first-class and 5 second-class torpedo boats. Two powerful new battle ships are building in France.

**The Revolt in Rio Grande.**—In the beginning of 1895 the rebels in Rio Grande do Sul took the field under the command of Admiral Saldanha da Gama. The Brazilian troops in pursuing one of the bands crossed the frontier and came into collision with Uruguayan troops, who opposed their advance, killing 1 officer and 3 soldiers. On March 1 the rebels defeated a column of 500 troops near the frontier. The Government charged Uruguay with openly aiding the insurgents, and the Senate debated a resolution to declare war against Uruguay as the only means of ending the revolt. Later the Government forces were successful, and most of the rebels retired into Uruguay. In June, Admiral da Gama, at the head of 400 sailors, was engaged by a brigade of 1,200 Government troops near Santa Aña. He repelled five charges of cavalry, but at last, when 300 were killed or wounded on both sides and most of his men had abandoned the field, he ordered the handful who stood by him to retreat, and then cut his own throat. On July 2 Gen. Galvao, commanding the Government troops, arranged a week's armistice with Col. Tavares, chief of the rebel forces. The men on both sides were tired of resultless bloodshed, and could not be led into battle. The rebels were willing to come to terms if Gov. Castilho would retire, but the Cabinet could not agree upon sacrificing him. Negotiations were reopened. The proffer of Uruguay and the Argentine Republic to mediate was indignantly rejected. Gen. Saraiva collected a new force of several thousand rebels on the border of Uruguay, ready to resume the conflict. At last terms of peace were agreed to in August, to which Gov. Castilho, who had before stood out for unconditional surrender, gave his assent. A free pardon was granted to all who laid down their arms, with a guarantee of all civil rights to every person implicated in the revolution, including the right to appeal to the courts for the redress of injuries committed by the troops. Dr. Castilho was to remain as Provisional Governor until the meeting of the State Congress, which should alter the Constitution so as to make it conformable with the constitutions of the other States. The amnesty bill was passed in September after a sharp debate in both houses, with modifications debarring rebel officers from the army and navy for two years, and extending the amnesty to other political offenders and exiles.



**Politics.**—In the early part of the year the movement in favor of the restoration of Peixoto to power was active in the army and navy, and had many supporters in São Paulo, Santa Catarina, Parana, and Rio Grande. The partisans of the ex-President organized demonstrations in the capital. In March, President Moraes closed the military school and expelled the students because they attempted to foment a feeling in favor of Marshal Peixoto and against the existing Government. Disturbances occurred at the elections in Pernambuco in March. The commander of the artillery regiment at San Pablo endeavored to induce his men to declare in favor of Peixoto. Those engaged in the plot were arrested. The ex-President in June announced his intention of standing as a candidate for Senator in the Federal District. His sudden death on June 29 deprived the advocates of a military system of a party head.

The vessels of the navy were reported by the Secretary of the Navy to be unserviceable, and extensive repairs were needed to place the force on the same footing as before the revolution. A new 5-per-cent. internal loan was issued at the beginning of March. It was applied to the redemption of currency, of which there were outstanding 367,358,000 milreis of treasury notes and 340,714,370 milreis of bank notes. The congressional session opened on May 4. The diplomatic rupture with Portugal had been terminated through the intermediation of Great Britain. The President, in his message, spoke of the falling off in the number of immigrants, and said that it would be necessary to take steps for encouraging immigration. Taxation reform was called for. He recommended the reorganization of the National Guard and the strengthening of the coast defenses. The budget was presented in the middle of June. Receipts were estimated at 300,884,000 milreis, and expenditures at 296,028,000 milreis. The Minister of Finance proposed to levy one third of the customs duties in gold, and suggested an income tax and a duty on alcohol. A bill was passed placing a heavy tax on foreign insurance companies doing business in Brazil.

**Indemnity Claims.**—The Italian, French, German, and British governments brought claims against the Brazilian Government for damages on account of losses sustained by their citizens during the late revolution. They proposed that these claims should be submitted for arbitration. On Jan. 16, 1895, the Minister for Foreign Affairs informed the ministers of those countries that they would have to be submitted to the Supreme Court. The ministers objected to this, and the claims were made the subject of negotiation. The French minister made a settlement which his Government refused to ratify, and he was recalled. The Italian Government had presented immediately a demand for satisfaction because Italians had been tortured during the revolution. It took umbrage at the long delay and at the amount finally offered. The Italian minister finally announced that he would leave on July 7, and demanded his passports. This hastened a settlement. The Italian demands were somewhat abated, and a treaty was signed by which Brazil agreed to pay \$150,000 in gold. The Italian Government gave notice

that emigration to Brazil would be stopped unless Italians were better protected. There was a riot on Aug. 7, in which several Italian railroad laborers were killed. The foreign indemnity claims were not all settled. They amounted in the aggregate to an enormous sum.

**The Missiones Dispute.**—Brazil and the Argentine Republic agreed, in a treaty concluded on Sept. 7, 1889, to appoint joint commissioners to settle the boundary between the two countries, and, in case they failed to reach an amicable solution of the question within ninety days after the completion of the survey, to submit the matter to the arbitration of the President of the United States. The subject of this old controversy was the region lying between Iguassu on the north, the Uruguay river on the south, San Antonio and the Pepiri-Guazu on the west, and the Jangada, or San Antonio Guazu, and the Chapeco, or Pequiri Guazu, on the east. It is the Missiones territory, which was already in the possession of Brazil, forming a judicial division in the State of Parana. The area is 11,823 square miles, and the population about 7,000.

The joint commission came to no agreement, and the question was accordingly referred to the President of the United States. Baron Branco represented the Brazilian Government, while the Argentine Republic was represented by its minister at Washington. President Cleveland made his award on Feb. 6, 1895, in favor of Brazil, establishing the boundary line on the rivers Pepiri-Guazu and San Antonio.

**British Occupation of Trinidad.**—A small rocky island 700 miles off the coast of Brazil, in 20° 20' of south latitude and 29° 22' of west longitude, was recognized when Brazil was a Portuguese possession as belonging to Portugal. Some English settlers once remained for a short time, and later a more permanent Portuguese colony settled there; but this disappeared, and the island had no inhabitants until Baron James A. Harden-Hickey, an adventurous Franco-American, who had discovered the island in 1888, planted a colony of 40 Americans in Trinidad in the spring of 1894. He found guano in merchantable quantities, and intended to construct wharves and buildings for its exportation. Assuming that it was derelict territory, he also conceived the idea of setting himself up as a sovereign prince. In January, 1894, he assumed the style of James I, adopted a flag for his principality, established an order of knighthood, and had paper money and postage stamps printed. None of the powers recognized his pretensions. In the spring of 1895 the British cruiser "Barracouta" was sent to Trinidad to take formal possession. Some months later a passing vessel saw the British flag floating over the island. When this was reported in Brazil the people were greatly agitated. It was supposed that Great Britain intended to utilize the island as a coaling station. Although Brazil had never occupied Trinidad, her historical and documentary title was always considered indubitable. Mass meetings were held in Rio Janeiro and the other cities to manifest the popular indignation. The Brazilian Government presented a remonstrance at once. The British minister explained that Great Britain had occupied the island at the request of an ocean telegraph com-

pany that intended to lay a cable to La Plata, and desired to use it as a landing station for their cable. He said that Great Britain was willing to submit the question to arbitration. After more correspondence the British Government receded from its position and recognized the sovereign rights of Brazil, on condition that permission to lay a cable shall be granted. The Government in September submitted to the Senate a proposition to colonize Trinidad.

**Boundary Dispute with France.**—The territory on the confines of the State of Para and French Guiana lying between the Oyapok and the Araguay rivers and extending inland to the fifty-sixth meridian is claimed by both Brazil and France. The area is about 30,000 square miles, and the present population perhaps 18,000, consisting of Indians and some creoles and negroes. The claim has been put forward in behalf of the French to the whole country north of the Amazon as far west as the river Branco, embracing 100,000 square miles. In the seventeenth century France occupied this region and disputed with Portugal the possession of the northern mouth of the Amazon. In the treaty of Utrecht, concluded April 11, 1713, the boundary was defined to be a river called Japok, or Vincent-Picon. The French and the Portuguese could not agree afterward what river was meant by these designations. The French held that it was either the Araguay or the Mapa; the Portuguese claimed that it was the Oyapok. The river Carsevenne was accepted as a compromise boundary in 1797. The treaty of Amiens gave the country down to the Araguay to France; but war annulled that arrangement, and when peace was restored, in 1815, Brazil was required to make restoration only of Guiana north of the Oyapok, France reserving her claim to the disputed country even as far as the Amazon. The French established a military post at Mapa in 1836, but withdrew it in 1841 at the earnest solicitation of Brazil, both governments agreeing to treat the district as neutral territory until the boundary lines were settled. The disputed region is called sometimes Amapa, or Mapa, sometimes Cunane, from the principal inhabited places. A conference was held at Paris in 1856, at which the Brazilian Government offered to accept the Carsevenne, or Carsewena, as the boundary, to which the French Government would not agree. The French Government made representations in 1874 to the Brazilian Government, protesting that Brazilians were entering the country and endeavoring to gain over the inhabitants for Brazil. Both governments then engaged to discountenance and suppress the activity of political emissaries. A French journalist named Gros, with a view to prepare the way for annexation by winning over the people, many of whom were descendants of fugitive Brazilian slaves, and attracting a colony of French immigrants, set up what he called an independent republic at Cunane, of which he proclaimed himself President. The Brazilian representative at Paris entered a protest against this proceeding, and an official notice was published by the French Government stating that France and Brazil both claimed sovereign rights over the district. This was sufficient to deter capitalists and emigrants from going into the

enterprise, and compelled the ambitious adventurer to retire. When the Brazilian minister in Paris broached the subject of a boundary settlement anew in 1878, M. Waddington assumed that Brazil had conceded the territory north of the Carsevenne, and that the tract in dispute was the area between that stream and the Amazon. This left the Brazilian Government no acceptable basis for negotiations. In 1892 the French Government suggested a mixed boundary commission. The Brazilian Congress made an appropriation, and in February, 1895, the French legation was informed that the Brazilian Government was ready to negotiate.

The question had meanwhile become much more urgent. A French citizen from Cayenne, named Tamba, had discovered rich gold deposits, which had brought an influx of adventurers, mostly from French Guiana. There was no security for life or property in the absence of all civil authority, and when Veiga Cabral, the chief of the principal Indian community, assumed to enforce laws and to levy taxes, and pretended to keep order with an armed force, his rule was accepted by the natives and for a time tolerated by the strangers. When the miners became numerous enough to form a community of their own in Cunane and on the Carsevenne river they refused to submit to the regulations and exactions of Cabral. They organized an administrative service, with a force of public surety of their own under the command of a settler named Trajane, who received an official commission from the authorities in Cayenne and hoisted the French flag. A border conflict was thus precipitated. The love of fighting as well as the lust for gold drew wild and daring men into the country from both sides. A force of 20 men belonging to Cabral's constabulary and led by Luis Bentes, a Brazilian officer, marched to Cunane, hauled down the French tricolor over Trajane's house, replacing it with the Brazilian flag, and carried him off a captive in irons to Mapa. This incident, when it became known in Cayenne, caused there great excitement. The Governor decided on taking immediate steps to restore French prestige and prevent the territorial claims from being extinguished by a *fait accompli*. He sent the gunboat "Bengali" to Mapa, with a company of marine infantry under Capt. Lunier. The marines were rowed 15 miles up the river to the village of Cabralo, where Cabral had his headquarters. Capt. Lunier landed with a part of his force and marched up to Cabral's house. Cabral shot the captain, after which a fusillade was opened upon the Frenchmen from all the houses in the village. According to the French account, Capt. Lunier carried a flag of truce, intending merely to demand the release of Trajane. The Brazilians say that the French soldiery were ordered to arrest Cabral, who fired in defense of his liberty. The whole French force was soon engaged, and gained the victory after two hours' combat. The Brazilians returned, however, with fresh forces after the French had burned the village, and the latter retreated and took to their boats, carrying off 2 Brazilians and a Portuguese subject as prisoners, and 5 killed and 20 wounded. The Brazilians were reported to have lost 60 men.

The French minister at Rio Janeiro entered



an immediate protest. The Brazilian Government promised to make a strict inquiry, but declared that French troops had no right to invade the neutral territory. The Governor of Para was ordered to investigate the matter, and when his report was received the Brazilian minister at Paris demanded indemnity for the losses of life and property. Gov. Sobre, of Para, asked for troops to guard the frontier, on the ground that the French were making fresh aggressions, though the Brazilians in the disputed territory seemed to have the advantage. Frenchmen who entered the territory had to submit to the commands of Cabral, and some were not permitted to land. Four Frenchmen were arrested, but were permitted to appeal to their Government for their release. In Cayenne, volunteers were enrolled in the Government offices to serve in the event of war. A great number of young men went out to Cunane, ostensibly as prospectors, but heavily armed and eager for a conflict. The Governor granted permission to minors to carry weapons, and issued a proclamation declaring that the Brazilian authorities were entirely at fault, and that France would seize the opportunity they gave to make good her claim to the whole country down to the Amazon. The French Government recalled Gov. Charvein, and ordered a judicial investigation of his conduct and that of the chief naval officer commanding the "Bengali." On Aug. 15 the French representative at Rio Janeiro and the Brazilian Minister of Foreign Affairs signed a protocol agreeing to submit the question of sovereignty over the neutral territory to the arbitration of the King of Sweden. Each Government has till April 1, 1896, to submit its case.

**BRITISH COLUMBIA**, the extreme western province of Canada.

**Government.**—Late in 1894 the ministry of Hon. Theodore Davie was sustained by a substantial majority in the general elections, but shortly afterward Mr. Davie resigned to accept the chief justiceship of the province, which had been vacated by the death of Sir Mathew Baillie Begbie. The Hon. James H. Turner, Minister of Finance, became Premier, and D. M. Eberts was appointed Attorney-General.

The new Legislature met on Nov. 12, and was opened by Lieut.-Gov. Dewdney, in a speech from the throne, of which the following passages are the most important:

The year which is now drawing to a close has been one of great financial depression throughout the world, and, consequently, in common with other countries, the revenue has not come up to expectation. The floods were productive of much damage to property, and expenditures became necessary in excess of the sums voted by the Legislature, for the purpose of restoring means of communication and extending temporary relief to those in need. The moneys required were raised, with the advice of my ministers, by special warrant, and you are called together at an earlier date than is usual, in order that you may ratify these and other expenditures demanded in the public service, and also to consider an act for raising a loan to be devoted to works of public utility. In extending relief to sufferers from the floods, I caused seed to be supplied to farmers who had lost their crop, with the highly gratifying result that the produce has not been seriously diminished, and in some instances is equal to and greater than in former years.

Coal mining, which during the early part of the

year was for lack of profitable foreign demand restricted, exhibits signs of renewed activity. The exports of lumber have been larger than in preceding years. Quartz mining in Kootenay, and the inauguration on a large scale, in Cariboo and elsewhere, of placer mining by improved hydraulic methods, have been most encouraging. The season's operations in salmon canning have been large; the sealing industry has experienced a successful year, the fleet returning with an unprecedented catch; and it is gratifying to observe that attention has been directed to deep-sea fishing, and that a regular trade has now been established with eastern markets. The Nakusp and Slocan Railway is completed, and large bodies of ore are being shipped over it. The bonds authorized by the act of last session have been negotiated in London, bearing interest at 4 per cent. per annum, and have been sold at a premium of 6 per cent. The Department of Immigration has effected the location of a Norwegian colony of well-to-do settlers in Bella Coola valley.

During the three months' session that followed, a large amount of business was transacted, the following being the most important measures that became law:

To confer limited civil jurisdiction upon stipendiary magistrates and police magistrates.

To authorize a revision of the statutes.

To amend and consolidate the acts relating to the legal professions.

The Woodman's Lien for Wages act.

For the establishment of a Government bureau of mines.

To amend and consolidate the act to regulate the practice of dentistry.

To amend the county courts act.

To incorporate tramway, telephone, and telegraph companies.

To provide £420,000 for the public purposes of the province.

To secure to wives and children the benefit of life insurance.

To supply water to the city of Nanaimo.

To amend the provincial voters act.

To incorporate cheese and butter associations.

The vote of \$600,000 for new Parliament buildings at Victoria was vigorously denounced by many of the members from the mainland. They contended that, instead of beautifying the capital—which is on the island of Vancouver—the money should be spent upon extending railways to mining centers and opening up new territory and resources. But arrangements were made to borrow the money as required, and handsome buildings are now in process of erection. Adjournment took place on Feb. 21, 1895.

**Finances.**—The estimated revenue for the year ending June 30, 1895, was as follows: Annual grant, interest and subsidies from the Dominion Government, \$245,089.45; land sales and revenue, \$160,000; timber royalty and licenses, \$40,000; timber leases, \$50,000; the miner's certificates, \$30,000; general mining receipts, \$25,000; licenses, \$35,000; real-property tax, \$99,000; personal-property tax, \$105,000; wild-land tax, \$50,000; income tax, \$8,500; revenue tax, \$47,500; fines and forfeitures, \$8,000; law stamps, \$12,000; registry and probate dues, \$55,000; interest, \$20,000; Chinese restriction act, \$30,000; succession duties, \$6,000; withdrawal of certain loans from sinking fund, \$130,000; miscellaneous, \$31,050; funds from 1894, \$90,000; total, \$1,268,139.45.

The estimated expenditures for the year were as follow: Public debt, \$187,400.80; civil gov-

ernment (salaries), \$145,880; administration of justice (salaries), \$116,654; legislation (salaries), \$38,800; public institutions (maintenance), \$27,650; hospitals and charities, \$43,750; administration of justice (sundries), \$52,700; education, \$188,745; transport, \$7,550; revenue services, \$10,000; public works, \$343,950; miscellaneous, \$74,568.50; total, \$1,237,648.30.

During the summer of 1895 Mr. Turner, the new Premier, visited England, and issued a provincial loan of £420,000. It runs for fifty years, and was taken up at 95 and 3 per cent. interest. On his return he was able to announce that a powerful syndicate had been formed in London to develop the mines of British Columbia.

**Railways.**—Railway construction during the year was limited chiefly to the completion of the Nakusp and Slooan Railway, which had been built to furnish an outlet to the silver ores of the Kootenay mining district. Many thousand tons of ore have since been shipped to United States smelters. Other projected lines into this mineral region were also discussed or carried forward a stage. The British Pacific Railway, an important and wide-reaching enterprise, was deferred, and other proposed and chartered lines were delayed for want of capital.

**Mining.**—The mining development of the year was satisfactory. The output of coal during 1894 was 1,012,953 tons, making it the second best year on record. Of this amount, 827,642 tons were exported, chiefly to California. Some went to Alaska, Siberia, and the Hawaiian Islands. On one of the islands of the Queen Charlotte group 3 beds of bituminous coal have been discovered, and also 2 large seams of anthracite. Investigation showed the existence of a seam of coal 30 miles long and of a superior quality near the Crow's Nest pass in the Rockies, and several smelting works have been established upon the mainland.

Exports of silver ore from the Kootenay district began in December, 1893, and in the following six months were valued at \$415,000. Gold mining also appears to have had a boom, principally in the Cariboo district, where several joint-stock companies have been formed.

Rich deposits of iron ore have been discovered where the ore averages 65 per cent. of iron. They are said to be extensive and accessible. During the twelve months ending June 30, 1895, 40 mining and smelting companies were incorporated in the province, with a nominal capital aggregating \$24,344,000.

**Fisheries.**—The fisheries of the province were successful. The total salmon pack during 1894 was 494,371 cases, valued at \$2,362,714. The shipments of halibut to New York and Boston were in their usual quantities and in good condition. During the year 53 vessels, averaging 66 tons, and giving employment to 827 whites and 518 Indians, sailed from Vancouver to seek the fur seal. The catch was large, amounting to 94,474 skins, but the ruling prices were poor. Great dissatisfaction was felt in the province at the refusal of the American Congress to confirm the agreement with Great Britain regarding the compensation of \$425,000 for the Bering Sea seizures.

**Lumber.**—During the year the export trade in lumber largely increased, but the prices were

not very remunerative. The quality and extent of the resources of the province in this respect are very great, and it is therefore not surprising that in 1894 13,730,764 feet were taken from leased lands, while over 54,000,000 feet were taken from Crown lands, timber limits, and private property. The total exports were 46,490,000 feet.

**New Industries.**—These were confined to the establishment of some smelting works—notably that at Pilot Bay, West Kootenay, and the development of certain paint, chemical, and cold-storage works begun in the previous year.

**Agriculture.**—In the fiscal year ending June 30, 1894, 60,642 bushels of wheat were imported, in addition to the large quantities from Manitoba. But the good harvest of the succeeding season is expected to diminish this import. Fruit was largely grown and in good demand, the area under hops was much increased, and dairy farming received active encouragement from the Government.

**Education.**—During the year 185 schools were in operation, the total expenditure on education being \$169,050, an average of \$13.40 per pupil enrolled, or \$21.71 if based on the actual general attendance.

**Commerce.**—Despite the eommercial depression trade in the province was exceptionally good. For nearly a quarter of a century the exports have increased with almost unbroken regularity, and during this year they reached high-water mark. The imports also were augmented. The continued success of the Canadian Pacific steamship service to China, Japan, and Australia helped largely in this development, and the vessels of the Northern Pacific line were also kept fully engaged.

**BULGARIA**, a principality in eastern Europe created in 1878 out of a former province of Turkey by the decision of the great powers at the Congress of Berlin and augmented by the annexation of the province of Eastern Roumelia in 1885. The legislative power is vested in the Sobranje, a single Chamber in which, under the constitutional amendment adopted in May, 1893, there is a representative for every 20,000 of population. Every adult male citizen possesses the electoral franchise.

The reigning prince is Ferdinand, born Feb. 26, 1861, youngest son of the late Prince August of Saxe-Coburg-Gotha and of Princess Clementine of Bourbon-Orleans. He was elected by the vote of the Sobranje in 1887, and has since reigned *de facto*, though his election, as well as the union of the two Bulgarias, has not been regularized by the formal sanction of the treaty powers and of the Ottoman Porte.

The Cabinet of ministers in the beginning of 1895 was made up as follows: President of the Council and Minister of the Interior, Dr. C. Stoiloff; Minister of Foreign Affairs and of Public Worship, G. D. Nachevich; Minister of Finance, Ivan E. Gueshoff; Minister of Justice, P. Pecheff; Minister of Public Instruction, Dr. V. Radoslavoff; Minister of War, Col. R. Petroff; Minister of Roads and Communications, C. Velichkoff.

**Area and Population.**—The area of Bulgaria proper is estimated to be 24,360 square miles, and that of South Bulgaria, as Eastern



Roumelia is now called, 13,500 square miles. The total population of both on Jan. 1, 1893, was determined by a census to be 3,309,816. There were 2,504,336 Bulgars, 569,728 Turks, 60,018 Greeks, 51,754 gypsies, 27,531 Jews, 3,260 Germans, and 1,379 Russians. In religion, 2,605,905 were Greek Orthodox, 22,617 Roman Catholic, and 643,242 Mohammedan. The population of Sofia, the political capital, is 47,000; of Philippopolis, capital of South Bulgaria, 36,000. The number of marriages in 1893 was 31,640; of births, 141,320; of deaths, 92,100; excess of births, 49,220.

**Finances.**—The revenue for 1894 was estimated in the budget at 101,077,550 lei, or francs, and expenditure at 102,207,982 lei. Of the revenue, 41,942,250 lei were direct contributions, 22,362,000 lei customs and excise taxes, 7,549,000 lei receipts from transportation, 5,757,800 lei revenues from public property, 3,906,500 lei tolls, 720,500 lei fines, and 18,839,500 lei came from other sources. Of the disbursements, 17,336,651 lei were for the public debt, 17,295,353 lei for financial administration, 22,412,787 lei for defense, 12,902,383 lei for transportation and public works, 9,351,268 lei for the interior, 8,823,743 lei for education, 4,763,347 lei for justice, 4,215,358 lei for commerce and agriculture, 3,403,292 lei for foreign relations, and 1,766,800 lei for the central administration. The debt amounts to 158,000,000 lei.

**The Army.**—The national army, in which service is obligatory, consists of 24 regiments of infantry, 4 of cavalry, and 6 regiments of field artillery, besides 6 mountain batteries. The forces are organized in 3 divisions of 2 brigades each, mustering in time of peace 38,320 officers and men, and having a war strength of 175,000 men, with 288 field guns and 36 mountain guns. Vidin, Rustchuk, and Silistria are fortresses on the Danube, Varna on the Black Sea, and Shumla near the Servian land frontier. A flotilla of small gunboats is kept for the defense of the Danube.

**Commerce.**—The Bulgarians are a farming population. The chief product is wheat. Other articles of export are animals, wool, tallow, timber, flax, butter, cheese, and hides. The value of the grain exports in 1893 was 74,609,525 lei; of the live animals exported, 6,525,000 lei. The total value of imports in 1893 was 90,867,900 lei, the principal articles being textile fabrics for 27,984,300 lei, metals for 8,476,925 lei, and machinery for 7,879,850 lei. The extent of the trade in 1893 is shown in the following table, giving values in lei:

COUNTRIES.	Imports.	Exports.
Great Britain.....	20,121,376	17,045,094
Austria.....	32,515,869	2,300,431
Turkey.....	10,014,471	24,510,036
Germany.....	12,060,053	15,818,460
France.....	4,028,818	14,232,212
Italy.....	2,307,723	2,163,191
Russia.....	3,388,911	32,676
Roumania.....	2,155,150	602,077
Belgium.....	1,518,578	873,150
Servia.....	1,194,969	191,989
Switzerland.....	1,045,033	189
Greece.....	98,635	516,291
United States.....	117,494	35,378
Total.....	90,867,900	91,463,653

**Communications.**—There are 520 miles of railroads and 2,953 miles of telegraph lines. The number of telegraphic dispatches in 1892 was 1,056,610. The mails carried 11,304,000 letters, newspapers, etc.

**Fiscal Reform.**—In attempting partially to equalize and modernize the system of taxation on the renewal of commercial treaties with various states, the Bulgarian Government became involved in diplomatic difficulties. A plan of financial reform was worked out by which the tithes would be reduced 40 per cent., and the extra taxes diminished considerably. The direct taxes—consisting of the tithe, the tax on vineyards, the land tax, and the tax on sheep and goats—all falling almost exclusively on the peasants, have amounted to nearly twice as much each year as the indirect taxes. The peasants have, in fact, paid more than twice as much *per capita* for the support of the Government as the inhabitants of the towns—12·65 francs in 1894 against 6·15 francs. In Roumania, Servia, and Bosnia the tithes and other antiquated taxes have been reformed; and after studying the systems introduced there, the Bulgarian Government decided to make similar, though less complete, changes for the relief of the complaining farming people. The tithes were much higher than they used to be when they were payable in kind, having been commuted into a money tax on the basis of the prices for agricultural produce that formerly prevailed. Some countries whose commercial treaties were about to expire were induced to permit an increase in the import duties from 8½ to 10½ per cent. *ad valorem*. In addition, a light excise duty, 75 centimes a kilo, was imposed by an act passed by the Sobranje upon certain luxuries, such as spirits, olive oil, and confectionery. The tobacco duty was doubled a year before, but had yielded only three fourths of the anticipated 12,000,000 francs. A provisional commercial convention had been concluded with Austria-Hungary before the act was passed on Dec. 30, 1894. As soon as the bill was signed the Austro-Hungarian Government raised a protest, representing the new tax as an augmentation of the customs duty. The Bulgarian Government in its reply contended that it was a purely domestic impost. Austrian and other foreign merchants resisted the assessment of the excise tax, refusing to allow an inventory of their stock to be taken, as they were enabled to do by the capitulations, and Bulgarian merchants would not submit to an impost that their foreign rivals were enabled to elude. The new excise was calculated to bring in 7,000,000 francs, and the increased import duties 3,000,000 francs. A license law, introducing a progressive tax on the incomes of traders and manufacturers, foreigners as well as Bulgarians, required under the capitulation the assent of the powers, which was not given to a similar law passed in 1885. The new internal-revenue duty and the increased customs duty were threatened with defeat by the action of Turkey, even if the difference with Austria were settled, for the Porte threatened to levy a proportionate excise duty and a differential customs duty of 2 per cent. on Bulgarian products. The Bulgarian Prime Minister went to Vienna, and on May 9 an

agreement with the Austro-Hungarian Government was reached, whereby not only was the excise duty maintained, but in the definitive treaty of commerce, which should be concluded within two years, the duty of 10½ per cent. on imports was to be increased to 14 per cent. The Bulgarian Government, in its negotiations with the powers whose treaties of commerce expired Jan. 13, 1895, originally proposed to make the general tariff 15 per cent., and accepted provisionally an increase to 10½ per cent. This was the arrangement made with Great Britain and the other countries pending the conclusion of new treaties within two years.

**The Assassination of Stambuloff.**—The government of M. Stoiloff, supported by the Conservative and Unionist parties, crushed out opposition as ruthlessly and effectually as Stambuloff had done. Elections took place in the beginning of February, 1895, to fill vacant seats in the Sobranje. At Tirnova the Government candidate was elected by an overwhelming majority over Stambuloff and a Zankoffist, but not without a conflict between the military and the people. The authorities used force also at Rustchuk and Loftcha; and at Biela Slatina, where Zankoff was elected at the previous election, both parties used firearms, and his supporters were prevented from voting. The only place where an Opposition candidate was allowed to be elected was Rasgrad, which returned Karaveloff. In the municipal elections at Varna, which occurred later, the adherents of Radoslavoff were ousted after a serious riot. Although the Opposition parties were deprived of representation, there was no harmony between the factions of Stambuloff, Radoslavoff, Zankoff, and Karaveloff.

A commission of the Sobranje, appointed to investigate the actions of Stevan Stambuloff and his Cabinet, on Jan. 2, 1895, obtained from the military court an order for the arrest of the fallen dictator, on the charge of complicity in the murder of Beltsheff, on account of which Petko Karaveloff was sent to prison for five years in 1891. The latter was now set free. The threatened arrest of Stambuloff caused a great agitation among the people. The foreign diplomatic agents in Sofia intervened to prevent the arrest. The popular unrest was extended to the army by the action of the Government in dismissing, on the ground of incapacity, 25 captains and many other officers who had been promoted by the late Government. The police made domiciliary visits at the house of Stambuloff, and constantly persecuted him and his followers. Several of his police officials were convicted of crime. M. Lukanoff, who was prefect of Sofia during the latter years of his Government, was sentenced to four years' imprisonment on the charge of torturing persons suspected of plotting against Prince Ferdinand. Stambuloff knew in April that a band of his enemies was leagued together to murder him, to revenge Major Panitza and four men who were executed as Beltsheff's murderers, and suspected that the ministers and the Prince were cognizant of the plot. The chief of this band was Tufekchieff, who was sentenced in Constantinople for the murder of Dr. Vulkovich, the Bulgarian agent, and whom the Bulgarian Government re-

fused to extradite and allowed to go free, notwithstanding its promise to keep him imprisoned. Under a law passed in the last session of the Sobranje, the former Mayor of Sofia and some employees of the Government of Stambuloff were cited before the tribunals to give an account of their official conduct and of the sources of their income. When himself summoned to testify in a suit brought against one of his police inspectors for illegal arrest by Col. Kissoff, who was interned as the leader of the conspiracy against Prince Ferdinand in 1890, Stambuloff refused to obey, on the ground that an ex-Cabinet minister can not be called to account for his official conduct except by order of the Sobranje. He and his friends, foreseeing his impending fate, begged the Government incessantly to allow him to leave the country, his physician having ordered him to go to Carlsbad for the waters. The Government refused to let him depart, because the commission of inquiry objected. He kept armed retainers to prevent his enemies from breaking into his house.

On July 15, when he was about entering his house, Stambuloff was attacked by four men, two of whom shot him and two stabbed him. Wounded in twenty places, he died on the third day, after telling his wife that Haliu and Tufekchieff had killed him, getting her to promise to accept nothing from the palace. The police, instead of arresting the assassins on the spot, allowed them to escape and cut down those who attempted to pursue them, and then pushed their way into the house of the murdered man and arrested his friends and servants on the pretense that they were accomplices. The widow rejected the wreath sent by Prince Ferdinand and his message of condolence and refused to receive any one connected with the Government or the court. At the funeral a rabble danced and sang ribald songs over the grave. A month later the grave was desecrated and an attempt was made to steal the body. Prince Ferdinand, who was at Carlsbad when his former minister was murdered, was afraid to return immediately.

**Deputation to St. Petersburg.**—In furthering the intrigue by which Stambuloff was removed from office Prince Ferdinand was actuated by the desire to become reconciled to the Czar and obtain the recognition of the powers. Zankoff, who was pardoned and returned from exile in January, 1895, was ambitious to be the agent of reconciliation, but the Stoiloff ministry was willing to make concessions in order to regain the good will of the Czar. The Sobranje voted to send a deputation to St. Petersburg to deposit a wreath on the tomb of Alexander III. The Pan Slavist agitation in Bulgaria ceased after the degradation of Stambuloff. Prince Lobanoff, Russian Minister of Foreign Affairs, sent out a circular in March to Russian representatives in the Balkan states, enjoining them to abstain from interference in the domestic affairs of those countries. The Bulgarian deputation, headed by Archbishop Clement and Teodoroff, President of the Sobranje, arrived in Petersburg in the beginning of July and was received by Prince Lobanoff, and on July 17 had an audience with the Emperor.

**Macedonian Agitation.**—A movement was started in Bulgaria for the revival of the Mace-



donian question, which the Government attempted to discredit, but took no pains to check. Macedonian committees were formed in every town and funds were collected with the avowed object of securing the execution of the reforms in Macedonia that had been promised in the treaty of Berlin.

The Government moved officially in the related question of the Bulgarian exarchate in Macedonia. The exarchate was established by the firman of March 11, 1870, which restored the ancient autocephalous Church, and thus recognized the Bulgarians as a distinct nationality within the Ottoman Empire in spite of the opposition of the Greek patriarchate. The privileges accorded by the firman were withdrawn in part in 1876 in consequence of the action of the patriarchate in declaring the Bulgarian Church schismatic; but some of them were revived by the appointment of Bulgarian bishops to Uskub and Ochrida in 1890 and to Nevvokop and Kuprili in 1894. The Exarch Joseph in 1895 petitioned for *berats* for Adrianople, Monastir, and Salonica, to which the Sultan Abdul Aziz, in the firman of 1870, promised to appoint bishops, and for two other districts under the clause of the firman that stipulates that bishoprics shall be erected wherever two thirds of the population demand.

The aspirations of the revolutionary Bulgars in Macedonia, who found as yet little support among their Greek, Servian, Wallachian, and Albanian fellow-subjects, were for the creation of an autonomous province and the promulgation of an organic statute like that of South Bulgaria. The revolutionary excitement in Macedonia was caused by the Armenian troubles. The political societies that fomented the agitation confined their formal demands to the introduction of autonomous institutions guaranteed by the powers in the treaty of Berlin. There were two rival Macedonian societies in Bulgaria, known respectively as the Fraternal Union and Young Macedonia, the former affiliating with Karaveloff's party, and the latter with the party of Stambuloff. A congress was convoked in Sofia at the beginning of April, at which delegates representing the interests of the Greeks, Wallachs, Serbs, and Albanians in Macedonia were expected to appear. Not only was the co-operation of committees in Athens, Bucharest, and Belgrade withheld, but the Fraternal Union held aloof until one of its leading members, M. Kitanchieff, was elected president of the congress. The Turkish Government urged the Bulgarian Government to apply repressive remedies to the growing agitation. After an affray occurred, in which a Turkish official lost his life, the Turkish garrisons on the frontier were strengthened. Arms were seized and adventurers who attempted to enter Turkey were arrested. The Turkish officials in Macedonia resorted to harsh methods to repress the agitation, and thus made the situation more dangerous. Thousands of Macedonians who were in Bulgaria as laborers and their Bulgarian sympathizers were ready to cross the frontier with arms in their hands. In June Turkish frontier guards crossed the line in three places, and the Bulgarian Government made representations on the subject to the Porte. A troop of Bashi Bazouks came into collision with Bulgarian police,

who had seized sheep that strayed over the border, and wounded some of the gendarmes, for which the Bulgarian Government demanded from the Porte a pecuniary indemnity. On June 19 an insurrection broke out in the district of Palanka, which was followed by disorders in the district of Katchianik, both situated in the vilayet of Uskub. Armed bands began to pour into Turkey from Roumelia, unrestrained by the Bulgarian frontier guards that had been increased on account of the violations of the frontier by Ottoman troops. The insurgents engaged the Sultan's troops in the mountains and compelled one company of them to retire. A Mohammedan village near the frontier was burned. The Bulgarian Government, which in its declarations regarding the Macedonian movement had taken a correct attitude, was afraid to co-operate with the Turkish authorities and even sought a ground for quarreling with its suzerain. In reply to a note of the Porte urging that a stricter guard be kept on the frontier, the Bulgarian agent at Constantinople presented a note repeating the demand for satisfaction for the recent violations of Bulgarian territory and reiterating the request of the exarch for the creation of five new bishoprics. The Porte returned a sharp refusal to this demand, denying the right of the Bulgarian Government to interest itself in Macedonian affairs or to intervene in its relations with the Bulgarian Church in Macedonia. The same note contained a significant hint that unless the Bulgarians, both in the principality and in Macedonia, maintained a peaceable attitude the consequences for them would be disastrous. On receiving this uncompromising reply, the Bulgarian Government informed the Sultan that it saw no necessity for the presence of its diplomatic representative at the Porte. In consequence M. Dimitroff left Constantinople on June 23, leaving the agency in charge of the secretary.

The Macedonian revolt spread rapidly between Palanka and Vranja, extending to the country between the rivers Pshinia and Kriva. The rebels tore up the railroad. In Preshowo, the Arnauts formed bands of Bashi Bazouks and attacked villages. The insurgent bands that fought the Turkish troops were armed with Martini-Henry rifles. The Turkish troops at Palanka were re-enforced, until it was impossible for fresh bands to cross the frontier. One band of insurgents was surrounded at the village of Gherman, and many were killed and the remainder made prisoners. The political parties in Bulgaria no longer hesitated to show open sympathy with the rebellion. Some Macedonians who held commissions in the Bulgarian army deserted to take part in the revolutionary uprising. Exaggerated stories of Turkish violence, of atrocities, such as the exhibition of heads, were spread abroad, in the vain hope of eliciting sympathy abroad and gaining the support of some of the great powers, for unless they intervened the attempted insurrection must come to naught. The Turkish Government drafted regiments from Constantinople and Asia Minor, until 50,000 or 60,000 regular troops were massed in the disturbed district, whose duty was to watch the Bulgarian army and to serve as a reserve only for dealing with the insurgents, as Bashi Bazouks were organized in

every district to suppress a revolt wherever it should arise, and preparations were made for calling in the Albanian clansmen if their aid were needed. The powers made representations at Sofia in regard to the questionable attitude of the Government, which replied in a circular note that the sympathy evinced by the great powers for Armenia had led the Macedonian emigrants in Bulgaria to hope to obtain for their country reforms similar to those proposed in Armenia; the Bulgarian Government had permitted the agitation to go on, being persuaded that it was employing purely moral means, and that severe repressive measures would lead to a more dangerous secret agitation. The note expressed the hope that the great powers, which had already expressed their views regarding the evils of the existing administration of Macedonia, would find means in the interests of peace to calm the public mind, as had been done in the case of Armenia. A promise was made to the Porte to

take vigorous measures against the agitation and to prevent bands from crossing the border. Accordingly, the prefects were warned to watch closely enterprises directed against any neighboring state.

A band of 1,000 Bulgarians made a raid across the frontier near the end of July, and after defeating the Turkish patrol at Djuma, entered the town of Menlik, and burned the Mohammedan quarter. On Aug. 9, another band of 1,000 men raided the Mohammedan district of Kirdjali and burned the town of Janakli, after killing 25 of the inhabitants. For this the Porte demanded explanations of the Sofia Government, which replied that no effective surveillance of the frontier is possible without keeping Bulgarian troops there, to which the Porte has always objected. The Mussulman village of Kustendil, in the Rhodope district of Bulgaria, was burned after a fierce fight with the villagers in which many fell on both sides.

## C

**CALIFORNIA**, a Pacific coast State, admitted to the Union Sept. 9, 1850; area, 158,360 square miles. The population, according to each decennial census since admission, was 92,597 in 1850; 379,994 in 1860; 560,247 in 1870; 864,694 in 1880; and 1,208,130 in 1890. Capital, Sacramento.

**Government.**—The following were the State officers during the year: Governor, James H. Budd, Democrat; Lieutenant Governor, Spencer G. Millard; Secretary of State, Lewis H. Brown; Comptroller, Edward P. Colgan; Treasurer, Levi Radcliffe; Attorney-General, W. F. Fitzgerald; Surveyor-General, M. J. Wright; Superintendent of Public Instruction, S. T. Black; Chief Justice of the Supreme Court, W. H. Beatty.

**Finances.**—The report of the Comptroller showed balances on hand in the various State funds on Dec. 1, 1894, as follows:

General fund, \$175,891.19; school, \$187,300.69; interest and sinking, \$25,086.16; State school land, \$22,813.35; State school-land deposit, \$8,160; San Francisco harbor improvement, \$75,098.09; State University, \$3,471.09; Mining Bureau, \$486.59; State Library, \$6,149.90; Supreme Court Library, \$2,218.93; war bond, \$2,993.30; Yosemite valley, \$49.49; adult blind, \$5,802.13; revolving fund, \$43,529.60; estates of deceased persons, \$730.72; railway tax, \$448,520.28; railway tax contingent, \$1,868.86; Fish Commission, \$380.44; San Quentin State Prison, \$133,458.51; Folsom State Prison, \$73.06; Insurance commissioners, special, \$3,340.55; Bank Commissioners, \$8,766.95; State schoolbook, \$32,354.50; dissolved savings bank, \$3,069.70; Fish Commissioners' fund, purchase of boats, \$1,100; special Mendocino Insane Asylum, \$15,723.73; San Diego harbor improvement, \$4.95; San Francisco depot sinking, \$22,444.50; Whittier Reform School, \$15,559.31; Building and Loan Association inspection, \$715.45; San Francisco depot, \$71.25; total amount in State Treasury, \$1,254,292.02.

Other items in the Comptroller's report show that the receipts for the fiscal years 1893-'94 and 1894-'95 were \$17,583,493, and the expenditures \$17,078,647; excess of receipts over expenditures, \$504,846. For the forty-fourth fiscal year the tax levy for school purposes was \$1,966,-

174. The actual amount collected from property tax was \$2,115,911. For the forty-fifth fiscal year there was levied for school purposes \$2,057,279. There was collected \$2,201,144, of which \$72,758 was for back railroad taxes for the years 1880 to 1885, inclusive.

The receipts from other sources amounted to \$569,316. These amounts, together with the balance from the forty-fourth fiscal year, aggregated \$3,361,637.

The funded debt of the State held in trust for the university and school funds amounts to \$2,282,500.

**Appropriations and Taxes.**—The tax-levy bill passed by the last Legislature is a mandatory statute, and reads as follows:

The State Board of Equalization must, for State purposes, for the forty-seventh and forty-eighth fiscal years, fix such an *ad valorem* rate of taxation upon each \$100 in value of taxable property in this State, as after allowing 5 per cent. for delinquencies in costs of collection of taxes, as provided in section 3696 of the Political Code, will raise for the forty-seventh fiscal year: First, for the general fund, \$4,913,106; second, for the school fund, \$2,195,459; third, for the interest and sinking fund, \$141,435. And for the forty-eighth fiscal year: First, for the general fund, \$2,681,371; second, for the school fund, \$2,195,459; third, for the interest and sinking fund, \$141,435. The total amount of appropriations passed and provided for in this bill was \$12,268,265; of this, \$7,250,000 was for the forty-seventh fiscal year, \$4,913,106 being for the general fund. The amounts payable from this fund during the year are: Half of the general appropriations, \$2,311,869; miscellaneous and special appropriations, \$600,000; for orphans, \$325,000; and all deficiencies, \$294,661; making a total of \$3,531,530. But the State Board of Equalization has no power to raise any other amount than the sum called for in the tax-levy bill, therefore the tax levied for the year as ordered was \$4,913,106, and thus a surplus of \$1,381,576 above what was necessary has been provided for by the levy of about 10 cents on each \$100 of valuation for the present year.

**Legislative Session.**—The thirty-first biennial session of the Legislature began on Jan. 7 and continued until March 16. In 1894, Gov. Budd was the only Democratic State officer



elected, his majority being 1,206, and the Republican majority for Lieutenant Governor being 21,678. The Republicans determined to contest Budd's election on the ground of fraud, and made efforts to do so, finally appealing to the Attorney-General for his opinion as to how the contest should be made. By him they were advised that the article of the Political Code which provides the manner of a gubernatorial contest is unconstitutional in that it confers judicial power on the Legislature, and that the State Constitution prohibits contest for Governor and for every office under the State government. Gov. Budd therefore was inaugurated on Jan. 11. On Jan. 23 George C. Perkins, who by appointment had acted as successor to Leland Stanford since that gentleman's death, was elected to fill the unexpired term as United States Senator.

Among the constitutional amendments proposed by the Legislature which are to be submitted to public vote are these: To permit the use of voting machines at all elections; to exempt mortgages from taxation; to extend the right of suffrage to women; to limit the liability of stockholders of corporations or joint-stock associations, and make directors or trustees jointly and severally liable to stockholders and creditors for all money embezzled or misappropriated by officers of the corporation.

A primary election law was enacted which provides that all political parties must now hold their primaries on the same day, at the same place, and with the same election board, which must be nonpartisan. Each party must have a ticket of distinctive color, and if a voter offers a ticket of a party other than that to which he belongs his vote may be challenged and refused. This law applies only to counties of the first and second class, but it provides that the Governor shall issue a proclamation to make the day on which the primary election is held a legal holiday throughout the State.

Resolutions were adopted favoring, respectively, Hawaiian annexation and the election of United States Senators by popular vote; asking Congress to do all in its power to assist in constructing a cable from San Francisco to the Hawaiian Islands; to enact laws for the protection of farm products; to amend the laws granting arid lands to the State, so as to permit California to reclaim them and drain them as a permanent school endowment; to appropriate \$2,000,000 for improvement of Sacramento and San Joaquin rivers; to make an appropriation for the construction of a deep-sea harbor in Los Angeles County; and memorializing Congress for the enactment of legislation for the free coinage of silver at the ratio of 16 to 1.

Among bills that became laws are these:

To aid the dairy industry by prohibiting frauds in butter and cheese, and establishing a State dairy bureau.

Compelling barbers and bath-house proprietors to close for half a day on Sundays and legal holidays.

Amending section 731 of the Penal Code and adding a new section relating to the suppression of riots and parading of independent companies.

Requiring boards of commissioners having the management and control of paid fire departments to grant the members thereof yearly vacations.

Creating an exempt firemen's relief fund in the several counties and cities and counties of the State.

Adding a new section to the Penal Code to be known as 52½ and relating to the severance and removal of fixtures and improvements upon mortgaged property.

Authorizing the issuance of bonds by cities or towns to protect them against overflow.

Appropriating \$50,000 for the survey, location, and construction of a free wagon road from the town of Mariposa to the Yosemite valley.

Creating the office of fish and game warden.

A new bankrupt act.

To create a public school-teachers' annuity fund.

To provide for the purchase by the State of real estate sold for delinquent taxes and providing for the subsequent redemption of such property at a reasonable rate of interest.

To provide that a grant or conveyance of real property, made by a married woman, may be made, executed, and acknowledged in the same manner and have the same effect as if she were unmarried.

To prevent the sale of imitation or adulterated honeys.

To create sanitary districts, and providing that no license to keep a saloon or to sell liquor at retail shall be operative without the consent of the sanitary board.

To prohibit adulteration of drugs, food, or drink, and to prohibit the watering of liquors.

Appropriating \$10,000 to enable the State to make a suitable exhibit at the Atlanta Exposition.

**Insurance.**—The report of the Insurance Commissioner gives the following statistics for 1894: Amount of fire insurance written, \$385,522,503; premiums, \$6,780,453.93; losses paid, \$2,667,160.24; amount of marine insurance written, \$128,610,786; premiums, \$1,354,439.16; losses paid, \$808,792.67.

**Banks.**—There are 31 national banks in the State, 4 fewer than in 1894. The semiannual statement of the Bank Commissioners, made in August, shows the combined assets of the national banks to be \$31,157,277.77, a gain in twelve months of \$1,467,327.17. The total amount of money on hand in the banks of the State on June 15 was divided as follows: National banks, \$4,658,487.72; private banks, \$120,087.42; commercial banks, \$18,571,248.42; savings banks, \$4,600,551.11; total, \$27,950,374.67. The combined assets by classes were: National banks, \$31,157,277.77; private banks, \$2,516,943.69; commercial banks, \$130,514,624.94; savings banks, \$144,990,729.01; total, \$309,179,571.41. There was due to depositors from national banks, \$15,781,747.58; from private banks, \$919,386.18; from commercial banks, \$56,583,174.24; from savings banks, \$126,830,512.86; total, \$200,114,820.86. These figures show an increase in deposits of \$4,431,634.33 during the half year.

**Railroads.**—The Valley Railroad, to extend through the San Joaquin valley from San Francisco eastward and southward to Bakersfield, Kern County, 350 miles, was incorporated in January. By legislative action permission was given to the company to lease 50 acres for a terminus from the San Francisco Harbor Commissioners.

The annual report of the Southern Pacific Company, its proprietary companies, and leased lines for the year ending Dec. 31, 1894, was issued in May. It shows as total receipts above operating expenses, \$16,050,949, a decrease from the receipts of 1893 of \$2,107,840, attributable to a falling off in business consequent upon the strike, hard times, and other causes. Receipts

from other sources swell the aggregate of receipts to \$16,963,335.

The annual report of the Central Pacific Railroad Company shows receipts, from earnings and other sources, of \$13,118,244, against \$14,319,907 for 1893. The total expenditures were \$12,973,651, against \$13,535,190 for 1893. The net income from operations for the year was \$144,593, against \$784,717 for 1893.

The first issue of this company's second mortgage bonds fell due in January. They amounted to \$2,362,000, with 6 per cent. interest for thirty years, or a total of \$6,613,600. At the beginning of the year there was in the United States Treasury to the credit of the land and interest account, for transportation service rendered to the Government by the company, the sum of \$7,208,945.63. In the sinking fund there was \$5,436,000, and the company was entitled to additional credits of \$658,283.26 and \$264,107.76, making the total assets of the company in the possession of the Government \$13,567,336.35.

The matter of the railroad reassessment for 1887 is still unsettled.

The Southern and Central Pacific Railroads have made recent selections of more than 500,000 acres of land. By law they are permitted to select only agricultural land, but it is contended that much of the land selected is mineral land, and efforts are being made to prevent the issuance of patents to the railroads therefor.

**Dairy Bureau.**—This bureau, created by the last Legislature, was organized in May and has made stringent regulations for the protection of the milk, butter, and cheese industry. Heavy penalties will be exacted for adulteration or for selling oleomargarine and kindred products without labels accurately describing them.

**Wines.**—Internal revenue returns filed in September show that there are 104 stills in the State, each of which employs about 15 men. The Government allows vineyardists to conduct distilleries for the manufacture of grape brandy to be used in flavoring or "fortifying" sweet wines, and on brandy so used no tax is levied. For the proper investigation of the sweet-wine distilleries, and to prevent abuse of the "right of fortification," Government keeps more than 60 gaugers in the field, whose services are free to the vineyardists. The brandy used is 24 proof, and sherry, port, angelica, and muscat contain about 14 per cent. of brandy for fortification. Following is the output of sweet wines, in gallons, for the season of 1894-'95, as reported before and after official fortification, the increase noted being due to the addition of brandy: Plain wine, port, 1,345,598; sherry, 483,877; angelica, 240,718; muscat, 151,501; total, 2,221,694. Fortified, port, 1,595,135; sherry, 566,716; angelica, 289,319; muscat, 183,163; total, 2,634,333. Fresno and Los Angeles are the great sweet-wine centers.

By action of the Legislature the State Board of Viticulture was this year dissolved, and the duties performed by it were imposed upon the State University, with an annual appropriation of \$5,000. The report of the board, made at the end of last year, showed that of the \$30,000 appropriated for the support of the commission for 1894 and 1895, \$14,171.11 had been expended.

**Oranges.**—The Southern California Fruit Exchange at Los Angeles reports that during the

season of 1894-'95, closing Sept. 1, 2,502,500 boxes, or 7,700 cars, of oranges were shipped through the exchange. This included 3,205 cars of navels, 2,924 cars of seedlings, 881 cars of Mediterranean sweets, 254 cars of Australian navels, 203 cars of St. Michaels, 82 cars of bloods, 47 cars of Valencias, and 4 cars of Jaffas.

#### **Fruit Growers' and Shippers' Association.**

—This society, organized in February, is the result of a resolution adopted by the Fruit-growers' Convention, held in Sacramento in November, 1894. Its object is to establish a bureau of information for the purpose of regulating the distribution of Eastern fruit shipments, and also for arranging the number and method of auction sales of such shipments. It was decided to have only one auction room in each city, and also that the sales and rooms should be open and free to all bidders. At its organization the society represented 75 per cent. of the fruit industry of the State.

**Insane Asylums.**—In February the east wing of the San Bernardino asylum for the insane was finished; the west wing was completed in November, 1892, and was opened in August, 1893. With its two wings, the asylum has a frontage of over 800 feet, and includes four wards for men and two for women. In June it contained 311 patients—207 men and 104 women. This is one of several asylums for the insane. The Governor this year refused to sign the bill making appropriation for its maintenance, and in his message to the Legislature said that one of the main sources of State extravagance is the care of the insane, and that a large percentage of the so-called patients confined in the State asylums are not legally entitled to a home in those institutions.

**Folsom Prison.**—On July 11 there was turned over to the State property valued at \$2,000,000, the payment for which had been made in convict labor at 50 cents a day for each convict. This property comprised the 483 acres near Folsom devoted to the prison site, all the buildings on it, a dam in the American river within the prison site, a 30-foot canal 6 feet deep to Folsom, with a 72-foot fall at Folsom, and a power house and first-class electric plant. The work was done by State convicts for the Folsom Water Power Company, successor to the Natoma Water and Mining Company, which owns the bed of the American river and land on both sides for 2 miles. Power can now be furnished to large factories and plants of various kinds. On July 12 electric power was transmitted from Folsom to Sacramento. In 1858 the Legislature authorized the selection of a site for a branch prison; in 1874 \$175,000 was appropriated for its construction, and Folsom prison was completed in 1882.

**Society of Pioneers.**—The annual report of this society shows the receipts for the year in the general fund as \$20,595.62; disbursements, \$19,534.33. The relief fund was increased, \$1,715.93 during the year, making a total in this fund of \$27,216.86; of this, \$9,910.40 was disbursed, leaving a balance of \$17,306.46, of which \$7,306.46 is available for relief work during the coming year. The total assets of the society are placed at \$464,166.50; its liabilities amount to \$384,674.23. The number of members is 1,108, of whom 733 are original pioneers.



**River and Harbor Improvements.**—The annual report to July, 1895, on river and harbor improvements in California says of the work at San Diego harbor that the trestle was advanced under the new contract during the fiscal year 882 feet. The jetty wall was further completed to high water for a length of 224 feet, and the foundation course was laid for 248 feet additional. No effects of the jetty extension have been noticed upon the bar depth; some local scour took place beyond the end of the jetty, and at points where the depth was 5 or 6 feet there is now 18 feet 8 inches of water.

On San Joaquin river \$20,985 has been expended during the year, making the total of \$342,246 for the improvement. A low-water channel of 9 feet has been obtained to Stockton, and snagging operations above that point have benefited the river.

On Sacramento and Feather rivers the amount expended during the year was \$33,426, making the total \$611,741. The wing dam at Sacramento has removed the shoal from the bridge.

In Humboldt Bay the work of improvement is under a continuance contract system, and the landlocked harbor is being improved by means of jetties. During the year \$300,244 was expended, making a total of \$876,727, and two channels 25 feet deep have been obtained.

**Midwinter Fair.**—The report of the financial operations of the Midwinter Fair of 1894 was made in January, 1895. The total receipts were \$1,260,112.19, and the disbursements \$1,193,260.70, leaving a balance of \$66,851.49, which the table of assets shows is made up of \$61,952.45 cash, the remainder being material and property remaining unsold. There are still outstanding liabilities amounting to \$39,046.99.

On March 23 the art building that had been erected for the fair was transferred to the Commissioners of Golden Gate Park, and was formally dedicated and opened as a museum. At the time of opening it contained between 5,000 and 6,000 exhibits.

**CANADA, DOMINION OF. Government.**—After Sir John Thompson's death, at the close of 1894, the Governor General called on Mackenzie Bowell to form a Government, which he did as follows on Dec. 21, and soon afterward was knighted:

Premier and President of the Privy Council, Sir M. Bowell; Postmaster-General, Sir A. P. Caron; Minister of Marine and Fisheries, Hon. John Costigan; Minister of Finance, Hon. G. E. Foster; Minister of Justice, Sir C. H. Tupper; Minister of Railways and Canals, Hon. J. G. Haggart; Minister of Public Works, Hon. J. A. Ouimet; Minister of Militia and Defense, Hon. J. C. Patterson; Minister of the Interior, Hon. T. M. Daly; Minister of Agriculture, Hon. A. R. Angers; Minister of Trade and Commerce, Hon. W. B. Ives; Secretary of State, Hon. A. R. Dickey; Solicitor-General, Hon. J. J. Curran; Comptroller of Customs, Hon. N. C. Wallace; Comptroller of Inland Revenue, Hon. J. F. Wood. In accordance with the workings of the Canadian system the new Government, like the preceding ones of Macdonald, Abbott, and Thompson, was Conservative in politics, that party still having a majority in Parliament.

The fifth session of the seventh Parliament

opened at Ottawa on March 18, 1895. The most important matters mentioned in the Governor General's "speech from the throne" were as follow:

Satisfactory assurances have been received from her Majesty's Government respecting the interpretation of certain clauses in the treaty of commerce with France. Ratifications will be exchanged as soon as necessary legislation has been passed. The recent action of the imperial Parliament, enabling the various Australasian governments to enter into preferential trade relations with the other self-governing colonies of the empire, affords gratifying proofs that the suggestions of the Colonial Conference are being favorably entertained by her Majesty's Government.

The depression in trade which has prevailed throughout the world for the past few years has made itself felt in Canada, but, fortunately, to a less degree than in most other countries. Although this has not resulted in any considerable decrease in the volume of our foreign trade, yet, owing to low prices and recent reductions in and removal of taxation, it has been followed by a serious decrease in revenue derived from customs and excise.

The Government of Newfoundland having intimated its desire to renew negotiations looking to the admission of that colony into the Dominion of Canada, a subcommittee of my advisers have recently met in conference a delegation from the island Government and discussed with them the terms of union.

When the address in reply had been moved and seconded and discussed in the usual formal manner—congratulatory on the one side, depreciatory on the other—it was carried by the normal Conservative majority. Mr. Foster acted as leader of the House, and Mr. Bowell as leader of the Senate.

**Finance.**—Mr. Foster, Minister of Finance, delivered his budget speech on May 3, 1895. The following is a summary:

The revenue, as estimated for 1893-'94, was \$36,500,000; the actual revenue was \$36,374,693. The decrease was spread over the whole list of duties on imported articles. The total imports, including coin and bullion, were less than in the preceding year by \$8,611,047. The dutiable imports were less by \$7,094,389. The causes of the shrinkage might be classed under three heads—reduced consumption, lessened value, and reduced taxation. The expenditures during the year amounted to \$37,585,025, an excess over 1892-'93 of \$770,972. Of this increase, \$405,707 was due to interest on debt and \$270,889 to provincial subsidies. The total expenditure exceeded the revenue by \$1,210,000. He calculated that by the removal of the duty on sugar, in 1891, \$4,821,000 had been saved to the people. Had that rate of taxation been maintained, there would have been a surplus of \$3,000,000 instead of a deficit.

Coming to the year 1894-'95, he pointed out that the revenue, actual and estimated, was \$33,800,000, a decrease of \$2,574,000 from the preceding year, while the expenditure would be \$38,000,000, leaving a deficit of \$4,500,000. The increase of \$400,000 in the expenditure was explained by an increase of \$179,203 in the interest on the debt; the revision of the voters' lists, etc., \$155,566; an expenditure of \$143,356 in aiding the Imperial Government to fortify Esquimaux; increased provincial subsidies of \$178,957. The sugar duties were again referred to, and the fact was stated that at the old rate \$4,900,000 would have accrued, or more than enough to cover this deficit. The total increase in the national debt from 1890 to 1895 had been \$15,952,987, against a reduction in duties during that period upon glass, anthracite coal, and sugar amounting to \$23,660,902.

There had been increase in exports during the year to Great Britain of \$4,500,000, and to France and Ger-

many. The decrease had been to the United States, Portugal, and Holland. In imports there had been increase from Germany, Spain, Italy, Newfoundland, the West Indies, South America, China, Japan, and Switzerland. With regard to the United States the net decrease in imports and exports was \$13,000,000. In 1889, when the wave of depression began to float over the world, the exports from Canada amounted to \$89,000,000, while last year they reached \$117,500,000. In the same period the imports had risen from \$109,500,000 to \$113,000,000. The duties on the former total aggregated \$23,726,784, and in the latter year, on the larger amount, \$19,119,000.

His proposals for equalization of revenue and expenditure included the reimposition of a third of the old duty on sugar— $\frac{1}{3}$  a cent a pound on the raw product—and a proportionate protective duty on the various grades of refined sugar. This would probably give \$1,200,000. An additional tax was to be imposed upon distilled spirits, giving perhaps \$600,000 more. As his estimate of revenue for 1895-'96 was \$35,000,000 and of expenditure \$36,700,000, this would leave a clean slate. To meet the existing deficit of \$4,500,000 he had made a vigorous reduction in departmental expenses, and had decided to ask for no new railway subsidies.

**Political.**—The central subject of discussion in Parliament and the country during the session was the Manitoba school question. The decision of the Judicial Committee of the Imperial Privy Council left an opening for Dominion interference with the act of 1890 by which the Manitoba Legislature had abolished separate schools. On the plea that the minority in that province had been unjustly treated, the French-Canadian members of Parliament, and their leaders in the Dominion Government, insisted upon intervention, while a strong counter-agitation was aroused in Ontario and elsewhere. A crisis was precipitated in the Cabinet, and three ministers resigned. Finally harmony was restored by the issue of the remedial order to Manitoba, by which the Federal authorities practically ordered the province to adjust its educational system so as to restore the alleged rights of the Roman Catholic minority. The unusual promise of a sixth session was made so as to legislate in this direction, should Manitoba refuse to obey.

On June 5 a motion was introduced by Mr. Davin in favor of woman suffrage. Mr. Laurier, leader of the Liberal Opposition, moved an amendment referring the question to the provinces, but this was defeated by 54 majority. On the original motion 47 votes were given in favor and 105 against. All the Liberal leaders voted against it, while 21 of their supporters voted for it, as did 26 Conservatives. This was the first occasion on which the opinion of the Canadian Parliament had been taken on the question.

The sum of \$25,000 was voted to the widow and family of the late Premier, the leading members of both parties supporting the proposal. The national fund for the same purpose already amounted to \$37,000. An unpleasant but necessary discussion arose over the extravagant expenses of the state funeral that had been given to the late Premier, which were found to have reached \$25,000, and a considerable amount was ultimately pruned from the items as submitted.

The treaty with France finally came into operation on Oct. 14, 1895. Under this ar-

range ment 21 articles will be admitted into France at the minimum duty, and French wines are admitted into Canada at low rates.

Four by-elections in April resulted in a gain of 3 seats for the Liberals. A conference was held at Ottawa during the session between delegates from the Canadian and Newfoundland governments, with a view to the island's admission into confederation. But the financial demands of Newfoundland were greater than the Dominion authorities cared to accede to, and the negotiations fell through. Parliament was prorogued on July 22.

**Legislation.**—The chief legislation of the session was in modifying the civil-service regulations, improving the administration of criminal law, advancing commerce, and extending telegraph and railway communications. The principal bills passed were as follow:

- To amend the insurance act.
- To amend the act to encourage the development of the sea fisheries and the building of fishing vessels.
- To incorporate the Ontario Accident Insurance Company.
- To amend the act to readjust the representation in the House of Commons.
- To amend the Indian act.
- To amend the Dominion lands act.
- To amend the civil-service act.
- Respecting commercial treaties affecting Canada.
- To amend the copyright act.
- To incorporate the James Bay Railway Company.
- To incorporate the Lindsay, Haliburton and Mat-tawa Railway Company.
- To incorporate the Dominion Atlantic Railway Company.
- To revise and amend the act respecting the Lake Manitoba Railway and Canal Company.
- To incorporate the Trans-Canadian Railway Company.
- To encourage silver-lead smelting.
- To amend the customs tariff, 1894.
- Respecting the bounty on beet-root sugar.

**Railways.**—The number of miles of completed railway at the end of the fiscal year 1894 was 15,768, an increase of 448 miles. Of these, all but 141 miles were in operation, and all but 400 miles were laid with steel rails. The paid-up capital amounted to \$887,975,020, an increase of \$15,818,545, the gross earnings to \$49,552,528, and the working expenses to \$35,218,433. The net earnings for the year were therefore \$14,334,095, a net decrease of \$1,092,269. Although the gross earnings and expenses were less than in 1893, the passenger traffic showed an improvement, the number carried being 14,462,498, or an increase of 844,471. The freight traffic fell off by 1,282,483 tons, the total quantity carried being 20,721,116 tons. Twelve passengers were accidentally killed during the year. The Intercolonial, the chief Government railway, again showed a surplus. Its earnings for the year amounted to \$2,987,510, and its working expenses were \$2,981,671. The total Government expenditure on this road has been \$54,680,904.

The Canadian Pacific Railway at the close of the fiscal year had under traffic in Canada 6,094 miles, against 5,782 miles in 1893, and its gross earnings were \$19,357,098, against \$20,795,304 in the previous year. Its working expenses were \$12,447,808 leaving as net earnings \$6,909,290. These figures do not apply to its



American branch lines, such as those of Duluth or Minneapolis. Toward the close of 1895 important changes were made in the management of the Grand Trunk Railway, Sir Charles Rivers Wilson becoming president in succession to Sir Henry Tyler. The working Canadian mileage of this road is 3,158 miles.

**Canals.**—The St. Lawrence and other canals have cost the country, before and since confederation, in 1867, a total for construction, repairs, and maintenance of \$74,921,250. Of the original expenditure for construction, the Imperial Government contributed \$4,173,921. The traffic through this system, mainly connecting the Great Lakes with the sea was, in 1893, as follows:

POWER AND CAPACITY.	Canadian vessels.	U. S. vessels.
Steam.....	9,322	1,432
Sail.....	11,535	3,153
Tonnage.....	3,434,054	1,256,295

The total number of passengers carried was 134,189; the freight was 3,546,989 tons, and the tolls received were \$329,014. During the year there was a decrease of 320 in the number of Canadian vessels, and an increase of 657 in the number of American vessels. The total receipts for 1894 were \$385,539, and the expenditure on maintenance, repairs, etc., was \$663,539. The Welland Canal contributed more than half of this revenue. The completion of the Sault St. Marie Canal, connecting Lakes Huron and Superior, at an expenditure of \$2,791,873, gave the final link to the Canadian system.

**Trade and Commerce.**—The imports and exports for a four-year period were as follow:

YEARS.	Imports.	Exports.
1891.....	\$119,967,638	\$98,417,296
1892.....	127,406,068	113,963,375
1893.....	129,074,268	118,564,352
1894.....	123,474,940	117,524,949

During the last-mentioned year the imports from Great Britain were \$38,747,249, and from the United States \$62,907,431. The exports to Great Britain were \$68,538,856, and to the United States \$35,809,940. After varied fluctuations and numerous tariff changes, the total trade with these two countries stands almost exactly where it did in 1873, although the total trade of the Dominion has increased by \$13,000,000. The chief fluctuations in the Canadian export trade during the fiscal year 1894 included an increase to Great Britain of \$4,458,363, a decrease to the United States of \$8,113,070, an increase to Germany of \$1,295,591, to France of \$280,939, to the British West Indies of \$197,262, to China of \$204,457, to Newfoundland of \$223,959, and to Denmark of \$111,377. The total net decrease was \$1,039,403.

**Debt and Taxation.**—The receipts from customs in 1894 were \$19,198,000, a decrease of \$5,770,840 since 1890, but an increase from the total of \$12,782,824 in 1878, when Mr. Mackenzie and the Liberals left office. The duties collected on imports from Great Britain were \$8,245,845; from the United States, \$6,960,950. The receipts from excise were \$8,381,089, compared with \$4,858,671 in 1878. The receipts from

other sources were \$8,795,890. The gross debt of the Dominion on June 30, 1894, was \$308,348,024, and the assets \$62,164,994. The net debt was \$246,183,029, an increase of \$18,868,254 since 1887, compared with an increase of \$114,989,810 between 1874 and 1887, when the Canadian Pacific Railway was being built and other public works constructed.

**Banking and Business.**—The deposits in the post office and other Government savings banks during the year were \$55,955,590, an increase of \$1,282,106. Those in the loan companies during 1893 were \$18,531,573, a decrease of \$860,592. The total loans on real estate in these latter institutions were \$110,916,560, and the overdue mortgages amounted to \$2,746,648. The deposits in the chartered banks on July 31, 1894, were \$176,583,465, compared with an average in 1888-'92 of \$134,771,032. The notes in circulation during 1894 amounted to \$31,166,003; the capital paid up, \$62,063,371; the total deposits (including Federal and provincial governments), \$181,743,890; the discounts, \$204,124,939; the total liabilities, \$221,066,724; the total assets, \$307,520,020. The failures during the year in business were 1,854, with liabilities estimated at \$17,607,258.

**Minerals.**—The production of copper during 1894 was valued at \$805,760; gold, \$954,451; iron ore, \$226,611; lead, \$188,262; nickel, \$2,061,120; silver, \$409,239; asbestos, \$420,825; coal, \$8,447,329; coke, \$147,861; gypsum, \$202,031; natural gas, \$313,754; petroleum, \$835,322; pyrites, \$121,581; salt, \$170,687; bricks, \$1,800,000; building stone, \$1,200,000; cement, \$140,659; granite, \$109,936. With sundry estimated quantities, the total value was \$20,900,000, compared with \$13,500,000 in 1888.

**Fisheries and Marine.**—There were 70,719 men engaged in the Canadian fisheries during 1894; \$158,794 was paid by the Government in bounties; the total production or catch was \$20,719,573; the export amounted to \$11,102,692; and employment was given to 35,280 boats. The number of vessels built and registered was 326, with a tonnage of 21,243; 43 were sold to other countries, at a value of \$243,429. The seagoing vessels entered and cleared at Canadian ports were as follow:

NATIONALITY.	Number.	Tons.	Weight of freight.
British.....	3,381	4,146,645	1,758,192
Canadian.....	13,780	2,334,081	783,816
Foreign.....	11,179	4,799,810	1,204,698

The tonnage of the vessels employed in the inland waters between Canada and the United States (Canadian ports) was 9,072,543 tons, and that of the vessels employed in the coasting trade 26,560,968 tons.

**Postal Service.**—The number of post offices in 1894 was 8,664; the registered letters, 3,237,200; the free letters, 4,925,500; the total letters posted, 107,145,000; the post cards, 23,695,000; the newspapers, periodicals, books, etc., 93,617,861. One hundred and eighty-seven new offices were opened, and the revenue was \$3,734,418 with an expenditure of \$4,442,339.

**Insurance.**—During 1894 there were 35 fire-insurance companies doing business—6 Cana-

dian, 21 British, and 8 American. The premiums received were \$6,711,369; the losses paid, \$4,589,363, a decrease in the latter amount of \$463,000. The business, according to nationality, is shown in the following table of totals—1869-'94:

COMPANIES.	Premiums received.	Losses paid.
Canadian.....	\$29,386,748	\$21,080,844
British.....	72,022,185	49,552,399
United States .....	10,615,145	7,169,196

During 1894 12 Canadian life-insurance companies transacted a business of \$28,670,364; 8 British companies, \$3,214,216; 10 American companies, \$17,640,677. The amount in force is respectively \$177,511,846, \$33,911,885, \$96,737,705—a total of \$308,161,436. The assets of the Canadian companies were \$32,444,873; their liabilities, \$27,908,247; their income, \$7,295,609; their expenditure, \$4,225,107.

**Social Statistics.**—According to the lists prepared in accordance with the Electoral Franchise act, there were in 1895 1,353,735 voters in Canada for Dominion purposes, compared with 1,132,201 in 1891, and 993,914 in 1887. There were 18 asylums for the insane, all supported by the Government, and maintaining at the end of 1893 4,913 males and 4,597 females. The convictions for drunkenness in 1890 were 14,045; in 1891, 12,997; in 1892, 11,415; in 1893, 11,651; in 1894, 11,558—a steady reduction. The number of divorces granted by Parliament in 1894 were 6, and in the 3 provinces which retained that privilege on entering the confederation 3. Altogether 211 divorces have been given in the Dominion since 1868, of which 54 were from Parliament and 157 by the provincial courts referred to. The newspapers at the end of 1893 numbered 919—66 in French, 12 in German, and 1 in Gaelic, 1 in Scandinavian, and 1 in Icelandic. The number of convicts in the penitentiaries was 439, of whom only 11 were women.

**Liquor Traffic.**—A royal commission was appointed on March 14, 1892, with Sir Joseph Hickson as chairman, to investigate and report upon this traffic and the various measures suggested for its control or abolition. It held 130 public sittings, and heard 1,139 witnesses, whose testimony filled 4,528 pages. A report was presented on March 29, 1895, after the commission had visited all the Provinces and many of the neighboring States. The report, with one dissentient, declared:

1. That the buying and selling of intoxicants can hardly be said of itself to produce injurious effects. Such evils as do arise flow from misuse of the article bought and sold.

2. That legislation aiming at restriction or lessening the trade in, or consumption of, liquor, if it is to be at all effective, must have the active and continued support of a very large majority of the community in which it is to be enforced.

3. Nowhere, so far as the commission has been able to investigate, have prohibitory laws had the effect of stopping the use of alcoholic liquors as a beverage. The commissioners do not believe the social condition of the people of the Dominion would be improved by the enactment of a general prohibitory law.

4. It would adversely affect the agricultural

interests of the country, and would cause a very grave disturbance of its industrial, commercial, and financial affairs. The system of license and regulation is, upon the whole, best.

The commission also makes certain recommendations, among which are: A Dominion register of all manufacturers and sellers of liquor and a Dominion fee and certificate; the establishment of a place for restraining and treating drunkards; the abolition of saloon licenses; the detection of adulteration; the imposition of high license with thorough enforcement; making the illegal purchaser equally guilty with the illegal vendor; the training of the female portion of the population in a knowledge of domestic economy and household duties.

**Copyright.**—A copyright in Canada may be registered by any person domiciled in the country or in any part of the British possessions, or "any citizen of any country that has an international copyright treaty with the United Kingdom." By the interpretation of the Department of Justice, this latter clause is held to exclude the United States. Reprints of British copyright works not copyrighted in Canada are admitted by the terms of the Canadian and imperial laws, and large numbers of such reprints are in consequence imported from the United States. Partly on this account, an act was passed in 1889 by Canada containing a provision that if a British author does not register his work in Canada within one month of publication in the country of origin, any printer in the Dominion may obtain a license to reproduce it on payment of 10 per cent. royalty to the author. The act has not been assented to by the imperial authorities, because of this and other provisions.

The long dispute over the Canadian Copyright act of 1889 has been settled, to all appearance at least. Mr. Hall Caine spent some time in Canada, and after many negotiations with local publishers and the Canadian ministers, in behalf of the English authors who had objected successfully to the imperial sanction of that act, effected a compromise. What that arrangement is can not be better described than in his own words:

There will be an amended act, to be called the Copyright act of 1896. At the conference with the Ministers of Justice and Agriculture, which my colleague, Mr. Daldy, and myself, together with the Canadian Copyright Association and Canadian publishers, were permitted to hold in Ottawa, a draft measure, which forms an agreement between myself as the delegate of English authors and the interested parties in Canada, was submitted and recommended to the ministers; and we have every reason to hope that it will be regarded as the probable general basis for forthcoming legislation. By this agreement, the time within which a copyright holder can publish in Canada and so secure an absolute copyright is extended from thirty to sixty days, with a possible extension of thirty days more at the discretion of the authorities. Also, by this agreement the license to be granted for the production of a book that has not fulfilled the conditions of Canadian copyright law is limited to one license, and this single license is only to be issued with the copyright holder's knowledge or sanction. Further, the copyright holder, who has an independent chance of securing copyright for himself within a period of sixty days, is to be allowed a second chance of securing it after it has been challenged, and before it can be disposed of by license. This is the ground of the draft bill, which the Canadian Copyright Association has joined with me in recommending.



**Events.**—Monuments were unveiled at Lundy's Lane and Chateaugay to the soldiers or volunteers who fell in those battles of the War of 1812. Statues of Sir John A. Macdonald, the chief founder of the confederation, were unveiled at Toronto, Montreal, and Ottawa. Major-Gen. Gascoigne was appointed to the command of the Canadian militia.

#### CAPE COLONY AND SOUTH AFRICA.

The British colony of the Cape of Good Hope and the neighboring colony of Natal, together with the independent Orange River Free State and South African Republic and the Portuguese colony of Lourenço Marques, occupy the temperate part of South Africa south of the Limpopo and Orange rivers. Between this region and the Zambesi are the British protectorates of Bechuanaland and British South Africa, occupying the elevated central region, generally fertile, salubrious, and rich in minerals. The southern half of Portuguese East Africa takes up the coast region in the east, and in the west the vast undeveloped German protectorates of Namaland and Damaraland extend from the Orange river to the southern confines of the Portuguese colony of Angola.

**Cape Colony.**—The Legislative Council, of 22 members, elected for seven years, is presided over by the Chief Justice. The House of Assembly has 76 members, elected from urban and rural districts for five years. Any male citizen has a vote who occupies house property worth £75 or receives a salary of £50, and is able to register in writing his name, occupation, and address. There were 91,877 voters in 1894.

The Governor in the beginning of 1895 was Sir Henry Brongham Loch, appointed in 1889. His term expired in 1895, and Sir Hercules Robinson, who held the same office from 1880 to 1889, was appointed his successor. The new Governor arrived on May 30. Sir Hercules Robinson, as a representative of the idea of imperialism as a means of colonial expansion, was expected to work more harmoniously with Mr. Rhodes than the retiring Governor. The Governor is also Imperial High Commissioner of South Africa. The ministry in 1895 was composed as follows: Prime Minister, Cecil Rhodes; Colonial Secretary, P. H. Faure; Treasurer, Sir J. Gordon Sprigg; Attorney-General, W. P. Schreiner; Commissioner of Public Works, John Laing; Secretary for Agriculture, John Frost.

**Area and Population.**—The colony contains 221,311 square miles, and in 1891 had a population of 1,527,224, of whom 376,987 are of European extraction and 1,150,237 are natives or colored. Cape Town, the capital, with its suburbs had 83,718 inhabitants. There were 6,889 marriages in 1893. The number of adult persons who landed in 1893 was 15,617, and the number of departures was 7,922. Public schools are supported by Government grants, but education is not compulsory, and 28 per cent. of the European population can neither read nor write.

**Finances.**—The revenue for the year ending June 30, 1893, was £6,446,149, of which £1,836,098 were produced by taxation. £2,731,873 came from services, £350,588 from the colonial estate, £52,655 from fines, stores, etc., and £1,474,935 from loans. The total expenditure was £5,734,503, of which £1,213,204 were for the public

debt, £1,474,163 for railroads, £149,287 for defense, £266,748 for police and jails, £132,347 for the civil establishment, and £1,066,627 were expended under loan acts.

The revenue for 1894-'95 was £5,360,000, and the expenditure £5,162,000. Notwithstanding the fall in prices and the shrinkage in the produce of the colony, including a falling off in the export of diamonds of £800,000, the net profit on the Government railroads, after the payment of interest, amounted to £265,000. The rate of net earnings was 5.32 per cent., the highest on record. The Government brought in proposals in 1895 for the construction of additional railroads, which will cost the colony a further £36,000 a year in interest.

The public debt on Jan. 1, 1894, amounted to £26,798,878, nearly all of which was laid out in railroads and other remunerative investments.

**Commerce and Production.**—On Jan. 1, 1894, there were 41,041,025 acres remaining of the public lands, 100,609,606 acres having been alienated. During 1893 there were 2,602,400 acres alienated in 1,582 lots. In the year 1892-'93 the crop of wheat was 3,890,898 bushels; of tobacco, 4,400,630 pounds; of wine, 6,156,943 gallons. Of brandy, 1,550,360 gallons were made, and 2,095,515 pounds of raisins were obtained. The product of wool was 52,693,091 pounds; of mohair, 6,585,292 pounds; of ostrich feathers, 225,723 pounds. There were 16,793,850 sheep in the colony, and 5,617,411 Angora and other goats. The number of ostriches was 232,243. The merchandise imports in 1893 were £10,760,556 in value, and the exports of colonial produce £12,765,770. The value of the diamonds exported was £3,821,443; wool, £1,855,076; Angora goat hair, £527,619; hides and skins, £497,109; ostrich feathers, £461,552; copper ore, £202,316. The imports of textiles and apparel were £3,752,910; of articles of food and drink, £2,139,227.

**Navigation.**—During 1893 there were 770 vessels in the foreign trade, of 1,602,243 tons, entered, and 741, of 1,540,002 tons, cleared. Nine tenths of the tonnage was British. The shipping consisted of 19 steamers, of 2,484 tons, and 9 sailing vessels, of 1,118 tons.

**Communications.**—All the railroads, except 188 miles, belong to the Government. There were in 1894 a total length of 2,253 miles, all constructed within thirty years. The capital cost was £19,832,619, about equal to £42,500 a mile. The receipts were £2,559,542 in 1893, and expenses £1,510,946.

The telegraphs, which have been constructed by the Government, had a length of 5,602 miles on Jan. 1, 1894. The number of messages transmitted in 1893 was 1,538,725.

The mails in 1893 carried 15,976,336 letters, 7,481,280 newspapers, 474,000 postal cards, 1,502,640 books and samples, and 357,448 parcels.

**Legislation.**—The House of Assembly gave its attention chiefly to protective tariff measures and to plans for new railroads in the session of 1895. A new duty not provided for in the customs convention between the colonies and states could not be imposed, but duties were proposed which should be the subject of negotiations in the conference that was held after the conclusion of the legislative session. For the protection

of the farmers, who were alarmed at the arrivals of frozen meat from Australia, it was decided to classify this article as preserved meat, thus raising the duty from 12 per cent. *ad valorem* to 2*d.* a pound. The working people held meetings to protest against this change, which went into effect on Aug. 1, and also against the existing duties on grain and flour, which the Government proposed to raise still higher. They declared that the tariff made bread and meat dearer than in any other British colony, and desired a tax placed on brandy instead. The policy of admitting free the raw materials of colonial manufacturers was approved by the Assembly.

Among the bills that passed was one to prevent the importation of pirated books and music. A leprosy commission reported that the disease was on the increase, and recommended enforced segregation.

The principal railway projects are a line from Mossel Bay to the Graaf Reynet road, and one from Somerset east to King Williamstown, both to be built with a Government subsidy of £2,000 a mile, the Government having the right to take the railroads after twelve years, and also a line from Graaf Reynet to the Middelburg railroad, which will be built by the Government.

Pondoland has been definitely annexed to Cape Colony. Sigeau, one of the chiefs, who resisted the registration of huts for the purpose of the hut tax, after first giving his consent to the annexation, gave himself up in June and was detained at Kokstad for trial. White men had obtained concessions for mining and railroads in Pondoland. These were disallowed by the Supreme Court, on the ground that there was no court of law in Pondoland and therefore they had no enforceable right of action.

**Annexation of British Bechuanaland.**—The Crown Colony of British Bechuanaland is the territory lying in the angle between the frontiers of Cape Colony and the Transvaal and extending as far north as the Molopo river. The area is 71,000 square miles, with a population in 1891 of 60,376, of whom 5,254 were whites. The natives are a sedentary agricultural people, who grow corn and tobacco and raise cattle. Gold, lead, silver, and iron are found. The colony is governed by an Administrator, residing in Vryburg, a town established by Transvaal Boers, who organized a republic here, which was afterward seized and annexed to the British Empire at the time when the rest of Bechuanaland, extending over the Kalihari Desert to 20° of east longitude, the conventional boundary of German Southwest Africa, and northward to 22° of south latitude, was declared a British protectorate, Sept. 30, 1885. This was the result of Sir Charles Warren's expedition, the object being to place the northern trade route under British protection and prevent Germany from extending her possessions to the Transvaal and cutting off Cape Colony from the *Hinterland* that was afterward occupied by the British South Africa Company. The area of the protectorate is about 100,000 square miles. In 1890 the jurisdiction of the Governor of British Bechuanaland was extended over the protectorate and over British South Africa, excluding Matabeleland. The Governor has supreme jurisdiction in all civil and criminal cases, as the finances of the

colony do not admit of an independent administration of the law. The administrative system of the Crown colony is a makeshift adopted pending its ultimate incorporation in Cape Colony. No efforts have been made to develop the natural resources of the country. The cost of the administration to the British taxpayer has been kept down to £8,000 or £10,000 a year, which is all that the colony has had out of the annual grant in aid voted by the imperial Parliament for Bechuanaland, amounting to £100,000. No roads or other public works have been constructed, and education has been quite neglected. The local revenue of the Crown colony, derived chiefly from a native hut tax of 1*s.*, averages £50,000 a year.

When British Bechuanaland was first annexed it was proposed to annex it to the Cape, and negotiations to that end were carried on by Sir Hercules Robinson, then Governor of Cape Colony, who as High Commissioner rejected the conditions proposed by the Cape ministry. When afterward, in 1888, the Cape Government was ready and anxious to take over the territory, the British imperialist element opposed it in the belief that the colonial Government was so much under the domination of the Dutch that it would neglect the duty of preventing filibustering by Transvaal Boers and the free sale of Cape brandy to the native population. The Imperial Government therefore decided to continue the provisional administration till the time arrived when popular sentiment favored the transfer. In 1895 all parties at the Cape were desirous of the annexation, and accordingly a bill was brought in by the Government, which passed the House of Assembly on July 31. In this bill were embodied the conditions imposed by the British Government relative to the transfer of land titles, the sale of liquor, and jurisdiction over the natives, to which the opposition strongly objected. In the Crown colony itself the native chiefs, Montsioa, Molala, and Mankaroane, as well as the majority of the white people of Vryburg, protested against annexation. The opposition in the Cape Parliament suspected that a part of the scheme was to hand over the rest of Bechuanaland to the South Africa Company. Mr. Sauer moved a resolution to the effect that the status of the protectorate be not altered without the consent of the House. It transpired that the Imperial Government had agreed to incorporate in the territory of the South Africa Company all the country north of Mafeking, as was provided in the charter.

**Natal.**—The new charter granted by the British Government in 1893 vests the legislative authority in a Legislative Council and a Legislative Assembly. The former has 11 members, nominated for ten years by the Governor with the advice of the ministers. The Assembly has 37 members, elected for four years by the male citizens who are qualified by owning real estate worth £50, or paying £10 a year rent, or having an income of £96. The assent of the Governor is required for every legislative act, and this assent after it has been given may be revoked within two years. He has also the right to propose legislation by message, and no money bill unless thus presented by him can be passed in the same session in which it is proposed.



The Governor is Sir William Francis Hely-Hutchinson, appointed in 1893. The ministry constituted Oct. 10, 1893, is composed as follows: Premier, Colonial Secretary, and Minister of Education, Sir John Robinson; Attorney-General, Harry Escombe; Colonial Treasurer, G. M. Sutton; Minister of Native Affairs, F. R. Moor; Minister of Lands and Works, T. K. Murray.

**Finances.**—The revenue for the year ending June 30, 1893, was £1,069,678, and the expenditure £1,099,858. The chief sources of revenue were: Railroads, £479,410; customs, £216,040; excise, £20,877; sales of land, £43,951; post office, £38,841; telegraphs, £14,129; stamps and business licenses, £22,349; hut tax, £79,489. The chief items of expenditure were: Railroads, £343,409; public works, £65,607; defense, £66,454. The expenditure from loans was £195,086. The public debt amounted to £7,170,354 on Dec. 31, 1893.

For 1893-'94, the first year under the system of responsible government, the revenue was £1,011,016 and expenditure £1,082,373. In addition to ordinary expenditure £66,444 was spent out of loan funds. There was a balance of assets over current liabilities of £618,154 on June 30, 1894. In 1895 5-per-cent. stock was converted, reducing somewhat the debt and the annual interest charge. A practical balance is kept between current income and current expenditure. The sum of £388,913 will be spent on public works in 1896, when work will begin on a railroad paralleling the coast in the north.

**Commerce and Production.**—The principal commercial product is sugar, of which 15,803 tons were produced in 1893. The cultivation of tea has been introduced, and 576,420 pounds were gathered in 1893. The natives grow corn and other crops. They have 360,670 and Europeans have 159,074 acres under cultivation. Both raise sheep, goats, and cattle. Of the total area of the colony 8,250,000 acres have been disposed of by grants to Europeans, 750,000 acres have been sold on time payments, 700,000 acres have been leased for grazing, 2,250,000 acres have been reserved for the natives, and 1,000,000 acres remain in the possession of the Government.

The total value of the imports in 1893 was £2,236,738; of exports, £1,242,169. Of the exports, £207,307 consisted of gold dust and bars. The wool exports were £517,102 in value, mostly the produce of the Boer republics. The exports of products of the colony amounted to £829,761, the principal ones besides sugar being Angora hair, hides and skins, bark, and coal, of which 129,255 tons were mined in 1893.

**Communications.**—The Government has built 392 miles of railroad at a cost of £6,060,122. A line has been constructed from the seaport of Durban to Charlestown, on the Transvaal frontier, and extended thence to Johannesburg and Pretoria. A branch runs to Harri-smith, in the Orange Free State.

**Annexation of Lebombo and Tongaland.** Between Swaziland and the Lebombo range forming the boundary of Tongaland is a strip of country about 50 miles long and 15 wide. The southern and larger portion of this is the dominion of the chief Sainbaan, adjoining Zululand.

Politically independent, but closely allied with him, is the chieftainess Mdhhlaleni, popularly called the Widow, whose territory covers only 20 square miles. North of her country, extending up to the Portuguese frontier, is the territory ruled by Umbegesa. All these tribes formed part of the Zulu nation and owned allegiance to Chaka and his successors until the Zulu war. In 1880 they offered their allegiance to Great Britain. The Imperial Government declined to assume any responsibility, although it declared then and afterward that this tract lay within the sphere of British influence. By the convention concluded in 1884 with the South African Republic by Sir Hercules Robinson, the Boer Government undertook to adhere to its boundaries, specifically on the west; also to make no treaty with any foreign state or native tribe without the approval of the British Government. Sir Hercules Robinson proposed at that time to place a British commissioner and organize a native police on the eastern border of the Transvaal, but the Imperial Government shrank from the responsibility and expense. Boer graziers trekked into Swaziland and the Lebombo territory, and obtained lands and concessions from the native chiefs. Thus arose the Swazi question, which was finally settled in favor of the South African Republic. In 1887 territorial rights were first acquired by the Transvaal Government in the Lebombo territories, whose chiefs, after being rebuffed by the British authorities, prayed to be taken under the protection of the South African Republic. The Transvaal Government recognized that no political rights were valid without the approval of the British Government, which in 1888 refused to give consent to annexation, and again in 1889, when Sir Hercules Robinson explained that the British Government could not sanction the acquisition of these territories by the Transvaal, for the reason that it would thereby be precluded from exercising an effective control over the future settlement of the Swaziland issue; there was also question as to whether these chiefs were not politically subject to the rulers of Swaziland, Zululand, or perhaps Amatongaland. It was finally conceded that they were independent. The rights acquired by individual Boers were therefore recognized as valid. The legitimate desire of the Transvaal for access to the sea was acknowledged; consequently the convention made by Sir Hercules Robinson in 1890 specifically recognized the right that the Transvaal Government had acquired to construct a railroad through Umbegesa's territory. In the convention made in 1894 this and the other rights in respect to these territories that were conceded in the former instrument were not mentioned. The English have since argued that all these rights were void unless they were reaffirmed in the subsequent convention, also that the former convention expired by time limitation in 1894, and the right to acquire a right of way and build a railroad through Lebombo and Tongaland to the sea lapsed by non-user. The Boers supposed that after the Swazi question was settled in the way for which they had contended, the difficulty in regard to the Lebombo rights was removed. There were no private British interests there, such as had com-

plicated the Swaziland settlement. A burgher named Van Oordt, a representative of one Ferrara, who once influenced Umbegeza and Mdhlaheni to petition for a Boer protectorate, and who had obtained important concessions, began in March, 1895, to exercise the rights that the native rulers had bestowed upon his associate or principal, going so far as to exercise jurisdiction and levy taxes. An English commissioner named Saunders was thereupon sent into the country, and on the strength of his report and the arrangements that he made with the chiefs the Governor of Natal and Zululand proclaimed in May the annexation to Zululand of the territories of Sambaani, Mdhlaheni, and Umbegeza. A protectorate was proclaimed over Amatongaland, or Tongaland, as far as the coast and up to the Portuguese frontier. The Portuguese boundary line divides the kingdom of Tongaland, so that the chief owes allegiance to Portugal in respect to the northern and to Great Britain in respect to the southern half of his territory. The Governor of Zululand was appointed special commissioner for British Amatongaland, except as regards the Portuguese possessions and the South African Republic, such matters coming within the province of the High Commissioner.

The proclamation annexing the Lebombo states caused great excitement and consternation in Pretoria and among the Dutch of South Africa. The Boers of the Transvaal saw their hopes of having a seaboard frontier cut off; more than that, their claim to an independent railroad outlet was made subservient to the desires of the Natal colonists, and in this they foreboded an intention on the part of the British Government to gain control also of the Delagoa Bay route, and to give effect to its preemptive right to acquire the bordering Portuguese possessions, thus inclosing the Dutch republics in a complete ring of British territory and controlling all their communications and commerce with the outside world.

**British South Africa.**—The region north of the South African Republic and Bechuanaland is the sphere of operations of the British South Africa Company, of which Cecil Rhodes is chairman. The area of this country, to which the name Rhodesia has been given, is about 750,000 square miles. Railroads are being constructed from Beira, on the Portuguese coast, and from the terminus of the Cape line at Vryburg into the gold region of Mashonaland and Matabeleland. Of the former railroad, 75 miles were opened in October, 1893. A good part of the continuation toward Fort Salisbury has since been built. The latter had previously been extended from Kimberley to Vryburg by the company, and when this section of 126 miles had been taken over by the Cape Government, the extension of 100 miles to Mafeking, in Bechuanaland, was proceeded with, and was completed on Oct. 3, 1894. Arrangements were made in 1895 for extending it from Mafeking to Buluwayo at a cost of £1,500,000. The Imperial Government contributes £200,000. In the gold districts, which have an area of 5,250 square miles, towns have been built at Salisbury, Victoria, Hartley Hill, and Buluwayo. Buluwayo, the former capital of the Matabele king,

Lobengula, had, in the beginning of 1895, a population of 2,020 Europeans. The members of the pioneer expedition which went to Mashonaland in 1890 and the men who were enlisted in the war against the Matabele in 1893 were rewarded with mining claims or farmsteads. Before September, 1894, the lands surveyed in Mashonaland for farms amounted to 1,722,274 acres, and in Matabeleland 800 claims had been entered for farms of 6,000 acres each. The chartered company had an original capital of £1,000,000, and nearly that amount was paid in by the shareholders in cash. Subsidiary companies, called the United Concessions Company and the Exploring Company, were formed under an agreement that they should receive 50 per cent. of all profits, and in December, 1893, they were amalgamated with the parent company, and £1,000,000 of new stock was issued to their shareholders. There is a debenture debt of £650,000. The company has established a civil administration in the European settlements. It draws its revenue from mining and trading licenses, the sale of business stands in the towns, and the postal and telegraph services. The telegraph, which was extended to Salisbury in 1894, has been connected by the African Transcontinental Telegraph Company with Blantyre, Nyassaland, and ultimately telegraphic communication is to be established by land with Egypt and the European system of telegraphs. The company owns south of the Zambesi 1,551 miles of telegraphs. The company has 100 white officials and 250 white police.

The administrator of the company's territories south of the Zambesi is Dr. Leander S. Jameson. Since the close of the Matabele war the Matabele have accepted the new order, and prove to be a valuable factor in the labor supply both for agricultural and for mining work. There are about 100,000 cattle in the country, and merino sheep have been introduced from the Orange Free State. The farming industry has made considerable progress in both Mashonaland and Matabeleland. Besides gold, beds of coal, salt, and asbestos have been found. Iron is widely distributed. The cost of the Matabele war to the company was £113,488. The company expects to be able to pay its current expenses out of the general revenue in 1895. The ordinary revenue in 1894 was about £50,000 and expenses £70,000. The company expects to have the Bechuanaland protectorate, including Khama's country and a great part of the Kalahari Desert, added to its territories. The company possesses the mineral rights in Khamaland already and land concessions for all the country north of Mafeking. A large proportion of these territories consists of high, healthful table-land, resembling Mashonaland, inhabited by peaceful, industrious races. Explorations have been made which show that the country is fertile, and that where surface water is lacking supplies can be found by digging wells. An agreement has been made with the Imperial Government whereby the company is empowered to extend its administration north of the Zambesi up to the southern end of Lake Tanganyika and the confines of the Congo Free State. The new territory comprises the whole of the British sphere north of the Zambesi except the Nyassaland



protectorate. In Nyassaland also the company, which from 1891 until 1895 paid the administrative expenses, possesses rights to minerals and lands. The Barotse king has petitioned for annexation. In the negotiations with the Imperial Government Mr. Rhodes, in behalf of the British South Africa Company, proposed to bind Rhodesia to impose no protective duties on British goods. The Government would not accept a clause that would permit a differentiation of British from foreign goods, and, since the company was unwilling to undertake permanently to extend to foreign goods the advantages it was prepared to offer to goods of British origin, the clause was omitted from the settlement. The company assumed the direct administration of the territories north of the Zambesi in the summer of 1895. The agreement vesting in the company the government of the territories acquired south of the Zambesi was signed in May, 1894. The government is in the hands of an administrator, appointed by the company, who is assisted by a council of 5 members, also appointed by the company. A high court and a land commission have been established. The latter has powers to provide for the settlement of the natives on the land.

There have been 40,000 gold claims registered, representing 2,000 miles of quartz outcrop in an auriferous area of 27,000 square miles. Only a few mines have been developed, because there are no batteries. J. H. Hammond, consulting mining engineer of the company, reports that the veins are of a class universally noted for their permanency. About £750,000 had been subscribed by capitalists for the development of mining properties before the beginning of 1895. The British South Africa Company exacts no mining license fees, but receives half of the vendor's shares in every mining company.

**Orange Free State.**—The colony founded beyond the Orange river by emigrants from Cape Colony who were unwilling to accept British rule was declared an independent republic in 1854. The legislative power is exercised by the Volksraad, a single Chamber of 58 members elected for four years by the votes of all the burghers, one half being renewed every two years. The President of the republic is elected for five years by direct suffrage. F. W. Reitz succeeded President Brand, deceased, in 1889, and was re-elected on Nov. 22, 1893.

**Area and Population.**—The estimated area is 48,326 square miles. At the census of 1890 the white population was 77,716, consisting of 40,571 males and 37,145 females. The native population was 129,787, of whom 67,791 were males and 61,996 females. Immigration from Germany and the British Isles is increasing. There were 10,761 persons engaged directly in farming, who had in their employ 41,817 indentured natives.

**Finances.**—The revenue for the year that ended Feb. 28, 1894, was £293,790 and the expenditures £323,899. The revenue is derived from import duties, stamps, posts and telegraphs, transfer duties, rents, and a native poll tax. The chief items of expenditure are public works, education, salaries, posts and telegraphs, and police. There is a public debt of £55,000, while the public property is valued at £487,000.

**Commerce and Production.**—There is little land suitable to agriculture, but grain enough is raised on 250,600 acres to feed the population and supply mining communities over the border. The rolling veldt, of which the country consists, is divided into immense grazing farms, of which there are 6,000, covering 24,675,800 acres. The live stock in 1890 embraced 248,878 horses, 276,073 oxen, 619,026 other cattle, 6,619,992 sheep, 858,155 goats, and 1,461 ostriches. The mining of gold and diamonds has heretofore been discouraged, but many fine diamonds are now obtained, and the value of the diamond exports rose in 1894 to £415,262. Wool is the chief article of export, and the trade in hides and skins and in ostrich feathers is large. The total value of the imports in 1891 was £1,620,660.

**Communications.**—The line of railroad running 121 miles from Norvalspont, on the Orange river, to Blomfontein, the capital, and thence 200 miles to Viljoensdrift, on the Vaal river, and into the Transvaal, was built by the Cape Government. Natal built the line connecting the Free State at Harrismith with the seaboard. A branch of 60 miles length is being carried to the rich coal field of Vierfontein.

There are 1,500 miles of telegraphs, connecting Blomfontein with the systems of Cape Colony, Natal, and the Transvaal.

**Legislation.**—A compulsory education law has been enacted. The Volksraad debated the question of a federal union with the Transvaal, and appointed a deputation to consult with the authorities of the South African Republic on the subject. A project for a railroad from Blomfontein to Kimberley and to Harrismith was approved.

**South African Republic.**—Under the new Constitution, adopted in 1890 and amended in September, 1894, there are 2 legislative chambers, elected by different classes of citizens. First-class burghers are the male whites who were citizens before 1876, or who took an active part in the war of independence in 1881, and their sons sixteen years old or over. Second-class burghers are naturalized aliens and their sons from the age of sixteen. To become naturalized one must have resided two years in the country, and must register an oath of allegiance and pay a fee of £2. Naturalized persons can be made first-class burghers by special act of the First Chamber after twelve years of residence. The sons born in the country of non-naturalized aliens may obtain naturalization at the age of eighteen by registering their intention when they reach the age of sixteen. Only first-class burghers have votes in the election of the President and the Commandant-General. The members of the First Chamber are elected by the first-class burghers. Candidates for the Second Chamber may belong to either class of citizens, and they are elected by the vote of both classes. There are 24 electoral districts, each of which sends a member to each House.

The President of the state is S. J. R. Krüger, who was elected for his third term of five years on May 12, 1893.

**Finances.**—The revenue for the half year ending June 30, 1894, was £1,096,803, and the expenditure was £652,976. There was at that date an unexpended balance of £909,417 in the

treasury. The revenue obtained from the gold mines for the six months was £501,539. For the entire year of 1894 the revenue was estimated at £1,859,582, and expenditure at £1,595,757. Besides mining dues the sources of revenue are land sales and rents, customs, stamps, transport dues, and a native hut tax. The Government owes £2,500,000, borrowed in Europe, and a war indemnity to England of £192,300, and has guaranteed £6,767,000 of railroad debts.

**Commerce and Production.**—The original Boer population follows agriculture and stock-raising, while the newer population, which constitutes the second class of burghers and is mainly of Anglo-Saxon stock, is engaged in gold mining. After gold, the principal exports are wool, cattle, hides and skins, cereals, ostrich feathers, and ivory. The dutiable imports in 1893 were £5,371,701 in value. The product of gold increased from 833,632 ounces in 1891 to 1,325,394 ounces in 1892, and in 1893 to 1,610,335 ounces, valued at £5,636,122. Good coal is mined in the eastern hills, and iron, silver, and other valuable minerals exist.

**Communications.**—The railroad built by the Cape Government across the Orange Free State has been continued to Pretoria, 78 miles from the Vaal river frontier. The line from Durban is being continued from Charlestown to Pretoria. A line from Delagoa Bay to the Transvaal frontier, a distance of 57 miles, was built by a Portuguese company, and has been continued to Pretoria (295 miles) by the Netherlands Company. The line was officially opened on July 9, 1895. There were in September, 1894, within the boundaries of the Republic 422 miles of completed railroads, 391 miles in process of construction, and 473 miles projected. The telegraph lines had a total length of 1,828 miles in the beginning of 1894.

**Legislation.**—The Englishmen and other Europeans were far from satisfied with the rights conferred upon them by the constitutional amendments of 1894. At the same time that they were demanding fuller political rights they denied the power of the Government, to which they had sworn allegiance, to require military service of them, and appealed as British subjects to the Imperial Government, which made representations to the Transvaal Government, and in February, 1895, succeeded in obtaining from President Krüger a convention abolishing the commandeering of British subjects, subject to the ratification of the Volksraad. The President had already promised, in June, 1894, that British subjects should no more be commandeered for personal military service. The Government proposed to modify the commandeering law, and asked the Volksraad to authorize the enrollment of paid volunteers.

A new grievance was the exclusion under the law of 1891 of foreign coin from circulation. The enforcement of this law affected the supply of labor from Zululand for the Rand mines, as the Zulus wanted to be paid in British coin. The business of some traders was stopped because they had no licenses, and they asked the British Government to interpose and demand that licenses should be issued to them.

**Gold Mining.**—The product of the Witwatersrand gold field in 1894 was 2,024,162 ounces,

valued at £6,980,000. During the eight years that had elapsed since the mines were opened there had been a total output of 6,544,584 ounces, having a gross value of £22,600,000, extracted from 10,110,000 tons of ore. The dividends paid by the producing mines during this period amount to £4,484,541. In 1894 there were £1,406,266 paid in dividends. There are 50 producing mines, the stock of which had a market value in January, 1895, of £33,000,000. A large part of the earnings of the leading mines in 1894 was expended in adding to their property and the construction of new works. Several of the mines were operated at a loss. The losses since the opening of the first mines in 1887 have been estimated at £2,000,000. Since 1892 the proportion of losses to profits has been smaller. Some of the deep-level mines, for which vertical shafts of from 600 to 1,000 feet have been sunk, first came into operation in 1895. The ore at the lower levels was expected to be neither richer nor poorer than the surface outcrop, as the quality is found substantially the same in the older mines as far down as they have been worked, an average of 400 feet. The average yield per ton is 13·3 dwt., ranging from 8 to 27 dwt. The deep-level workings, as far as they have been developed, indicate that the reefs run even in quality and thickness, averaging 6 feet, and that the dip is the same, 20° to 40°. No troublesome inflow of water has appeared in the deepest drifts that have been yet opened. The heat has been found by boring to be 95·3° F. at a depth of 2,494 feet, indicating that the mines can be worked profitably to the depth of 3,000 feet; for the highest grades of ore, 3,500 feet. The hoisting of the ore is not expensive, as coal is abundant. The deep-level mining companies acquire several hundred mining claims of 1½ acre each, as is necessary to warrant the heavy expenditure for sinking shafts. Besides the main reef series there are other reefs in the Transvaal, especially of the kind called black reef, which is rich only in spots, and, on the whole, not likely to prove profitable to work.

African gold mines have been the object of extravagant speculation in London, and latterly in Paris. The French have invested £20,000,000 or £30,000,000 in the gold mines of the Transvaal, chiefly in the largest and most noted ones, and the English investments are perhaps four times as great. The deep-level mines are expected to bring the annual product of the Rand mines up to £10,000,000 in two years and to £12,500,000, when the maximum production is reached three or four years later. The total available supply from this district has been estimated at £325,000,000.

**The Swaziland Settlement.**—The Kingdom of Swaziland, which has an area of 6,150 square miles and a Kaffir population of 60,000, was declared to be independent in the convention concluded in 1884 between the British and the Transvaal governments. Boer graziers and British traders having gained a footing in the country by obtaining concessions from the native rulers during internal disturbances and wars with the Zulus, a convention was made in 1890 between the same parties whereby the government of the white population was committed to a mixed commission. In November, 1893, the British Gov-



ernment, in accordance with previous pledges, agreed that the South African Republic should take over the administration of Swaziland, native rights and customs being safeguarded and burgher rights conferred upon British settlers. This convention provided for the incorporation of Swaziland into the Transvaal, subject to the assent of the Queen-Regent and Council. There was a draft organic proclamation drawn up, which the Queen-Regent and the Swazi chiefs showed no signs of accepting; on the contrary, they sent a deputation to England to protest against the establishment of Boer rule and to offer their allegiance to Great Britain. An alternative arrangement was then embodied in a convention signed by Sir Henry B. Loch as High Commissioner and President Krüger on Dec. 10, 1894. This provided that, without the incorporation of Swaziland into the South African Republic, the Government of the South African Republic shall have and be secured in all rights and powers of protection, legislation, jurisdiction, and administration over Swaziland and its inhabitants, subject to the following conditions: That King Ungwane, or Ubbunu, shall be recognized as paramount chief and exercise the usual powers in so far as they are consistent with civilized customs and law; that his private revenue shall be regularly paid over to him; that the management of the internal affairs of the natives shall be in accordance with their own laws and customs, including their law of inheritance, administered by their own chiefs, and the natives guaranteed in the occupation of land now in their possession and all the grazing and agricultural rights to which they are now entitled; and that no hut tax shall be imposed for three years, and in no case a higher tax than the Swazis in the Transvaal pay. The convention secures to all white residents the right to become naturalized as full burghers of the South African Republic, and forbids the sale of liquor to natives. No railroad is to be constructed by the Transvaal Government beyond the eastern boundary of Swaziland until the conditions shall be arranged in a further convention. The territory known as the Little Free State becomes a part of the South African Republic. The new convention denied the right of formal annexation, but at the same time it abrogated the proviso requiring the consent of the Swazi nation to the occupation of the country by the Transvaal. It was unanimously ratified by the Transvaal Volksraad on Feb. 13. The Swazi Queen having formally refused to sign the organic proclamation, the new treaty went immediately into operation. A proclamation was issued on Feb. 21, 1895, announcing that the Government of the South African Republic would take over the administration of Swaziland from that day. T. Krogh, the Boer representative on the joint committee of administration, was appointed Administrator. Gen. Joubert proceeded with troops to Bremersdorp to carry out the arrangements and install the young king as paramount chief. The party hostile to the Boers began to arm themselves and erect fortifications. A state of lawlessness and terror ensued. The Boers refrained from active measures, awaiting the decision of the king, who wavered between opposite counsels until he was

convinced that the English Government could not be moved. Then he submitted and was crowned as paramount chief at Imbabane on March 11. But later he renewed his protest and appealed anew to the British Government to make good the assurances of independence made to the late King Umbadine by Sir Evelyn Wood. He wanted to have the concessions by which Umbadine had alienated land, minerals, revenue, and administration investigated by a royal commission. When the Government of the Transvaal offered him £1,000 a month he refused to receive any money from the Boers, and threatened war and bloodshed if they attempted to impose their administration upon the Swazis, who would recognize no government except that of the Queen of England.

**Native War.**—A fresh dispute arose in the spring with the Makatese tribes settled upon the reservation in the Zoutpansberg district. In May Paramount-Chief Magato expelled the Government commission that had been sent to settle the difficulty and massed his warriors in the different strongholds. Gen. Joubert called out a commando of several thousand Boers and native allies to attack first the lesser chief Magoeba, who had risen in open rebellion. Magoeba's kraal was captured and afterward he and his followers were surrounded in the forest. The artillery shelled their camp, and then the Swazi allies took it by assault. The rebel chief was among the killed. The commando was dismissed then, leaving the difficulty with Magato to be settled by negotiation.

**Portuguese South Africa.**—The Portuguese possessions south of the Zambesi are organized as the province of Lourenço Marques, which forms with Mozambique the state of East Africa. There are 57 miles of railroad from Delagoa Bay to the Transvaal frontier. Outside of the district of Lourenço Marques the country has been conceded to the Inhambane Company and the Mozambique Company.

The native inhabitants are in a chronic state of revolt against the Portuguese authorities, who endeavor to protect the loyal and industrious tribes against the *impis* of the slave-hunting and predatory Kaffirs. The chiefs Mahazula, Zihlahla, and Gungunhana rebelled against Portuguese authority in August, 1894, and harried the loyal tribes, attacked the Portuguese outposts, and raided the immediate vicinity of the town of Lourenço Marques. The British South Africa Company, which pays tribute to Gungunhana, offered the assistance of its troops to keep that chief in check, but the offer was declined. In the beginning of January, 1895, Mahazula made another raid on the Matollag at Delagoa Bay. The Portuguese, having received re-enforcements from Europe and Angola, began their advance a fortnight later. They tried to surround Mahazula and Zihlahla and marched up the Incomati river against Mariqueen, being joined by their native allies and supported by gunboats on the river. On Jan. 29 they defeated the rebels on the right bank, and drove them back in disorder as far as Mariqueen. On Feb. 2 the enemy entered their camp at dawn, treacherously displaying a flag of truce, and began to assagai the sleeping soldiers, killing 9 whites and 20 Angolans, and wounding a large number

before the troops formed a hollow square and repelled the natives with the aid of Maxim guns, killing 150. The troops burned kraals and occupied Maraqueen and other positions on the Incomati, but made no farther advance until the rainy season was over. A large proportion of the soldiers who were sent out from Portugal in the preceding October had died of fever; nevertheless 1,500 officers and men volunteered for the service and sailed for Lourenço Marques in March and April. The operations on the Incomati river were brought to a successful issue. The whole left bank was in the hands of the Portuguese by the middle of May up to Macaneta, where the chief Mahasul made a last, ineffectual stand. Military posts were established at Maraqueen and Incanhine and an armed police was organized. Mahazula retired with his men into Gungunhana's country.

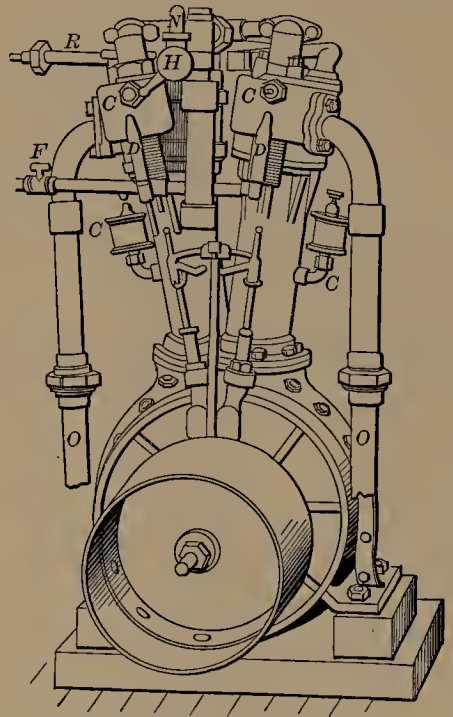
The delimitation of the frontier between the Portuguese territory and the Transvaal was completed at the beginning of the year by a joint commission, of which Senhor Ennes was the Portuguese member. The dispute with the British South Africa Company in regard to the boundary of Manicaland has been referred to the arbitration of Italy.

**German Southwest Africa.**—The German possessions of Damaraland and Namaland, though 340,000 square miles in extent, have not more than 200,000 inhabitants. There were 1,200 resident whites in 1894. The protectorate is administered by an Imperial Commissioner. The supply of water is deficient, except in Damaraland, where there are good grazing grounds. The cost of the administration for 1894-'95 is set down in the budget at 1,027,000 marks, of which the 27,000 marks are raised locally and the rest contributed by the imperial treasury. The German commander, Major von François, had a force of 224 white soldiers in 1894. Unsuccessful attempts have been made to land goods at the mouth of the Swakop river. Valuable guano deposits were discovered in 1895 at Cape Cross, near Walfish Bay.

**CARRIAGES, HORSELESS.** The great horseless-carriage race from Paris to Bordeaux and return made in the spring of 1895, in which 4 people were conveyed in what the French call a *voiture automobile* a distance of 750 miles in time that made the average for the distance 16 miles an hour, at once turned the attention of all interested in the improved methods of locomotion, of which the bicycle has been a forerunner, to this method of getting over the ground without the use of man's universal friend, the horse. It appears that the application of steam has only temporarily settled the question of transportation. Horseless carriages have been used successfully in Paris for several years. Among the reasons that might make horseless carriages popular in the United States are the excessive cost of keeping horses, the cost of labor, and the same difficulties experienced in keeping a coachman that one encounters in his experience with domestic help. The principal reason against the adoption of the horseless carriage here so readily as in Europe is the condition of the roads. In England and France the roads are excellent; here they are the chief source of regret for bicyclists, pedestrians, drivers, and every-

body else that is compelled to use them. Then, too, the uneven formation of the country is against the use of a vehicle propelled by a motor, as unless a motor of tremendous power is provided there is always difficulty in climbing hills.

A horseless carriage resembles an ordinary carriage without shafts, except that it is somewhat more solidly built, and on closer examination it can be seen that it is furnished with what looks like the compartment under a dogcart, for the power, and has a handle in front of the driver's seat, by which it is steered. The horseless carriages first made themselves popular in Paris, that city of smooth and almost level pavements. At first their owners did not dare to trust themselves far; but soon with experience came confidence, and the journeys were extended to Versailles and St. Cloud instead of being limited to little trips about the Louvre and along



DOUBLE-CYLINDER MOTOR FOR HORSELESS CARRIAGE.

the Champs Élysées. It was found, too, that in point of speed and in ease in making journeys they were far ahead of those drawn by horses.

One of the most important questions in connection with the practical employment of the horseless carriage related to the power that should move it. The race from Paris to Bordeaux settled this, for all four of the prizes were won by *voitures* equipped with the motor that utilizes petroleum as a fuel. Steam, electricity, and naphtha were easily outstripped as a motive power by petroleum; for what was wanted was not a great power, but a handy and convenient one. Steam could easily furnish all the power wanted to propel a horseless carriage, or anything else, up even a Vermont hill; but the employment of steam is always somewhat clumsy, and there is oil and a boiler, a hot fire, escapes of vapor, an engineer, and various other inconveniences which it was desirable to avoid. A



steam carriage was made to compete in the Paris-Bordeaux race, but it weighed several tons, and its very strength militated against it. An electric horseless carriage was also got up for this race. This weighed several tons, and was impracticable. The race referred to definitely settled it, then, that one of the necessities of a horseless carriage is that it must be comparatively light. With petroleum there is no necessity for either an engineer or an electrician to be always in attendance when it is desired to take

one in most successful use in this country so far, is the motor that has been most successfully applied to the service of launches. This is a petroleum motor, which produces its power by a series of explosions in a cylinder or hot box, brought about by the mixture, at a certain temperature, of air and gas. The downstroke of the piston draws a current of hot air into the carburetor attached to the motor. The temperature of this current causes generation of vapor from gasoline contained in the carburetor and



A HORSELESS CARRIAGE, WITH PETROLEUM ENGINE.

a trip, as the knowledge necessary to enable one to take entire charge of a petroleum motor is so slight that it is not a matter for serious consideration. Petroleum has the further advantage of not having any of the inconveniences of steam, such as blow or waste pipes, a boiler, or a furnace, or the friction resulting from the exercise of such power as steam exerts, and the consequent need of constant oiling, while there is absolutely no danger of explosions.

**The Motor.**—The prize-winning motor of the Paris-Bordeaux and return races, and the

its entry into the cylinder. Between the carburetor and the cylinder a cold-air pipe is attached to the suction pipe, which is opened or shut by an admission valve. It needs a certain proportion of air and vapor to secure an effective explosive mixture, and, by opening the admission valve more or less, the proportion of this mixture is regulated. The upstroke of the piston forces the explosive mixture into the platinum tube attached to the explosion chamber above the cylinder. The platinum tube is heated by a small lamp, the only fire used. This flame ig-



nites the explosive gas, thus creating a sudden expansion of it, which forces the piston down again. The second upstroke in the cylinder exhausts the expanded gases through a pipe opened by a valve at every second stroke only. The exhaust pipe is opened at the rear of the carriage, and the motion carries any disagreeable odors away from the occupants of the vehicle. The double-cylinder motor is the kind most employed. To start the motor a little crank must be turned half a dozen times, sometimes as much as half a minute, to enable the machine to begin its explosions. This constitutes the only serious objection to it. The motor has no explosive force on hand, and requires no safety valve, like steam. When a motor is stopped or shut off it is dead, and there can be no effort on its part until half a dozen turns of the crank have sucked in a mixture of gas and air to begin over again a series of explosions in the cylinders. The efforts that are being made by inventors to do away with the disadvantage mentioned may be appreciated, when it is said that in the large motors of this kind for use in mills and like heavy establishments the engines of 100 horse power obtain the start by the use of several smaller engines. Of course it would be futile to attempt to start by hand an engine of 100 horse power. The smallest of these engines is not too large to be started by hand. This smallest engine, as soon as it has got its own power, in turn sets the second one, and that starts the main machine.

Hitherto it has been necessary to carry on a journey in one of these horseless carriages at least a barrel of water for cooling the cylinders. A new device, by which a smaller quantity will be sufficient, consists of an arrangement by which the water used to cool the cylinders is re-cooled almost as soon as it is used, and then made to play its part over and over again. The quantity of fuel used is not worth making any effort to reduce, as it is only a pint of petroleum an hour to each horse power. Three horse powers was the capacity of the winner at the last Paris race. The most successful of the devices thus far for doing away with the inconvenience in starting the machine is a contrivance, now popular in Paris, of a gearing by which, when the carriage is stopped for a few minutes, a small wheel takes the power and continues the engine in motion, but with the power not applied to the wheels of the wagon.

Two large firms in Paris are very busy supplying the demand for horseless carriages. One makes carriages with wooden spokes, while the other produces a vehicle with the steel spokes that characterize the bicycle. It was one of the latter, carrying 4 persons, that won the special prize in the great French race. The 750-mile journey was made by a wagon carrying 2 persons in forty-eight hours and fifty-three minutes. A factory for the manufacture of horseless carriages has been established at Steinway, Long Island, near Astoria.

**CHEMISTRY. Chemical Theory.**—Prof. Raphael Mendola, opening the chemical section of the British Association with an address on the progress of chemical science, remarked that the recognition of the quantivalence of carbon by Kekule in 1858 was the beginning of the

recent development of chemical science. The conception of the valency of the atoms was broached by Frankland in 1852, and shortly after that time the course of discovery began to concentrate itself in two channels: one following the physical side, and the other carrying "the tide of discovery arising from the valency doctrine and its extension to the structure of chemical molecules." The two channels are at present fairly parallel and not far apart. We have one class of workers dealing with the physics of matter in relation to general chemical properties, and another class of investigators concerning themselves with the special properties of individual compounds and classes of compounds with atomic idiosyncrasies. The workers of one class are differentiating, while their colleagues are integrating. Both methods are necessary for the development of the science; and there is no antagonism, but co-operation.

The success attending the application of the doctrine of valency to the compounds of carbon has helped its extension to all compounds formed by other elements, and the student of the present day is taught to use structural formulas as the A B C of his science. The doctrine in its present state is empirical, but we can hardly doubt that a physical reality underlies it. There is something to be reckoned with besides valency. The great desideratum of modern chemistry is a physical or mechanical interpretation of the combining capacities of the atoms. The services of the doctrine of Valency, however, in the construction of rational formulas, especially within the limits of isomerism, have been incalculable. The doctrine underwent a prolific development through the introduction of the stereochemical hypothesis in 1874; and renewed vitality was given it by the conceptions of tautomerism and deomotropy, formulated by Laar in 1885, and by Paul Jacobson in 1887. A more recent development of structural chemistry is the conception of certain ideal complexes of atoms which we consider to be the nucleus or type from which the compound of known constitution is derived. In some cases these types have been shown to be capable of existence; in other cases they are still ideal. The parent compound has sometimes been known before its derivative, as in the case of ammonia and the organic amines and amides; and in other instances the derivatives were obtained before the type was isolated, as in the case of the hydrazines, which were characterized in 1875, and the hydrazo compounds, which have been known since 1863, while hydrazine itself was only first obtained in 1887. This theory is also capable of almost indefinite extension. The present position of structural chemistry may be summed up in the statement that we have gained an enormous insight into the anatomy of molecules, while our knowledge of their physiology is as yet in a rudimentary condition.

The theory is sustained by Dr. T. L. Phipson that the atmosphere was originally of nitrogen only, and the free oxygen which now forms part of the air we breathe is entirely the product of plant life extending over countless ages—not that plants were the creators of oxygen, but that they were the means by which Nature has placed free oxygen gas in the atmosphere of the



earth. Palæontologists generally admit that the lowest forms of plant life were the first to make their appearance; on these, of course, would have devolved the function of preparing an atmosphere fit for the existence of animals. The author has again, in experiments carried on during the summer of 1894, confirmed his hypothesis that the lower forms of plant life are precisely those which produce oxygen most rapidly and most abundantly. Between green plants, which are essentially anaërobic, and the more perfect animals, beings which are just as essentially aërobic, there exists a vast intermediate class presenting more or less the characteristics of both, such as the various organized ferments, fungi, bacteria, etc., which represent the gradual transformation of the anaërobic cell into the aërobic cell under the influence of the gradual change of medium—that is, the constantly increasing amount of free oxygen in the atmosphere since the earlier geological ages. An experiment is described by the author in which green unicellular algæ, bottled and exposed to the sunlight every day at a temperature of from 43° to 63° F., produced oxygen at a rate represented by 420 gallons a year, or 42,000 gallons in a century.

**Chemical Physics.**—The behavior of gases in electrification and the influence of moisture in their combination was discussed in the chemical section at the recent meeting of the British Association. Prof. J. J. Thomson exhibited experiments showing the connection between chemical charge and electrical discharge through gases. The gases were confined under pressure in glass bulbs which were exposed to electrical action. As each spark passed between the poles of the machine a rapidly alternating current was set up in the coil, and hence by induction in the gas. Moist oxygen gave a vivid incandescence, followed by an afterglow or phosphorescence on removing the bulb from the coil. With the dry gas, incandescence did not take place; it could, however, be started in the dry gas by a brush discharge, and, if once started, continued under the influence of the current. With air the phenomenon is reversed; damp air does not glow, dry air does. By making use of two coils, in one of which was a beaker of fairly strong sulphuric acid, and in the other a bulb containing moist oxygen, the presence of the acid was shown to prevent the incandescence in the bulb, indicating that the conductivity of the gas was much greater than that of the acid. As the glow is only given in gases forming polymeric modifications, it is suggested by the author that the drops of water present may act as conductors, causing the original molecules to dissociate. With gases this preliminary dissociation can be brought about only by the expenditure of a large amount of energy. Alcohol vapor will act similarly to water, and it becomes of interest to study other solvents. Mr. Brereton Baker followed with experiments on the influence of moisture on chemical changes. He showed that ammonia and hydrochloric acid when dry do not combine. Tubes were exhibited containing dry sulphur trioxide and cupric oxide and dry sulphur trioxide and lime side by side without acting upon one another. He has obtained analogous results to those of

Prof. Thomson by using vacuous tubes, into one end of which a platinum wire was fused, and which contained a small quantity of mercury; on shaking the tubes in a dark room incandescence took place in those containing moist oxygen. This is less if nitrogen is present, and ceases if the gas is dry. For the explanation of these results, Mr. Baker is inclined to the physical view of the matter suggested by Vernon Harcourt rather than to the chemical one proposed by Dixon. He has long believed in an electro-chemical theory of combination; hence he considered it desirable to ascertain whether molecules capable of combining are at different potentials, and whether the difference of potential increases as they are brought nearer to the point of union; and whether the conditions that affect chemical change affect in the same direction the passage of the electric discharges. Experiments were performed which showed that mixed gases can be partially separated by the attraction of their molecules for oppositely charged plates. Hence it seems probable that the molecules themselves are charged. Moreover, experiment showed that the electric discharge takes place more readily in moist than dry air; and, further, that the electric glow obtained by shaking mercury in different rarefied gases gradually diminishes as the gas is dried by phosphorous pentoxide, and finally disappears. Hence the author concludes that in the presence of moisture electric discharge is affected in the same way as chemical combination. If it can be regarded as proved that substances which are capable of chemically combining are electrically charged, the great significance of this result is obvious.

Attention is called by Dr. G. E. Quinke to the fantastic forms assumed by combinations of alkalis and oleic acid when brought into contact with water. Oleic acid with a little alkali, or containing an acid oleate of an alkali in solution, forms in much water hollow spheres, globules, and foam, with walls of liquid oleic acid. The hollow spaces are filled with aqueous soap solution. When more water is added, the walls are covered with a solid skin of the acid oleate, which may then become quite liquid again by decomposition into liquid oleic acid and aqueous soap solution. The periodic flow of soap solution at the surface separating liquid oleic acid and water produces vortex motions, which may be made evident with methylene blue or other coloring matter. More hollow spheres and bubbles of oleic acid are formed, which are arranged by the capillary forces on the larger bubbles in definite positions, such as straight lines, circles, and ellipses. An analogy is pointed out in Dr. Quinke's paper between this arrangement and the configuration of various small portions of the stellar universe, such as parts of Orion, Virgo, and Coma Berenice, and Plateau's experiments with weightless oil spheres illustrative of the generation of the solar system is recalled. The author also emphasizes the fact that the protoplasm of the organic world shows a structure and motion similar to those of oil foam with liquid or solid surfaces.

The critical temperature of hydrogen has been determined by M. Olzewski to be  $-234.5^{\circ}$  C., and its boiling point  $-243.5^{\circ}$  C., or  $-406.3^{\circ}$  F.

As to the laws of solubility, A. Belohoubek, of Prague, has shown: 1, that of organic substances consisting of carbon and hydrogen, with or without oxygen, substances free from oxygen are insoluble in water; 2, the richer a compound in oxygen the more soluble it is in water; and, 3, bodies dissolve each other better the more closely they resemble each other in structure. In illustration of the third rule C. T. Blanchard observes that simple compounds are soluble in water, more complex compounds in more complex liquids, like alcohol, benzene, etc. The law, originally applied by its author to organic substances, admits of extension to all bodies, whether elements or compounds. Thus many metals, as palladium, are soluble in hydrogen. A still larger number are soluble in carbon, as iron, manganese, nickel, and aluminium. Metals also dissolve in one another, sometimes to an indefinite extent, but very generally to form alloys of definite constitution capable of crystallizing. This is exactly analogous to salts crystallizing with definite amounts of water. Again, nonmetals, which are, as a rule, insoluble in water, dissolve in various organic substances, as benzene, carbon disulphide, etc. Metals which dissolve in each other and in hydrogen, or the element carbon, are insoluble in such complex bodies. It follows, therefore, that nonmetals from the point of view of solubility are more complex, and therefore more highly evolved substances than metals. Sulphates, which are not of such simple structure as chlorides or bromides, or even as nitrates or chlorates, having more atoms in the molecule, are, as a rule, less soluble.

**New Substances.** *Argon and Helium.*—The announcement by Lord Rayleigh and Prof Ramsay of their discovery of a new constituent in the atmosphere which they named argon was recorded in the "Annual Cyclopædia" last year. A further communication concerning the newly discovered element was made by the authors at a public meeting of the Royal Society held Jan. 31, when the properties of argon were described so far as they had been discovered and its possible place in Mendeleef's periodical system was discussed. Lord Rayleigh's attention was directed to the inquiry which resulted in this discovery by observing, while engaged in the determination of the densities of some of the more permanent gases, that nitrogen when extracted from the atmosphere was about one half per cent. heavier than when obtained from chemical compounds. Prof. Ramsay became interested in the research, and the two, each investigating in his own way, produced argon by different methods about the same time. It can be separated from the atmosphere and from the nitrogen, which it much resembles, by atmylosis, or absorption in porous bodies, and by "sparking," or the operation of the electric spark. It proves to be an inert gas, generally refusing to enter into combination with other substances, having a density of about 19.7; is very soluble in water, it having been found that the nitrogen extracted from rain water is twice as rich in argon as that which exists in the air; and has been shown by Mr. Crookes to have two spectra, marked by red and blue lines respectively. As determined by Prof. Olzewski, its critical temperature is  $-126^{\circ}\text{C}$ ., and

its critical pressure 50.6 atmospheres. It boils, under a pressure of 740.5 millimetres, at  $-186.9^{\circ}\text{C}$ ., and has a density at the boiling point of about 1.5. It has been frozen into a white solid of which the melting point is about  $-189.6^{\circ}\text{C}$ . The ratio of its specific heats, 1.66, points to the conclusion that it is monatomic. The question next arises, whether it is an element or a mixture of elements. Mr. Crooke's observation of the dual character of its spectrum bears in favor of the view that it is a mixture; Prof. Olzewski's determinations of definite boiling and melting points and critical temperature bear as directly and more forcibly against that view; and the authors regarded the balance of the evidence as pointing to simplicity. Its atomic weight, as calculated from its density by Avogadro's law, is 40. If this be correct and it is monatomic, no place is found for it in the periodical scale. Were it diatomic, and its atomic weight 20, it might find a place between fluorine, 19, and sodium, 23. Of this aspect of the subject, the authors said in their paper: "If argon be a single element, then there is reason to doubt whether the periodic classification of the elements is complete; whether, in fact, elements may not exist which can not be fitted among those of which it is composed. On the other hand, if argon be a mixture of two elements, they might find a place in the eighth group, one after chlorine, and one after bromine."

Prof. Mendeleef, discussing the constitution and place of the new substance, dismisses the supposition of its being a mixture as lying beyond all probabilities. He then discussed the series of possible molecular formulas,  $A$ ,  $A_2$ ,  $A_3$ , . . .  $A_n$ . If it were  $A$ , no more could be found for it in the periodic system. Upon the second supposition ( $A_2$ ) it would find its place in the eighth group of the second series, or after fluorine, but this supposition, too, was liable to strong objections. Much, however, might be said in favor of a third hypothesis, that the molecule of argon contains three atoms, and that its atomic weight is about 14, whence it might be considered as condensed nitrogen,  $N_3$ . On the supposition that the molecule contains five atoms and its atomic weight is 10 or 8, no place is found for it in the periodic system; but if the molecule be supposed to contain six atoms, and the atomic weight be 6.5, the element might find a place in the first series, probably in the fifth group. The author considered this supposition and the one that gives the molecular formula  $N_3$  as the more probable ones.

The supposition that argon is an allotropic form of nitrogen was suggested by Prof. Dewar on the first publication by Lord Rayleigh and Prof. Ramsay. Similar views have been expressed by Prof. T. L. Phipson, M. Berthelot, and Prof. Brauner, of Prague.

Experimenting with a small quantity of argon sent him by Prof Ramsay, M. Berthelot found that under the influence of the silent electric discharge it would combine with certain organic compounds, and notably with benzene, with which 83 per cent. or five sixths of the argon was condensed in chemical combination. The products of the combination resembled those produced by the silent discharge acting on nitrogen mixed with the vapor of benzene,



consisting of a yellow, resinous, odorous matter condensed on the surface of the two glass tubes between which the electric action is exerted. This substance submitted to the action of heat decomposes, forming volatile products and leaving a carbonaceous residue. The volatile products of the decomposition turn litmus paper blue, indicating that an alkali is formed. The author observes, in his paper, that the conditions under which argon is condensed by hydrocarbons tend to assimilate it still closer to nitrogen. M. Berthelot found in this research that the action of the silent discharge was accompanied with a faint violet glow, visible in darkness; and on one occasion a fluorescent body was formed which gave out a magnificent greenish light and a splendid spectrum. After a more complete spectroscopic examination of the light, in which M. Deslandres assisted, the conclusion was drawn that the fluorescence is due to a condensation compound of argon, and that it points to the probable existence of a complex state of equilibrium in which argon, mercury (which is used in the course of the experiments in which the fluorescence is developed), and the elements of benzene, or rather a compound condensed from it, are concerned.

Prof. Ramsay's attention was directed, while he was seeking clues to compounds of argon, to the gas which Hillebrand had found given off on warming the Norwegian mineral clèveite, and which was supposed to be nitrogen. The gas, however, proved to be almost free from nitrogen, but to exhibit the spectrum of argon, together with some other lines, one of which, in the green-blue, was specially prominent. Mr. Crookes, examining the gas spectroscopically, found that this line, to which his attention was specially directed, corresponded with the line  $D_3$  of the spectrum of the solar chromosphere, which is regarded as indicating the presence of an element there not hitherto known on the earth, to which the name helium has been given. The same helium line was also identified at about the same time in Prof. Clève's laboratory at Upsala. Clèveite being an uranium mineral, other minerals containing that element were examined for the presence of helium. Prof. Lockyer found it in bröggerite. Fifteen out of about 30 minerals studied by Prof. Ramsay, J. M. Collier, and M. Travers were found to contain helium; and the investigation generally indicated that helium is retained by minerals consisting of salts of uranium, yttrium, and thorium; but whether its presence is conditioned by the uranium, the yttrium, or the thorium can not yet be decided. Meteoric iron, heated in a vacuum has yielded to Prof. Ramsay small amounts of argon and helium, and comparatively large quantities of hydrogen. Free argon and helium have been found by M. Ch. Bouchard in the gases liberated from certain of the sulphurous waters of the Pyrenees. P. P. Bedren and S. Shaw have found that the nitrogen given off by the brine of Middlesborough, England, contains about the same proportion of argon as does atmospheric nitrogen. Magnesium vapor, when it was submitted to the silent discharge by L. Troost and L. Ouvrard, rapidly combined with nitrogen. Continued action after the spectroscopic evi-

dence proved the absence of nitrogen resulted in the gradual diminution of the intensity of the helium and argon rays, till finally a complete vacuum was produced. Hence it appeared that magnesium would combine with helium and argon under these circumstances. Platinum seems to behave like magnesium toward argon when exposed to the silent discharge in Plücker tubes. Experimenting with argon and some elements which combine more or less readily with nitrogen—titanium, boron, lithium, uranium, and fluorine—M. Moissan obtained only negative results.

Prof. Ramsay supposes that a close analogy exists between argon and helium; and that their properties place them in the same chemical class and differentiate them from all known elements. From the properties of certain lines in their spectra he supposes that they contain some common element; and there appears to be a place for such an element with a density 10 and an atomic weight 20 to follow fluorine in the periodic table. The density of helium, however, is so low that there does not appear to be room for a large quantity of a heavier gas; and to fit the periodic table, the density of argon should rather be diminished by removal of a heavier admixture than increased by removal of a lighter one. The observations of Dr. Gladstone indicate the atomic weight 20 for argon, and suggest that its place is in the vicinity of the alkali metals. C. Runge and F. Paschen find a close analogy between the spectra of these elements and those of the alkalies. Their experiments lead them to believe that the gas in clèveite consists of two, and not more than two constituents, of which they propose to call only one helium—the one to which the bright-yellow double line belongs, whose spectrum is altogether the stronger one—while the other ought to receive a new name.

The researches of M. Lecocq de Boisbaudran into the relation among the atomic weights of the elements led him some time ago to suppose the existence of a family of elements no member of which was hitherto known, and of even, or octo, atomicity; whose component elements should be devoid of the faculty of combining with other elements. Among these elements he supposed two, having the atomic weights 20.0945 and 36.40, which should be relatively abundant in Nature. A similar suggestion was made by Mr. C. J. Reed in papers read before the American Association for the Advancement of Science and the St. Louis Academy of Sciences, in 1885. Besides those places mentioned by M. de Boisbaudran, his classification had a place corresponding with the atomic weight 4. The existence of an element without valency of the atomic weight of argon was suggested by Lieut.-Col. Sedgwick, late R. E., in a paper sent to the Royal Society in November, 1892.

These speculations are in harmony with a remark by Prof. Lockyer in describing some of his experiments with helium, that "we appear to be in presence of the *vera causa*, not of two or three, but of many of the lines which, so far, have been classed as 'unknown' by students, both of solar and stellar chemistry; and if this be confirmed, we are evidently in the presence of a new order of gases of the highest importance in celestial chemistry, though perhaps they

may be of small practical value to chemists, because their compounds and associated elements are, for the most part, hidden in the earth's surface."

From the wave length of sound in the gas, from which the theoretical ratio of specific heats 1.66 is approximately obtained, the conclusion is drawn by Prof. Ramsay that helium, like argon, is monatomic. M. Olzewski has not been able to liquefy helium, though he subjected it to a pressure of 140 atmospheres, cooling it to the temperature of air boiling at low pressure, and expanding suddenly. Its atomic weight is fixed by Prof. Ramsay at 4.26.

The lower sulphide of carbon, CS, has been obtained by Dr. Deninger, of Dresden, in considerable quantities by heating anhydrous sodium sulphide and excess of chloroform in exhausted sealed tubes to about 180° C. Sulphureted hydrogen, hydrogen chloride, and the new gas were obtained. The gas is combustible, burning with the production of sulphur dioxide, and is very explosive; it is energetically absorbed by alcohol and aniline, and readily condenses to a liquid in an ordinary freezing mixture. It is also obtained by heating in sealed tubes a mixture of silver sulphide and iodoform.

The investigation of the new iodine base Iodonium has been continued by pupils of Prof. Victor Meyer. A base and its salts derived from toluene are described by Mr. John McCrae, and a further series derived from para-chlor-iod benzene,  $C_6H_4ClI$ , by Mr. Wilkinson. From the various experiments it appears that the reactions discovered by Prof. Meyer and Herr Hartmann between iodobenzene and silver oxide, and between sulphuric acid and iodobenzene, which resulted in the preparation of the first Iodonium base, are of fairly general application in the benzene series. These remarkable compounds containing iodine as the grouping element, must now, therefore, be regarded as thoroughly well established, and the older idea as to the nature of the iodine atom must give place to a fuller conception of the capabilities of that element.

Prof. Joly, of the Paris École Normale, has investigated the compounds of ruthenium, principally those resulting from an association of this element with binoxide of nitrogen, a combination which, behaving as a single body, unites with chlorine, bromine, iodine, and oxygen. He finds it to be, of all known elements, that which presents the most original properties. He has exhibited a red coloring matter, resulting from an association not yet definitely determined (oxychloride of ammoniacal ruthenium), giving a tinctorial power equivalent to that of the richest dye materials obtained from coal tar, to that of fuchsine, for instance. A five-millionth part of the substance suffices to color water. It dyes silk directly, and the color thus procured is stable. The chemical reactions of this new coloring matter are equally interesting. Acids transform it into yellow, and alkalis bring it back to red.

Dr. Bayer describes in the "Bulletin de la Société Chimique" what appears to be a new element discovered by him in the residual liquors derived from the older process for the extraction of aluminium from red bauxite. It

occurs in the form of an acid contained in a deep-brown precipitate obtained by adding hydrochloric acid to the liquid left after the vanadium and chromium have been removed. After a series of processes for the removal of other substances, the new acid is obtained by evaporation—a substance soluble in water, from which it is deposited in yellow crystals that fuse at a red heat to a brownish-yellow mass. Ammonia transforms the acid into an olive crystalline powder, presumably an ammonium salt, which readily dissolves in hot water and crystallizes in cubes from the solution on cooling. Other precipitations and reactions are described. Dr. Bayer anticipates that when the new substance has been obtained in sufficient quantities to allow accurate examination it may prove to be one of the missing elements predicted by Prof. Mendeleef in the nitrogen-phosphorus group. It exhibits characteristic spectroscopic lines in the green, blue, and violet.

A new organic acid described by H. J. H. Fenton is obtained by oxidizing tartaric acid under certain conditions in presence of a ferrous salt—in this particular instance by the oxidation of moist ferrous tartrate in the air. The reaction is much accelerated by light. The acid when isolated proves to be dibasic having the formula  $C_4H_4O_6 + 2H_2O$ . It gives a beautiful violet color with ferric salts in presence of an alkali. Heated with water it is resolved into carbon dioxide and glycolic aldehyde, the latter substance polymerizing to form a sweet-tasting gum having the formula  $C_6H_{12}O_6$ .

Several aromatic esters of arsenious acid, prepared for the first time by Dr. Fromm, of Rostock, are either viscous liquids or crystalline solids, and are prepared with considerable facility. The triphenyl ester,  $As(OC_6H_5)_3$ , is obtained by allowing arsenic trichloride to fall drop by drop into sodium phenylate suspended in ether. It is a colorless viscous liquid endowed with an odor somewhat resembling that of phenol, and is decomposed instantly by water into arsenious oxide and phenol. The para-cresyl ester,  $As(OC_6H_4CH_3)_2$ , is similarly obtained, is likewise an oily liquid boiling at a higher temperature, and has similar properties. The benzyl ester,  $As(OCH_2C_6H_5)_3$ , has been isolated in an analogous manner, but is not quite so stable as the others, being more or less decomposed upon distillation in a vacuum. It may be obtained practically pure by heating the product of the reaction in an oil bath to 200° C. under low pressure. It reacts with water similarly to the two other esters. In addition to these liquid aromatic arsenious esters, the  $\beta$ -naphthyl ester,  $As(OC_{10}H_7)_3$ , has been prepared by the action of arsenic trichloride upon the sodium derivative of  $\beta$ -naphthol. It crystallizes from the ethereal solution after decantation from the precipitated common salt, in colorless aggregated crystals, which melt at from 113° to 114° C., and are readily soluble in alcohol and benzene as well as in ether. Water immediately decomposes them, and in boiling water the products of the decomposition—arsenious oxide and  $\beta$ -naphthol—dissolve completely.

**New Processes.**—Anhydrous hydrogen peroxide, isolated by Dr. Wolfenstein, proves, contrary to the previous belief, to be stable and



capable of distillation under reduced pressure, with little loss. In attempting to concentrate solutions of hydrogen peroxide in a vacuum and also in the open air upon the water bath, a solution as strong as 66 per cent.  $\text{H}_2\text{O}_2$  was obtained, but with a loss of more than 70 per cent. of the original amount of peroxide employed. Moreover, it was found that when the common commercial 3-per-cent. solution is concentrated, the percentage of  $\text{H}_2\text{O}_2$  may be brought up to 45 without the loss of any considerable quantity by volatilization, but that as the concentration continues to rise above this limit the volatilization of the peroxide increases at a very rapid rate, for the great loss was proved to be due not to decomposition, but to actual volatilization of the substance. Hydrogen peroxide appearing to be stable at the temperature of the water bath, an attempt was made to distill it under reduced pressure. A quantity of commercial hydrogen peroxide concentrated till it contained 50 per cent. of  $\text{H}_2\text{O}_2$  was subjected to a succession of fractional distillations, when a portion distilled at  $84^\circ$  to  $85^\circ$  C. proved to be practically pure  $\text{H}_2\text{O}_2$ , having a strength of 99 per cent. The liquid thus isolated is a colorless sirup which exhibits but little inclination to wet the surface of the containing vessel. When exposed to the air it evaporates. It produces a prickly sensation when placed upon the skin, and causes the appearance of white spots that take several hours to disappear. The experiments are regarded as establishing the acid nature of hydrogen peroxide.

The explosive properties of the sodium and potassium derivatives of nitromethane have been well illustrated in experiments by Prof. Zelinsky, of Moscow. The sodium compound,  $\text{CH}_2\text{NaNO}_2$ , is prepared by Victor Meyer by diluting a quantity of nitromethane,  $\text{CH}_2\text{NO}_2$ , with ether and treating the liquid with a solution of sodium in alcohol, when the compound is precipitated. Prof. Zelinsky employs essentially the same process, except that he uses an alcoholic solution of sodium ethylate as a precipitating agent. Being desirous of obtaining the compound anhydrous, he sought to achieve his object by the use of the water bath, carefully taking in his preliminary test only about a grain of the substance. Within five minutes an explosion occurred by which the watch glass supporting the substance was pulverized and the water bath seriously injured. An explosion always results, according to Prof. Zelinsky, from the contact of the dry sodium compound with a minute quantity of water. An assistant placing about 5 grains of the substance in a glass, the surface of which was moist, the explosion which instantly occurred shattered every piece of apparatus upon the table, and all the gas flames in the laboratory were extinguished by the atmospheric wave caused. The assistant only sustained a trifling injury. The potassium compound,  $\text{CH}_2\text{KNO}_2$ , is prepared in a similar manner to the sodium compound, and is still more unstable, exploding at the ordinary temperature shortly after its isolation. It separates in well-defined crystals upon the addition of the potassium ethylate. The crystalline form, however, soon disappears, and upon rapidly transferring to a filter an explosion invariably occurs as

soon as the compound becomes drained free of most of the mother liquor.

M. Moissan has been making a more exact study of the properties of titanium, of which little is known on account of the difficulty of obtaining the element in a state of sufficient purity. The powder the form in which it usually occurs is produced by the action of the alkaline metals on the fluotitanates, and contains nitride of titanium (the metal having a marked affinity for nitrogen), potassium or sodium, oxygen, and silicon. The reduction of vanadic acid and silica in the electric furnace suggested to the author that titanate acid might be decomposed in the same way. The result of the experiment varied according to the intensity of the arc employed. With an electric arc produced by a machine of only a few horse power, a blue crystalline powder of protoxide of titanium was obtained; with a machine of 45 horse power, a yellow substance with a bronzy fracture composed of nitride of titanium. A definite and crystallized carbide was also prepared. Finally, by subjecting a mixture of titanate acid and charcoal to the action of an arc produced by a machine of from 100 to 300 horse power he obtained melted titanium. This metal is the most refractory substance that M. Moissan has so far obtained by the aid of the electric furnace. It is more difficult to fuse than pure chromium, tungsten, molybdenum, uranium, or zirconium. It is extremely hard and cuts the diamond. When the mixture of titanate acid and charcoal was placed in the crucible of the electric furnace exposed to an arc produced by a machine of 300 horse power, the upper part of the product for a thickness of 1 or 2 centimetres was fused titanium; beneath this was a layer of the nitride, and under this the blue protoxide. A casting was prepared containing 2 per cent. of carbon. Titanium prepared in this way has a slighter affinity for nitrogen than the powder resulting from the action of an alkali metal on the fluotitanates. This pulverized titanium burns in nitrogen at a temperature of  $800^\circ$  C.; it combines at the moment of incandescence with oxygen at a red heat. It does not decompose the vapor of water except at a temperature above  $700^\circ$  C. Titanium unites readily with iodine to form an iodide, and is soluble in lead, copper, and iron. M. Moissan adds that in respect to other properties it resembles the metalloids, especially silicon.

From acetylene it is possible, as is shown by Prof. Vivien B. Lewes, to build up all the other hydrocarbons that can be used for illuminating purposes. For instance, if acetylene be passed through a tube heated to just visible redness, it is rapidly and readily converted into benzol; at a higher temperature, naphthalene is produced, while by the action of nascent hydrogen on acetylene ethylene and ethane can be built up. From the benzol we readily derive aniline and the whole of that magnificent series of coloring matters that have been produced from that substance; while the ethylene produced from acetylene can be readily converted into ethyl alcohol by consecutively treating it with sulphuric acid and water, and from the alcohol again an enormous number of other organic substances can be produced; so that acetylene can, without exag-

geration, be looked upon as one of the great keystones of the organic edifice. With a cheap and easy method of preparing it, such as seems to be afforded by the calcium-carbide process, it is hardly possible to foresee the results which may be ultimately produced. The most valuable application of acetylene promises to be to purposes of illumination, for which it has many advantages over coal gas. It has been shown by experiment that it is twelve times as efficient in producing light as the best gas now in use for that purpose, a consumption of 5 cubic feet per hour furnishing a light of 250 candle power, while an equal amount of common gas will give a light of only 20 candle power. Further, only about one sixth as much oxygen is consumed as in obtaining an equal amount of light by the usual methods. The gas is poisonous when breathed, but its presence may be readily detected by its characteristic heavy odor of garlic.

A new and very convenient method of preparing the unsaturated hydrocarbon allylene,  $C_3H_4$ , by means of the action of magnesium on the vapors of the alcohols is described by Prof. Keiser and Miss M. B. Breed. The process has been employed with methyl and ethyl and other alcohols, but with none of them is the gas so pure as that derived from the use of propyl alcohol. When this substance is used the new method is said to be far preferable to the ordinary one of decomposing propylene bromide with alcoholic potash.

Persulphuric acid and its anhydride were first obtained and described by M. Berthelot, and its potassium, ammonium, and barium salts were prepared in 1891 by Dr. Marshall, of Edinburgh. A second memoir by M. Berthelot on the acid and its salts confirms Dr. Marshall's results, and includes a description of the method of preparing the acid by electrolysis of a solution in dilute sulphuric acid of potassium or ammonium sulphate, accordingly as the potassium or ammonium salt is required, in the inner cell, and dilute sulphuric acid in the outer cell. At the expiration of fifteen or twenty hours, the inner cell will contain large quantities of beautiful crystals of the persulphate. Crystals of the salt are also obtained by direct electrolysis of sulphuric acid and subsequent addition to the product of a concentrated solution of potassium bisulphate; and by the gradual addition of anhydrous barium peroxide to concentrated sulphuric acid. Potassium persulphate attacks mercury at ordinary temperatures, with production of a yellow basic sulphate that appears to be identical with the salt called *turpeth mineral*.

**Atomic Weights.**—Bohuslav Brauner's latest calculations of the atomic weight of tellurium give the number 127.71, which is higher by 0.86 than the atomic weight of iodine, 126.85, whereas, from its position in the periodic system, tellurium should have an atomic weight between 123 and 125. On this account the author is led to the conclusion that it is not a simple substance, which is supported by the following considerations: 1, tellurium precipitated and dried in a current of an inert gas gives higher value for the atomic weight than when sublimed in hydrogen; 2, the properties and composition of the dibromide; 3, the varying results obtained on attempting the synthesis of the dioxide, the

basic sulphate, and certain metallic tellurides; 4, the behavior of tellurous and telluric acid solutions toward hydrogen sulphide.

The atomic weight of tungsten has been revised by Prof. E. P. Smith, of the University of Pennsylvania, by means of 2 series of experiments performed by 2 assistants. The mean value derived from the first series, of 9 experiments, was 184.92, taking oxygen as 0.16; and from the second series of 6 experiments, 184.70. The highest and lowest values obtained in the first series differed only 0.02, and in the second series only 0.07 from the mean. Striking the medium between these two means gives 184.8 as a close approximation to the true atomic weight of tungsten. This value is considerably higher than the currently accepted one, 184.02, the number afforded by Clarke and Becker's recalculation of the results of older determinations. The increase is probably due to the great pains which were taken to remove the traces of molybdenum from the tungstic acid used in the experiments.

That nickel and cobalt should have the same atomic weight, as they have appeared to have from past analyses, seems at variance with Mendeleef's law, and many efforts have been made to secure greater accuracy in the estimations. Prof. Winkler has recently made analyses of cobalt by methods which he declares were quite unimpeachable, and publishes as the results of two series, each consisting of several individual determinations, carried on with an interval of some months, and with metals from independent mineral deposits—Ni = 58.72, and Co = 59.37, when H = 1 and I = 126.33. This gives cobalt an atomic weight at least half a unit higher than that of nickel.

The value, 87.70, for the atomic weight of strontium, found by Pelouze in 1845, has been confirmed by T. W. Richards. Pelouze's method was found on a comparison of anhydrous strontium, chloride, and silver. Richards used anhydrous strontium bromide and silver, and took the results of 3 sets of analyses carried on by different methods.

**Chemical Analysis.**—Numerous analyses of sea water show that while salinity, or the amount of dissolved salts contained in 100 parts of the water, varies greatly in different regions of the ocean, the composition of the dissolved salts—or the ratio of the constituents of sea salts—remains practically the same in all the superficial marine waters. Consequently, it is only necessary to determine the chlorine in a given weight of water to ascertain at once the respective quantities of other salts present in the sample. It appears, however, from Dittmar's examination of the "Challenger" waters, that lime is slightly more abundant in samples of sea water collected in greater depths than in samples collected nearer the surface of the ocean. Some evidence appears too of slight differences in the composition of the sea salts. There is also abundant evidence that changes in chemical composition take place in the substances deposited on the floor of the ocean; and with the view of throwing some light on the manner in which these changes are brought about, Dr. John Murray and Robert Irvine have examined the composition of the water associated with marine de-



posits on the floor of the ocean or with the blue mud. The experiments indicate that during the process of decomposition the greater part of the oxygen for the oxidation of the hydrogen and carbon of the organic substances in the blue mud is derived from the sulphur salts of the alkaline and earthy alkaline metals in sea water, which, in the first instance, are reduced to the form of sulphides. These sulphides, owing to their instability, especially in the presence of free or loosely combined carbonic acid, are decomposed as they are formed. The sulphur thus reduced from the sulphates may in part, on passing as hyposulphuric acid into the water immediately above the mud, become oxidized back again into sulphuric acid, which, in turn, decomposing the carbonate of lime always present, would reform the sulphate. A certain part of the sulphides or of hydrosulphuric acid which is formed reduces the ferric oxide of the deposit, forming sulphide of iron, which so long as it is not exposed to the action of oxygen remains stable. This gives the characteristic blue color to the great majority of blue muds; and it is by this process that sulphur is continually abstracted from sea water and locked up in marine deposits, which may finally be converted into blue-colored shales, schists, and marls. In these rocks the crystalline pyrites has evidently its origin in the processes of death and decay going on at the time of their deposition at the sea bottom, the sulphur of the sulphide of iron being derived from the sulphates of the sea water, and not from the sulphur of the organisms, as is generally supposed. The bisulphide of iron in the coal measures has probably a similar origin. In the red muds and clays, either from the abundance of oxygen in the superincumbent waters, from the ochreous matter present in the mud or clay, or from the organic matter being small in quantity, the sulphide of iron is either not formed or is after formation soon oxidized into ferric hydrate, which then gives its characteristic red color to the deposits. It may be accepted as a rule that muds containing a large amount of organic matter relatively to the iron present invariably partake of the characteristic blue-black color, while if organic matter be low in amount, or absent, the black sulphide is either not formed or is oxidized into peroxide of iron.

The ammonium salt of thio-acetic acid,  $\text{CH}_3\text{COSNH}_4$ , is described by Prof. Schiff and Dr. Tarugi as an excellent substitute for the disagreeable sulphureted hydrogen in qualitative analysis. Ammonium thio-acetate is decomposed by hot dilute hydrochloric acid, liberating sulphureted hydrogen without any precipitation of sulphur. No objectionable by-products are formed in the reaction, only sal-ammoniac and acetic acid being produced. When a feebly ammoniacal solution of ammonium thio-acetate is added to a hydrochloric-acid solution of metals of the second group and the liquid is heated to near boiling, the metals are at once precipitated as sulphides, while only the faintest odor of sulphureted hydrogen is perceptible. After cooling and filtering the filtrate is found to contain no trace of the metals. The completeness and rapidity of the reaction, particularly in the case of arsenic, is one of its strongest recommendations. Thio-acetic acid is readily prepared by

acting upon glacial acetic acid with phosphorus pentasulphide. It boils at  $95^\circ \text{C}$ ., and is but slightly soluble in water. When the acid is dissolved in a slight excess of dilute ammonia a yellow solution is obtained, which is then diluted to 3 times the volume of the acid originally taken—that is, 10 cubic centimetres of the acid furnish 30 cubic centimetres of the reagent. It is proper to observe that zinc, manganese, nickel, and cobalt are not precipitated in the presence of hydrochloric acid by the new reagent any more than they are by sulphureted hydrogen. The sulphides of these metals are at once precipitated, however, upon rendering the solution alkaline; but as ammonium sulphide acts quite as well for this purpose, Prof. Schiff confines the use of ammonium thio-acetate to the precipitation of the metals of the second group.

Until lately no satisfactory experimental criterion was known for distinguishing easily between true compounds and homogeneous mixtures, but the recent work of Raoult, according to Mr. Philip Hartog, showed that the freezing point of a pure compound was always lowered and its boiling point raised by any admixture.

The method of Dr. J. B. Cohen for determining carbonic acid in the air depends on the length of time required by the carbonic acid in a given volume of air to neutralize a known amount of standard lime solution insufficient to combine with all the carbonic acid present.

Cotton and wool may be separated from one another, according to Thomas T. P. B. Warren, by operating on two samples of the textile material, using a solution of caustic soda in one case and dilute sulphuric acid in the other case. On boiling, the wool will be removed in the first case, while the cotton will be left. In the second case the cotton will be removed while the wool will be left. The fibers are then in a condition fit for further examination if required. If a sample be heated for some time to  $280^\circ \text{F}$ ., the wool can be rubbed out as dust, while the cotton will only be rendered slightly tender. Of course in this case the character of the wool as regards staple, etc., will be lost. If a sample be dipped into dilute sulphuric acid and hung up for some time in a warm place the cotton will be destroyed. On washing and drying the weight of wool is obtained. The loss is due to cotton, size, starch, mineral matter, etc. Undyed mixtures may be boiled in a weak solution, say of eosin. Wool takes a faint pink color; the cotton is unaltered. Dyed mixtures may in most cases be recognized by the action of dilute acids, especially if dyed in the piece, and in many cases if dyed in the hand.

**Chemical Synthesis.**—The synthesis of natural products, or of compounds which are known to be produced by the vital processes of animals and plants, was named by Prof. Raphael Meldola in his address at the British Association as the greatest of the triumphs of structural chemistry. According to a census made by the author, about 180 such syntheses have been realized. The products of bacteria are included within the list because they are results of vital activity in the same sense that alcohol is a product of the vital activity of the yeast plant; while the uro-compounds resulting from the transformation in the animal economy of definite chemical

substances administered for experimental purposes are excluded because natural products only are contemplated. The artificial formation of natural products began with observations arising from experiments not primarily directed to that end. It was not till the theory of chemical structure had risen to the rank of a scientific guide that the more complicated syntheses were rendered possible by more exact methods. An understanding is needed as to what is meant by an organic synthesis. There appears to be an impression among many chemists that a synthesis is effected only when a compound is built up from simple molecules. If the simpler molecules can be formed directly from their elements, then the synthesis is supposed to be complete; but the great interest of all synthetic work arises from our being able by laboratory processes to obtain compounds which are also manufactured in Nature's laboratory—the living organism. Now, if we confine the notion of synthesis to the building up of molecules from simpler molecules or from atoms, we exclude one of Nature's methods of producing many of those very compounds which we claim to have synthesized. There can be no doubt that a large proportion, if not a majority, of the natural products which have been prepared artificially are not synthesized by the plant in the sense of building up at all. They are the results of the breaking down—of the degradation—of complex molecules into simpler ones. The author urges therefore that if in the laboratory we arrive at one of these products by decomposing a more complex molecule by means of suitable reagents, we have a right to call that a synthesis, provided that the more complex molecule which gives us our compound can be in its turn synthesized by no matter how many steps from its constituent atoms. What evidence is there that any one of the 180 compounds which have been prepared artificially is produced in the organism by a direct building up? Is not the opposite view quite as probable? May they not from the simplest to the most complex be products of the degradation of still more complex molecules? It must be remembered that a compound or mixture of a highly complex proteid nature—protoplasm—is always present in the living organism and is the essence of the vitality. Supposing that the products in question are formed by chemical actions upon this, there is no such process as the direct combination of dead molecules to build up a complex substance, but everything must pass through the vital mill. The supposition that chemical synthesis in the organism is the result of the combination of highly complex molecules with simpler molecules, and that the unstable compounds thus formed then undergo decomposition with the formation of new products, may be provisionally called the protoplasmic theory of vital synthesis.

In the attempt of Dr. Backhouse to produce artificial human milk, milk carefully collected with due attention to cleanliness is submitted to fermentation by rennet, in the course of which a relatively rich milk serum is produced containing albumin and milk sugar. This serum is sterilized, and cream is added. A material is thus produced which closely resembles

human milk, and can be varied in composition according to the age of the person using it, or according to what he needs. The author suggests that the sterilization of milk should, if possible, be carried out on the large scale in dairies before distribution; and that in this way, better apparatus being to hand, more cleanly and more effectual results will be obtained than when the sterilization is left in the hands of private persons. Dr. P. Frankland claims to have prepared an artificial human milk by a similar but slightly different process—adding milk sugar to make up the deficiency in the cow's milk—in 1854, and that his recipe has been advantageously used in private and hospital practice.

The synthesis of caffeine has been effected by Emil Fischer and Lorenz Ach, of Berlin. The substance is obtained by a series of processes from the product of the condensation of dimethyl urea and malonic acid.

A new series of iron nitroso compounds described by K. A. Hoffmann and O. F. Wiede affords fine examples of the synthetical production of complex inorganic substances. The compound  $\text{Fe}(\text{NO})_2\text{S}_2\text{O}_3\text{KH}_2\text{O}$  is precipitated in red-brown leaflets by the action of nitric oxide with ferrous sulphate and potassium thiosulphate. This substance is with difficulty soluble in water, and gives a greenish-yellow solution, without decomposition, when dissolved in concentrated sulphuric acid. Ammonium and sodium compounds of similar composition and properties have been prepared. These compounds are classed as salts of dinitrosoferrothiosulphuric acid. Cobalt compounds can be obtained, in which cobalt replaces the iron, but with greater difficulty.

A compound of aluminum chloride with benzoyl chloride has been obtained in large crystals by M. Perrier. Such compounds are of particular importance, in view of the remarkable part which aluminum chloride has been found to play in synthetical chemistry, as affording some insight into the nature of the intermediate reactions upon which the apparently catalytic action of this salt depends. The crystals decompose rapidly in moist air, and are instantly decomposed by water, forming an aqueous solution of aluminum chloride, hydrochloric acid, and benzoic acid. They are readily soluble, however, without decomposition, in carbon bisulphide. The formation of compounds of this nature appears to be general throughout the aromatic series. Compounds containing the aromatic ketones, ethers, and phenols, the chloride of phthallic acid, and the chloride of butyric acid have also been obtained.

**Agricultural Chemistry.**—From investigations of the chemical history of the barley plant carried on during 1894 and 1895 on the experimental plots at Woburn, C. F. Cross and C. Smith draw the general conclusions that the conditions of soil and nutrition have very little influence on the composition of the plant; that the straw grown in wet seasons has a high feeding value, and conversely a low paper-making value; and that the compositions known as fufuroids are continuously assimilated to permanent tissue in a normal season, but in a very dry season the permanent tissue is drawn upon



by the growing plant for nutrient material, which is ordinarily drawn from the cell contents.

The question of nitrogen fixation in algæ has been investigated by Prof. Frank, of Berlin, Laurent and Schloesing, and Koch and Korsowitsch, and most recently by Korsowitsch in 1894. The last author directed his experiments to determining whether algæ in themselves possess the power of assimilating free atmospheric nitrogen or not. Having succeeded in obtaining a single species of alga in a state of purity—a cystococcus—he placed it in a nutritive solution free from nitrates. It failed to show any signs of growth. On adding nitrates to the sand, it grew rapidly till the added nitrates were exhausted, and then stopped; the addition of more nitrate-free solution gave no result, but if only the merest trace of a nitrate were added activity of growth immediately ensued. The conclusion from this experiment—that cystococcus is unable to fix free nitrogen—was confirmed by chemical analysis. The experiments were next varied, with different kinds of algæ placed in nutritive cultures containing soil bacteria of different kinds, arranged in pairs, both members of each couple having identical conditions, except that in the one a small quantity of sugar (dextrose) was added, while in the other no organic compound was present. The results were various, some of the algæ fixing nitrogen in the cultures whether with or without sugar and some only in the cultures containing sugar, while, generally, the activity was largely increased in the sugar-containing cultures. From all the experiments the conclusions are drawn that at least two algæ—cystococcus and stichococcus—possess no “fixing” powers in themselves; that many algæ, taken together with certain micro-organisms of the soil, do possess the power of assimilating organic nitrogen; and that this power is much increased by the addition of such organic substances as sugar. The experiments of Laurent and Schloesing had showed that if in a culture of algæ and bacteria, endowed with “fixing” powers, the algæ were destroyed, the bacteria lost some, if not all, of this capacity which the mixture had possessed; and the experiments of Berthelot, Gautier, and Drouin had shown the importance of organic compounds to nitrification. From such observations as these Korsowitsch concludes that the relationship which the algæ bear to the micro-organisms is one connected with the organic food supply of these latter; and that the algæ, furnished with nitrogen by the bacteria, assimilate carbohydrate material, part of which goes to their own maintenance, but part also to that of the micro-organisms. The relation is therefore, in his belief, an instance of symbiosis, in which each supplies the wants of the other.

The conclusions drawn by M. Pagnoul from his researches on assimilable nitrogen and its transformations in arable land are: 1, that abundant rains may carry off from rich soils considerable amounts of nitric nitrogen; 2, that plants growing on the soil are able to prevent this loss; 3, that carbon disulphide arrests the action of the nitric ferment temporarily without killing it; 4, that the ammoniacal form is a transition state for organic nitrogen passing into

the nitric form; carbon disulphide causes the temporary suspension of action at this stage; and 5, that the nitrous form is also an unstable transition stage.

M. Berthelot's experiments prove that microbes exist of very different species, free from chlorophyll, and capable of fixing nitrogen, especially certain bacteria of the soil. The nutrition of these plants does not appear capable of being maintained by the carbon and hydrogen, resulting from the decomposition of the atmospheric carbonic anhydride and water. It is correlative with the destruction of certain hydrocarbons, such as sugar or tartaric acid, which in some way act as food for micro-organisms. For these beings to fix nitrogen it is necessary that they find suitable nutriment in the medium where they live. It even appears essential for these substances to contain some little nitrogenous matter in order to give the lower organisms the minimum of vitality necessary for the absorption of free nitrogen. But if these nitrogenous principles are too abundant, the bacterium subsists by preference at their expense.

The drainage of cultivated soils, M. P. P. Dehérain observes, is much less abundant than that of bare soils, and is less the longer the ground is occupied. In agriculture the object to be aimed at is to cover the soil with a plant sufficiently luxuriant in its vegetation to evaporate all the rainfall. The loss of nitrogen compounds is regulated, not by the composition of the drainage, but by its abundance. All the nitrogen nitrified in the soil is either assimilated or lost. Thus, when the crop is small the farmer is doubly injured—by the deficiency of the products obtained and by the impoverishment of his land.

B. Dyer has made a series of determinations of the average acidity of the root sap of about 100 plants in order to measure the power possessed by plants of dissolving the mineral constituents of soils. The experiments seemed to indicate the suitability of a 1-per-cent. solution of citric acid as an analytical soil solvent. The effect of this solution on a number of the Rothamstead soils was therefore tried. The conclusion is drawn that valuable indications of the comparative fertility of the soil in minerals are obtained by the use of such a solution.

**Miscellaneous.**—Messrs. Jolles and Winkler find from their investigation of the bacterial contents of margarine and margarine products that these substances are considerably freer from microbes than ordinary butter not made with Pasteurized cream. Whereas butter contains an average of from 10,000,000 to 20,000,000 microbes per gramme, margarine butter yields only from 4,000,000 to 6,000,000 microbes; and in extreme cases the proportion is as 47,000,000 to 11,000,000. Cold appears to act more prejudicially on margarine microbes than on butter germs. No pathogenic bacteria were discovered in any of the samples examined. Many of the ordinary microbes found were isolated and described, and among them two were found which the authors believe are closely associated with rancid processes that occur in old samples of margarine.

Arsenic occurs as an impurity in much glycerin, and samples even of that substance designed

for pharmaceutical purposes have been found to contain it. This arsenic is derived from the reagents used in preparing the glycerin. The supposition, largely entertained, that the arsenic can be, and is removed by distillation is declared incorrect by J. Lewkowitch, a manufacturer, who says that arsenic contained in glycerin can not be removed by distillation, and that there is no process known to him for completely freeing glycerin from arsenic. The pure substance, free from arsenic, can therefore be obtained only from sources where reagents not contaminated with arsenic are used. It can be obtained in those processes where the fats are hydrolyzed by means of water, or in which lime saponification is employed. But all glycerin coming from works where sulphuric-acid saponification is used will contain arsenic, as the glycerin will extract all the arsenic from the sulphuric acid. Arsenic, though the most objectionable one, is not the only impurity that may be found in "chemically pure" glycerin. Organic impurities may be present, either fatty acids, etc., or what are called polyglycerols, under which are summarized all those substances having a higher boiling point than glycerin. Suitable tests are prescribed for the detection of these substances.

Experiments made by R. T. Thomson for comparing the value of formic aldehyde as a preservative with such substances as boric acid, salicylic acid, and benzoic acid show that  $8\frac{3}{4}$  grains of the 40-per-cent. solution of formalin (the best commercial form of the substance) are quite as effective in preserving milk as four times that amount of boric acid (at least when used as a mixture of boric acid and borax), and the same proportion of salicylic acid, while the preserving power of benzoic acid is very low compared with what might be expected from statements made in text-books.

Discussing the sensitizing action of dyes on gelatino-bromine plates, C. H. Bothamly offers evidence against Abney's view, that an oxidation product, formed by the action of light on the dye, is the active agent in assisting the reduction of the silver bromide by the developer. The probabilities, the author held, appear more in favor of Eder's view, that the dye or sensitizer absorbs the energy of the light waves, and passes that energy on to the silver bromide with which it is associated, the silver bromide being thereby decomposed, and the so-called latent image being formed. The author added that so far as he was aware, photo-chemical action is always preceded by the absorption of light waves, and, in the case of colorless substances, it is the ultra-violet rays that are absorbed and do the chemical work. Although the quantitative composition of the latent image is not known, we have, as a matter of fact, considerable knowledge as to its properties. There is no difficulty in determining the absorbing action and the sensitizing effect on two contiguous strips of the same plate, and therefore under strictly comparable conditions. No relation can be traced between the fluorescence of a dye and its sensitizing action.

Mr. Th. Schloesing has experimented with a number of substances with a view of finding a paste for tipping matches endowed with the properties of the mixture containing white phos-

phorus and not having its poisonous properties. The results showed that it is necessary to use potassium chlorate, red phosphorus, ground glass, glue, or its equivalent, and that it is not a simple matter to find a perfect substitute for the paste used in tipping common matches.

In experiments on the antiseptic properties of disinfectants mixed with different fats in the shape of ointments, Dr. Breslauer examined carbolic acid, corrosive sublimate, boric acid, nitrate of silver, etc., in combination with oil, vaseline, fat, lanolin anhydricum, lanolin, and unguentum leniens. The degree of antiseptic power possessed by the disinfectant was found to depend in a remarkable manner upon the particular diluent employed; and in all cases the best antiseptic results were obtained with disinfectants in combination with lanolin or unguentum leniens. The author asserts that oil and fats simply reduce the antiseptic action of the disinfectant.

Prof. Clowes has found that an atmosphere containing 16.4 per cent. of oxygen, 80.5 per cent. of nitrogen, and 3.1 per cent. of carbon dioxide will extinguish a candle flame; while it is still, according to Haldane, respirable, and can even be breathed for a considerable time by a healthy person without injury. An atmosphere which extinguishes a coal-gas flame, however, appears, so far as the proportion of oxygen which it contains is concerned, to approach the limits of respirability. The author advises that the coal-gas flame be substituted for the candle and lamp flame as a test for the quality of air.

**CHILI**, a republic in South America. The national Congress consists of two branches, the Senate and the Chamber of Deputies. Senators, of whom there are one third as many as there are Deputies, are elected by the provinces for six years; Deputies are elected by the departments for three years. Every male citizen twenty-one years of age has a vote if he can read and write. The President is elected by indirect suffrage for five years. The Cabinet is selected by the President, but the ministers are now considered responsible to Congress.

Jorge Montt is President for the term ending Dec. 26, 1896. The Cabinet in the beginning of 1895 was composed of the following ministers: Interior, Dr. McIver; Foreign Affairs and Worship, Mariano Sanchez Fontecilla; Justice and Public Instruction, Federigo Errazuriz; War and Marine, Santiago Aldunate Bascuñan; Finance, Carlos Riesco; Industry and Public Works, Manuel A. Prieto.

**Area and Population.**—The area of the republic is 293,970 square miles. The population on Dec. 31, 1893, was estimated at 2,915,332 on the basis of the census of 1885. A corrected official estimate makes it 3,365,221, including 50,000 unevlized Indians. The population of Santiago, the capital, is about 250,000; that of Valparaiso, the chief port, is 150,000.

**Commerce.**—The value of the imports in 1893 was 68,235,874 silver pesos (1 peso = 91 cents); of the exports, 72,245,114 pesos. More than half the total value of exports represents nitrate. The chief imports are sugar, cattle, coal, and cloths. The values of the leading exports in 1892 were: Nitrate, 31,785,060 pesos; wheat, 6,196,457 pesos; iodine, 5,138,460 pesos; bar



copper, 5,076,922 pesos; silver bars, 5,017,390 pesos; leather, 814,328 pesos; gold bars, 683,638 pesos; manganese ore, 516,851 pesos; barley, 458,971 pesos; wool, 434,496 pesos; silver ore, 418,077 pesos; wheat flour, 273,171 pesos; beans, 177,567 pesos.

The trade with the principal countries is shown in the following table for 1890, giving the values of the imports from and exports to them in silver pesos:

COUNTRIES.	Imports.	Exports.
Great Britain .....	29,479,000	46,085,857
Germany .....	15,680,000	6,856,470
United States .....	5,217,000	8,540,075
France .....	6,845,000	2,324,455
Peru .....	2,293,000	2,164,725

**Navigation.**—There were entered in 1892 at Chilian ports 8,369 vessels of all kinds, of 9,001,369 tons, and cleared 8,371, of 8,923,222 tons. The tonnage entered of vessels in foreign commerce was 2,245,572, of which 40 per cent. was Chilian, and 30 per cent. English.

The merchant marine on Jan. 1, 1894, consisted of 137 vessels, of 102,199 tons. Of these, 39, of 43,741 tons were steam vessels.

**Communications.**—The length of railroads in 1892 was 1,735 miles, of which the Government owned 686 miles.

The Government in the beginning of 1894 had 6,965 miles of telegraphs, with 8,330 miles of wire. During 1893 there were 894,280 messages telegraphed. The railroads and companies had 4,500 miles of wire.

The postal traffic for 1892 was: Letters, 23,458,507; postal cards, circulars, etc., 1,740,771; newspapers and printed matter, 24,706,325. The receipts were \$851,893 and expenses \$842,194.

**The Army.**—The regular army consists of 7 regiments of infantry, 4 of cavalry, 3 of artillery, and the corps of engineers. The law of Feb. 2, 1892, restricts the number to 6,000 men. There are 526 regular army officers. The National Guard in 1894 consisted of 42,120 infantry and 8,970 artillery.

The Government has purchased a large number of Krupp cannon. The tactics, discipline, and equipment of the army have been improved under the direction of Gen. Körner, who in 1895 engaged the services of 26 other German officers.

**The Navy.**—The Chilian navy in the beginning of 1895 consisted of 1 battle ship, 1 armored coast guard, 1 armored cruiser, 4 second-class cruisers, 10 small cruisers and gunboats, and 11 torpedo boats. The "Capitan Prat," of 6,900 tons displacement, has a speed of 18½ knots, and besides side armor has strong barbettes in which are mounted 9½-inch Canet guns in the bow, the stern, and on either side, and 4 turrets in which are 8 4¾-inch quick-firing guns. The cruiser "Almirante Cochrane," of 3,500 tons, has 9-inch plates and carries 6 18-ton and 4 quick-firing guns. The deck-protected cruiser "Esmeralda," of 3,000 tons, carries 2 24-ton and 6 4-ton guns, and can steam 18 knots. The cruisers "Presidente Errazuriz" and "Presidente Pinto," of 2,080 tons, have a speed of 19 knots. This is surpassed by the new "Blanco Encalada," of 4,500 tons, launched at Elswick in September, 1893, which makes nearly 22 knots an hour with natural draught.

**Finances.**—The revenue for 1895 was estimated at 70,502,288 pesos in currency and £1,647,302 in gold (the paper peso was worth no more than 25 cents). The expenditures were estimated at 57,091,233 pesos in currency and £779,807 sterling. The annual interest on the debt payable abroad is £605,000. The capital of the external debt was £11,626,300 in May, 1895. The internal debt amounted to 6,597,114 pesos. A new foreign loan of £2,000,000 was authorized in May, 1895, guaranteed on the revenue from the nitrate deposits.

**Resumption of Specie Payments.**—A bill passed by Congress in 1892 provided for the redemption from Jan. 1, 1896, of 46,459,000 pesos of state and guaranteed bank notes at the rate of 24*d.* per peso. A conversion fund was amassed, amounting on July 1, 1894, to 10,855,000 pesos. It was intended to resume specie payments on July 1, 1896, paper currency to cease to be legal tender from Jan. 1, 1897. The paper peso in 1894 was worth on the average 1*s.* ¼*d.* in exchange. Very little gold has been coined, and none has remained in circulation. Another law of 1892 provided for a system of currency based on gold, which should come into use on July 1, 1895. Silver would not be legal tender for more than 20 pesos. The gold peso was to be the unit of value, the *doblon* or 5-peso piece having the same weight and fineness as the English sovereign. In 1895 some of the details of the plan of conversion were changed. It was decided to redeem the paper notes at the rate of 18*d.* per peso on and after June 1, 1895. The Government was empowered to coin silver in the space of three years to the amount of 10,000,000 pesos or dollars, 0.835 fine and weighing 20 grammes. The silver coins were made legal tender to the limit of \$50, but the Government treasury was obliged to receive them in any amount for taxes or other obligations, and also to redeem them in gold when presented at the mint. The new act, which passed both houses in May, provided for a system of bank currency guaranteed by the Government. Gold and silver coins and credits in Europe were provided for the resumption of specie payments on the day fixed. The proceeds of the new loan were applied to this operation, for which the public finances and foreign exchange were favorable, exports for the year having exceeded imports by 37,000,000 pesos and the revenue showing a surplus of 10,000,000 pesos or over. There was no great demand for the new gold, and exchange remained steady, but the gold began gradually to flow over to Europe.

**Cabinet Crisis.**—A reconstruction of the Cabinet occurred in April. Señor Prieto took the portfolio of Finance, Señor Errazuriz became Minister of War, and Señor Valdez y Valdez entered the Cabinet as Minister of Public Works. The Cabinet thus constituted was partly Liberal and partly Radical. The party of Balmaceda and the Liberals were disposed to enter into an electoral alliance for the coming presidential campaign. A Cabinet crisis resulted in July from the appointment by President Montt of diplomatic representatives abroad that were displeasing to the majority of the Senate. Señor McIver, one of the Radical leaders, declined to form a new Cabinet. Ismail Vergara, Presi-

dent of the House of Deputies, after making one attempt, would not undertake the task a second time. The crisis lasted nearly a month, while the conditions were being arranged for a fusion of the Liberal parties. One of the Radical chiefs, Señor Recabarren, then undertook to organize a ministry, which was completed on Aug. 1 as follows: Minister of the Interior, Dr. Recabarren; Minister of Foreign Affairs, Dr. Matte; Minister of Finance, Dr. McIver; Minister of War and Marine, Valdez y Valdez; Minister of Justice, Sanchez Fontecilla; Minister of Public Works, Davila Baeza. The new Government made the same promises that the ministry had that was overthrown, including pledges of noninterference in elections, conversion of the public debt, and the fulfillment of all treaty obligations. It was proposed to raise a loan of 20,000,000 pesos for national defenses and the development of the annexed provinces. A railroad is to be built to Tarapaca, and a harbor made at Constitucion, and Talcahuano, where the Government has constructed a great dry dock, is to be strongly fortified.

**Foreign Relations.**—A joint commission appointed to delimit the Argentine frontier came together in the summer of 1895, but made no progress in the actual work of delimitation.

The claims of British subjects for damages arising out of the civil war of 1891 were submitted, under the terms of a convention concluded on Sept. 28, 1893, to a mixed commission, which met on Oct. 24, 1894. Claimants had to present their memorials within six months from that date.

**CHINA**, an empire in eastern Asia. The Government is an absolute monarchy regulated by historical precedents and the Confucian principles of morality. The Manchu or Tsing dynasty has reigned since 1644. The Emperor chooses his heir from among the sons of his first three wives. The present Emperor, who reigns under the style of Kwangsu, which means continuation of splendor, was proclaimed irregularly, his uncle and predecessor having died a minor without leaving a legal successor. He was born Aug. 2, 1872, being the son of Prince Chun, the seventh son of the Emperor Tarkwang, and came to the throne after the death of the Emperor Tsaichun, Jan. 12, 1875, under the direction of his aunt and adoptive mother, the Empress Dowager Tsu-Hsi, mother of the late Emperor, who retained her title of co-Regent, becoming sole Regent upon the death of the Eastern Empress in 1881, and continued to direct the affairs of the empire until the young Emperor became of age and married, and on March 4, 1889, assumed the Government. Ever since then the Empress Dowager has had the final voice in important decisions.

The offices in the Imperial Government and in the administration of the provinces are conferred upon mandarins who show in examinations excellent scholarship and literary style formed on the models of the classical writers of history, poetry, and political and ethical philosophy. Only the *literati*, men who have passed the literary examinations, of which there are many grades, are eligible to civil office; but appointments and promotions depend not merely on literary proficiency, but upon personal fitness and proved administrative ability, often too, it

is said, upon favoritism. There is a Tsung-Tu, or Governor-General, over the capital province of Pechili and over the Liang-Kiang, Min-Che, Liang-Hu, Chan-Kan, Liang-Kwang, and Yun-Kwe groups of provinces and over Szechuen, while each province has its Sun-Fu, or Governor. These officers and the local officials are almost independent of the Imperial Government, which has little to do with the people in general, but they are held accountable by the central authorities for their manner of administration, and may be removed at any time and degraded in official rank or punished even with decapitation for wrongdoing, while on the other hand a virtuous and successful administration brings rewards.

**Finances.**—The revenue of the Imperial Government is derived from a land tax yielding about 20,000,000 haikwan taels a year, the rice tribute worth, on the average, 2,800,000 taels, the salt levy estimated at 9,600,000 taels, the native custom yielding 6,000,000 taels, a transit levy on opium and other goods that gives about 11,000,000 taels, licenses producing 2,000,000 taels, and the maritime customs under foreign supervision, to which an additional tax on opium has been added which importers have the option of paying in lieu of *likin* or transit duties. The total revenue is supposed to be from 75,000,000 to 78,000,000 taels a year. The customhouse returns are the only ones that are officially published. The receipts from maritime customs in 1893 amounted to 21,989,300 haikwan taels, including 5,362,733 taels from the commuted *likin* tax on opium. In emergencies the Government has compelled wealthy officials and others to contribute money for the relief of its necessities. The sale of brevet titles is another occasional source of revenue.

The first foreign loans, amounting to over £2,225,000 sterling, were contracted at 8 per cent. in 1874 and 1876 and secured by the customs. In 1884 and 1886 silver loans amounting to £3,755,000 were obtained, and in 1887 a loan of £250,000 was raised in Germany. Early in 1895 a war loan of £3,000,000 was obtained.

**Commerce.**—The imports for 1893 were officially valued at 151,362,819 haikwan taels (the exchange value of the tael was nearly \$1), including 1,964,000 taels of re-exports, and the exports at 116,632,311 taels. Allowance being made for costs incurred after landing and for expenses of shipping to be added, the value of the imports was about 129,250,000 and of the exports 131,950,000 taels. This does not include a considerable trade that is carried on in Chinese junks not subject to the control of the maritime customs. The direct trade with various countries was as follows:

COUNTRIES.	Imports.	Exports.
Hong-Kong .....	80,891,000	48,290,000
Great Britain .....	28,156,000	11,668,000
East India .....	16,740,000	2,735,000
Continent of Europe .....	5,216,000	15,855,000
United States .....	5,444,000	11,726,000
Japan .....	7,852,000	9,838,000
Siberia .....	180,000	6,346,000
Russia in Europe .....	704,000	3,038,000
Straits Settlements .....	2,448,000	1,792,000
Macao .....	2,864,000	2,046,000
Other countries .....	2,832,000	3,798,000
Total .....	153,327,000	116,632,000



The following were the values of the principal imports in 1893: Opium, 31,691,399 taels; cotton cloth, 27,275,000 taels; cotton yarns, 17,863,000 taels; rice, 12,965,000 taels; sugar, 7,429,000 taels; kerosene, 5,571,195 taels; woolen manufactures, 4,587,006 taels; fish, 3,111,000 taels; iron, 2,475,000 taels; timber 2,214,000 taels; coal, 2,096,000 taels; tin, 1,944,000 taels; matches, 1,540,000 taels. The principal exports and their values were as follow: Tea, 50,558,723 taels; raw silk, 29,320,000 taels; silk, goods, 7,847,000 taels; cotton, 6,166,000 taels; beans, 2,522,000 taels; straw braid, 2,429,000 taels; sugar, 2,319,000 taels; paper, 1,830,000 taels; matting, 1,829,000 taels; clothing and shoes, 1,757,000 taels; wool, 1,324,000 taels; skins, 1,299,000 taels; tobacco, 1,204,000 taels; pottery, 1,178,000 taels.

The total export of tea in 1893 was 1,820,831 piculs (1 picul = 133½ pounds), of which 367,218 piculs were shipped to England, 683,744 to Russia, 342,287 to the United States, 169,979 to Hong-Kong, and 89,668 to Australia.

**Navigation.**—During 1893 there were 37,902 vessels, of 29,318,811 tons, entered and cleared at Chinese ports, of which 19,365, of 19,203,978 tons, were British; 14,270, of 6,829,950 tons, Chinese; 2,142, of 1,508,015 tons, German; 623, of 566,379 tons, Japanese; 167, of 259,687 tons, French; and 63, of 78,175 tons, American. Of the total number, 29,761, of 28,277,050 tons, were steamers.

**Communications.**—The only railroads yet built are the line from the Kaiping coal mines to the Petang river, and a coal road on the island of Formosa.

Telegraphs now connect all the principal cities and the military posts on the frontiers with the capital. The telegraph system joins the British line at Port Arthur and the Russian transcontinental telegraph at its terminus in the Amur district. In accordance with a convention signed at Tientsin on Sept. 6, 1894, a junction has been made also with the lines of Burmah and British India.

**The Army.**—The Chinese military forces consist of the Tartar army of Eight Banners, employed to guard the capital province and garrison the chief cities, and the Ying-Ping or national army. The Manchus or soldiers of the Eight Banners enjoy various privileges. They number about 288,000 men, of whom not more than 90,000, including the Pekin guard of 13,000, are instructed in modern warfare and provided with European weapons. The men forming the other forces are poorly paid and fed. They are recruited from the lowest classes, for the military profession is generally despised by the Chinese. Each province has its independent military organization, of which there are 23, under the direction of the Governors, to whom, however, the Tartar generals are not subordinate. None of the formations are kept up to their nominal strength, and in many cases they are mere skeleton organizations. Officers have been known to pocket the pay of regiments that do not exist, but which can be improvised by hiring coolies when the inspecting officers make their rounds. Most of the troops sent to the seat of war to fight the Japanese were raw levies recruited from the dregs of the population and

often pressed into the service. They had not learned to handle their weapons, which were often defective, and, as their pay was usually in arrears and their food supply irregular, they had no heart to fight. Often they killed their own officers and ran away before the enemy came in sight. The national troops or army of the Green Flag have been estimated at 539,000 men. The Mongolian militia numbers 117,000, the Tibetan militia 64,000.

**The Navy.**—The Pei-Yang or northern squadron, the only efficient naval force, was almost entirely destroyed or captured during the war with Japan. The Foochow squadron consists of 4 unprotected steel cruisers of 2,500 tons or under, 3 gunboats, 4 armed transports, and 2 torpedo boats. The "Chao-Yung," a protected schooner belonging to this squadron, was added to the Pei-Yang squadron, and was rammed and sunk by her consort, the "Tsi-Yuen" while endeavoring to escape from the battle of Hai-Yun-Tao or the Yalu on Sept. 17, 1894. Another cruiser that joined the northern fleet, the "Yang-Wei," was run ashore to avoid sinking during the same engagement. The Canton flotilla consists of 17 gunboats and 20 torpedo boats. The Shanghai flotilla has 1 armored frigate, 1 gunboat, 6 floating batteries, and 3 transports. The three best ships of this squadron were the "Kwang-Yi," the "Kwang-Chia," and the "Kwang-Ping," which were attached to the northern squadron at the beginning of the war. Of these, the "Kwang-Yi" was so battered at the battle of Asan that she was beached and was afterward destroyed by the Japanese; the "Kwang-Chia" was run ashore in attempting to escape from the battle of the Yalu, and was blown up by the Japanese; and the "Kwang-Ping" was surrendered at Wei-Hai-Wei. The vessels of the Pei-Yang squadron that were lost in action during the war were: The "Tsan-Cheng," dispatch vessel, taken off Asan, July 25, 1894; "King-Yuen," belted barbette cruiser, sunk at the battle of the Yalu; a torpedo boat taken at the fall of Port Arthur; "Ting-Yuen," armor-clad battleship, torpedoed at Wei-Hai-Wei, Feb. 4, 1895; "Lai-Yuen," belted barbette cruiser, torpedoed at Wei-Hai-Wei, Feb. 5, 1895; "Wei-Yuen," training ship, sunk at Wei-Hai-Wei, Feb. 5, 1895; 5 torpedo boats destroyed and 8 captured after an unsuccessful attack on the blockading squadron at Wei-Hai-Wei, Feb. 7, 1895; "Ching-Yuen," protected cruiser, sunk at Wei-Hai-Wei, Feb. 9, 1895. The following vessels were surrendered at the capitulation of Wei-Hai-Wei, Feb. 16, 1895: "Chen-Yuen," armor-clad battle ship; "Tsi-Yuen," armored ram turret ship; "Ping-Yuen," ironclad coast-guard; "Chen-Pien," "Chen-Pei," "Chen-Chung," "Chen-Nan," "Chen-Tung," and "Chen-Hsi," gunboats.

**The Japanese in Manchuria.**—The army of Marshal Yamagata, commanded after Yamagata's return to Japan by Lieut.-Gen. Nodzu, after crossing the Yalu in October, 1894, separated into two equal divisions, each 12,500 strong. The right wing moved northward along the Mukden road as far as the Fen-Shai-Ling pass. The left wing marched westward with the object of establishing communications with the second army, 22,000 strong, that had been sent by sea

under Marshal Oyama to take Port Arthur and advance up the Liao-Tung peninsula and onward, when it joined the other army, to Peking. Though the movement toward Mukden was of the nature of a feint, intended merely to hold the Chinese in check and prevent their co-operating with the forces in the south, the Chinese massed 25,000 troops in front of Mukden to defend the passes leading to the sacred city and sent down Gen. I with the army that guarded the Amur frontier to break through the Japanese line of communications, in the expectation that these would extend from the Yalu river to Mukden. Maj.-Gen. Tatsumi, who commanded the van of the right wing, broke and dispersed I's forces and intrenched himself at Tsao-Ho-Ken. The left wing of Gen. Nodzu's army, commanded by Lieut.-Gen. Katsura, advanced to Siu-Yen, driving the Chinese troops of Gen. Seh and Gen. Tang out of that place, as they had previously out of Antung and Taku-Shan. In December the march was continued in the direction of Hai-Tcheng, whither the Chinese had retreated. That place was occupied on Dec. 13, 1894, by Maj.-Gen. Oseko's column after he had defeated the Chinese at Simu-Tcheng. Extending his line southward to Kao-Khan, he established communications with the advanced guard of Marshal Oyama's army, which occupied Foochow on Dec. 5, and captured Kaiphing on Jan. 10, 1895. The united Japanese armies were in face of a force of about 60,000 Chinese, consisting partly of the troops that had been fighting Gen. Nodzu's army and retreating all the way from the Yalu river, partly of Gen. Sung's army that had fallen back before Marshal Oyama, partly of the garrison of Niuchuang, and partly of a Mongolian detachment that had recently arrived. These forces were posted to guard Niuchuang and its port and the roads leading into China proper.

The Japanese troops that occupied Foochow under the command of Gen. Nogi, were transported by sea from Port Arthur. Kaiphing was taken after a severe fight with Gen. Seh's garrison of 6,000 men, who were attacked on both flanks. The Japanese losses were 46 killed and 263 wounded. About 2,000 Chinese were killed or wounded. A force of 10,000 troops was coming up to re-enforce Gen. Seh when the retreat began, and meeting the retreating soldiers it faced about and retired. The frost and snow made the movements of the invaders slow and difficult. Re-enforcements were sent to Gen. Sung, who reported that his force was at the mercy of the Japanese. The Japanese made no further advance, and the Peking authorities were led to believe that they were weakened by disease and exposure, and that with new troops and a new commander the fortunes of war would change. Therefore an embassy that was about to depart for Japan to sue for peace was detained.

When Prince Kung was called to power, after the dismissal of Li-Hung-Chang from all his functions except the Viceroyalty of Pechili, he endeavored to introduce reforms, and asked the advice of the Viceroy. Every scheme that was suggested was vetoed by the ignorant and incompetent Grand Council. But after Prince Kung was made the head of this body, while retaining the presidency of the Tsung-Li-Ya-

men, the Viceroy Li was restored in part to his former position of dignity and influence. The Empress Dowager gave support to the efforts of Prince Kung, her former enemy, to extricate China from its difficulties with the help of her old ally. Gen. von Hannecken was intrusted with the reorganization of the army.

In the 14 land battles and 2 naval engagements fought up to the end of 1894 the Japanese lost 430 killed and 1,712 wounded, while the Chinese lost 6,676 killed and 9,696 wounded. The war material taken by the Japanese included 670 Krupp guns, with 2,601,741 rounds of ammunition, and 7,645 rifles, with 77,458,785 rounds, 3,326 tents, and 477 stands of colors. Over 90,000 bushels of rice and grain also fell into their hands, and about \$1,000,000 in gold and silver. The total plunder was valued at \$7,312,000, and the buildings, armament, and plant at Port Arthur were estimated at \$70,000,000. The naval prizes were 2 gunboats and a steel cruiser, besides steam launches, junks, and sailing vessels. One ironclad and 3 steel cruisers had been sunk. The territory occupied was double the area of Japan.

Liu-Kun-Yih, Viceroy of Liang-Kiang, was appointed by an imperial edict commander-in-chief of all the Chinese forces. Gens. Huan, Chao, Wei-ju, and Chang, who had lost battles, went into hiding to escape being handed over to the Board of Punishments. Gen. Wei-ju was afterward captured by Li-Hung-Chang, and was beheaded for cowardice and extortion.

On Jan. 17 two Chinese forces marched respectively from Niuchuang and Liao-Yang, about 14,000 strong, against the intrenched position of the Japanese at Hai-Tcheng. They opened fire with artillery, but Gen. Katsura soon took the offensive and drove back the Chinese, capturing 5 of their guns. Gens. Chang and Tui, the two commanders, were killed in the battle. On Jan. 22 another attack was made by 12,000 men from Liao-Yang, who were beaten by a flank movement with heavy losses. Gen. Nodzu arranged the defense in such a manner as to draw the Chinese, who were led by the Tartar Gen. Chang-Shun, within 650 yards of his line, where they were suddenly attacked in the right flank by a brigade of infantry and three batteries. Gen. Seh advanced on the same day from the port of Niuchuang with 10,000 men and a strong force of artillery to attempt the recapture of Kaiphing. An artillery engagement took place on Jan. 24, which ended in the rout of the Chinese, who worked their guns well until they were demoralized by the shrapnel bursting among them and killing a great number, while the Japanese gunners suffered little, being under cover.

On Feb. 16 the Chinese, 16,000 strong, unexpectedly attacked the position at Hai-Tcheng, and were beaten by the more accurate artillery fire of the Japanese with a loss of over 150 men. On the 21st another attack was made by 12,000 men of all arms on three sides of the Japanese position, but the Chinese were never able to come to close quarters owing to the steady and well-directed fire of Gen. Nodzu's artillery. On the 24th an attempt was made by 7,000 men to surprise the Japanese left, and later in the day an attack



was delivered on the main position by 13,000 men, with 20 guns. After an artillery duel the Japanese advanced from their intrenchments, and the Chinese held their ground valiantly and finally withdrew in good order after inflicting a loss of 270 upon the enemy.

**The Siege of Wei-Hai-Wei.**—In the second week of January, 1895, a third army, numbering about 25,000 men, set out from Japan in 50 transports. The troops landed at various points on the Shan-Tung peninsula with the object of closing in upon the naval fortress of Wei-Hai-Wei and capturing it by the same tactics that were pursued at Port Arthur. Marshal Oyama crossed over with his staff from Port Arthur and assumed direction of the operations.

On Jan. 18 and 19 the Japanese ships bombarded Tung-Chow in order to divert the attention of the Chinese from the real objective. On the following day the main body under Gen. Sakuma landed in the bay of Yung-Tcheng, 28 miles east of Wei-Hai-Wei. Another landing was effected on Jan. 24 at Ninghai, at the same distance on the other side of the great naval stronghold, where the Chinese fleet lay at anchor under the protection of the forts.

A force of 500 men, with 4 Krupp guns, had been sent to Yung-Tcheng from Wei-Hai-Wei when the Japanese war ships were seen off the promontory. The first boatloads of Japanese were landed unobserved in a snowstorm, and when the Chinese opened fire on the boats the guns of the war ships soon compelled them to abandon their position, and a bayonet charge put an end to all resistance. In their flight they left behind their cannon. The town of Yung-Tcheng was occupied after a show of resistance, with a large quantity of arms, ammunition, and stores.

A Japanese fleet, consisting of 20 war ships, 19 transports, and 20 torpedo boats, took its station, on Jan. 26, at the entrance of Wei-Hai-Wei harbor. It was many days before the heavy guns and all the supplies and materials for the siege were got on shore. The Japanese then advanced, and drew a close cordon around the Chinese stronghold on the land side. On Jan. 26 and 27 reconnaissances were made, and the range was tested by the large and small guns of the fleet.

On Jan. 30 the Japanese advanced under cover of the night to attack the eastern forts of Wei-Hai-Wei. The Chinese had apparently no pickets out, and seemed to be taken completely by surprise when the enemy's batteries opened fire upon the works at daybreak.

A part of the Sendai division took up an elevated position opposite Rankako Shan, a hill fort commanding the eastern land approach to Wei-Hai-Wei. At daybreak two batteries opened fire upon their trenches, and, after a brisk cannonade on both sides, the Chinese guns, which had distributed shells over a wide area instead of concentrating their fire upon the attacking batteries, began to weaken. Then the infantry, which had worked its way round through ravines to within 500 yards of the position, poured a hail of musketry into the trenches and charged the already fleeing Chinamen. Four Krupp field guns were captured.

In the center and on the right the main body

of the Sendai division and the men of the Kumamoto division had passed by this fort to take up stations on the hills overlooking the sea batteries. Two redoubts recently built to command the landward approach were first stormed by the Kumamoto men, who immediately turned the guns on the Chinese forts, and were shelled by them in return, and by the island forts and the Chinese men-of-war, none of which could get the range. The Japanese cruisers "Naniwa," "Akitsushima," and "Katsuragi" opened fire at long range to draw the fire of the Chinese off the land forces, and were answered by the western batteries. The magazine of the northernmost but one of the 8 modern forts was exploded by a bursting shell, demolishing the structure and killing all the defenders. The Kumamoto brigade, under Gen. Otera, then rushed upon one fort after another, in spite of the shelling from the harbor. The Chinese, unnerved by the terrific explosion, fled as soon as they saw bayonets in the distance from one fort to the next, and then along the beach to Wei-Hai-Wei. A second fort they blew up themselves, and they had laid trains to explode the remaining magazines, and thus dismantle all the guns, but the Japanese came in time to put out the fuse. Gen. Otera was killed by a fragment of a shell from the Chinese war ships, which steamed slowly up and down in front of the forts, firing whenever the enemy presented a mark. The Kumamoto men pursued the fleeing Chinese, and the Sendai men joined them, coming down from the hills. As the pursuers emerged from the hills into a broad, treeless plain, a Chinese gunboat that was waiting for them killed 80 with its machine guns before they could get under cover. There were 11 powerful pieces of artillery left, which the Japanese could use against the island forts. When expert gunners were landed from the Japanese fleet to work the 25-ton guns, the Chinese ships ceased the bombardment of the forts and sought the shelter of the island of Liu-Kung-Tao. The Kumamoto brigade that did all the fighting lost only 30 or 40 men in taking the forts, the rest of the 233 men killed were struck by shot and shell from the ships and the island forts. The main body of Marshal Oyama's army had taken the route over the steep heights back of the forts in the expectation of finding the Chinese posted there in force, but they met none of the enemy.

The Chinese troops after this battle had no disposition to meet the Japanese again. Some of those who fled to Chefoo were beheaded, as a warning to the rest, but this had no effect. The whole land force, about 9,000 men, melted away, and Admiral Ting sent men to disable such of the guns in the western forts as could be used effectively against the island and the ships, which were not as well sheltered from these forts as they were from the eastern batteries. When the garrison of the western forts fled *en masse*, Gen. Tai, one of the commanders, went over to Liu-Kung-Tao and there committed suicide. The Japanese commander, not aware of the flight of the army, laid his plans cautiously to attack the town of Wei-Hai-Wei from the rear. The vanguard of the Sendai division, marching through the drifting snow, met and attacked the retreating Chinese on the Chefoo road Feb. 2,

and had a hard fight against superior numbers. When the troops approached Wei-Hai-Wei, where they expected to find the Chinese army re-enforced by 8,000 troops from Chefoo, they found instead that the place had been abandoned. They occupied the town and the adjacent western forts on Feb 2. On Feb. 3 a heavy bombardment of Liu-Kung-Tao was begun on sea and land. The ironclad "Ting-Yuen" and the cruiser "Lai-Yuen," with two gunboats, took an active part in the defense, leaving the shelter of the island and drawing the fire of the Japanese cruisers. Fort Zhih was greatly damaged by the Japanese shells, and some of the Chinese vessels were hit. The Japanese torpedo flotilla made a first unsuccessful attempt to enter the harbor in the night of Jan. 30. The Japanese gunners in the western forts mistook them for Chinese craft and began firing, thus calling the attention of the Chinese, and compelling the torpedo fleet to retreat. Two nights later they tried again to steal in, but found that the Chinese scouts were this time on the watch. The only place where they could pass the booms and sunken mines was a narrow eddying passage close inshore. If it had not been for the booms and torpedo mines at the entrance of the harbor, the "Ting-Yuen" and "Chen-Yuen" armorclads could have dashed out and engaged the Japanese cruisers with a fair chance of success. The bombardment was renewed on Feb. 4, and in the night the Japanese torpedo boats succeeded in creeping into the harbor and disabled the "Ting-Yuen," with the loss of one torpedo boat and injury to others. The firing was continued the next day, and at night the torpedo boats again entered the harbor and, having cut the boom, they returned night after night. They attacked and sank the "Lai-Yuen" and a gunboat, and disabled the "Chen-Yuen." Another ship, the "Wei-Yuen," was sunk by the fire from the eastern forts. A fort on the island of Jitsu that had been very active was demolished on the 8th by the explosion of the magazine. The cannonading was continued day after day. The Chinese battered the land forts till three of them were practically destroyed, but they could not touch the Japanese ships, which the Japanese commander took extreme care not to expose to danger. On the 7th the Japanese opened fire at daybreak on the north side of the island, intending to cover a landing. As the island could no longer be defended, Admiral Ting for the first time attempted a counter-attack. He sent out the entire flotilla of torpedo boats by the western channel, hoping to take the enemy by surprise. Two cruisers also made their way out. The Japanese were on the alert, and after the torpedo boats had passed the boom the "Yoshino," "Takachiho," "Akitsu," "Chiyoda," and "Naniwa" appeared at once. The torpedo boats, which were proceeding in two lines, broke their order and put back at full speed, but they were unable to reach the passage, and were almost surrounded by the cruisers, most of which could steam 20 knots to their 18. These soon had their quick-firing guns leveled at the torpedo boats, which broke through the line before it closed in upon them and fled westward near the shore, badly damaged by the shots from machine guns and hotly pursued by the cruisers. Seven of

the torpedo boats were overtaken and captured or sunk, and the remaining 6 were driven into the inlets and abandoned, their crews making their way across the ice to the beach, where most of them were taken prisoners. Of the 13 boats 8 were found to be sufficiently seaworthy and were added to the Japanese fleet. The boom where the Japanese had made the first breach was cut away, so that free ingress was assured at any stage of the tide. The "Ching-Yuen" went down on Jan. 9, struck by a shell from the eastern forts. On the following day the Japanese got a mortar battery into position in the western forts, and partly silenced the fort at Koto and hindered the ships by an exceedingly accurate fire of shrapnel. The big guns of the Chinese were useless, owing to poor gunnery and adulterated powder.

All Admiral Ting's plans of defense had failed. The land forces, which could have guarded the approaches to Wei-Hai-Wei against much superior numbers, had run away without first dismantling the forts. Admiral Ting had decided to dismantle both forts before the fighting began, but the Chinese general refused to allow it, and telegraphed to Peking a report of treachery. After they had fallen into Japanese hands, the guns of the eastern forts prevented the Chinese ships from guarding the harbor obstructions, and the Japanese torpedo boats were therefore enabled to destroy the ships one after another. After the loss of the torpedo flotilla and of more than half the fleet, the fall of the fortress could not be delayed many days.

In a letter addressed on Jan. 20 to Admiral Ting, a friend of many years' standing, by Vice-Admiral Ito, signed also by Marshal Oyama, the Japanese commander begged the Chinese admiral to surrender and take refuge in Japan until he could return to China to take a leading part in the reformation of his country, which could no longer hold its place in the world if it continued to pursue ancient methods and to confide its destinies to literary scholars trained only in the traditions of a thousand years ago. To this letter Admiral Ting returned no answer, deeming the proposals dishonorable. On Feb. 12 he addressed to Admiral Ito the following letter:

I received the letter of suggestions addressed to me by the officer commanding the united Japanese squadrons, but did not reply because our countries were at war. Now, however, having fought resolutely, having had my ships sunk and my men decimated, I am minded to give up the contest, and to ask for a cessation of hostilities in order to save the lives of my people. I will surrender to Japan the ships of war now in Wei-Hai-Wei harbor, together with the Liukung island forts and the armament, provided that my request be complied with—namely, that the lives of all persons connected with the army and navy, Chinese and foreign, be uninjured, and that they be allowed to return to their homes. If this be acceded to, the commander in chief of the British naval squadron will become guarantor. I submit this proposal, and shall be glad to have a speedy reply.

Admiral Ito at once accepted these terms of surrender and dispensed with the foreign guarantee, writing that he placed implicit reliance on Admiral Ting's assurances as an officer. After writing a second letter asking to have the date of the surrender postponed till Feb. 16,



Admiral Ting committed suicide by poisoning. His example was followed by Gen. Chang, commander of the military garrison of 2,000 men, and by Commodore Liu. Admiral Ito restored one of the men-of-war in order that the bodies of the three officers might be carried home in state, and when the vessel steamed out of the harbor the Japanese ships manned their yards and fired a salute in memory of the brave Chinese commander. Admiral John McClure, a Scotchman, who had been transferred from the Chinese civil service to the navy, carried out the terms of the surrender. The "Chen-Yuen" and six gunboats were all that remained of the Chinese fleet. The foreigners in the fort were released with the exception of John Wilde, *alias* William Howie, an American citizen who had been taken off a French merchant vessel at Kobe in November, 1894, while on the way to China to employ a new explosive against the Japanese fleet. Having broken his parole, he was retained for trial. After destroying the land forts at Wei-Hai-Wei, the Japanese withdrew from the Shan-Tung peninsula, leaving a garrison only on the island of Liu-Kung-Tao, where the armament was left in position.

**The Capture of Niuchuang.**—The Japanese positions at Hai-Tcheng and Kaiphing became insecure after the Chinese had been re-enforced by fresh troops from the interior of China and from Mongolia, of better fighting qualities than most of those that the Japanese had encountered hitherto. Gen. Nodzu determined, therefore, after the forces that had been engaged at Wei-Hai-Wei were freed and had returned to Talienwan, to assume the aggressive again. On Feb. 27 the Chinese were driven out of their advanced positions in the direction of Liao-Yang, at the cost of 110 Japanese killed and wounded, thus rendering the right flank secure, and on March 1 a general advance was made upon Niuchuang by the united forces of Gen. Nodzu and Gen. Yamajio. The attack was made simultaneously on the north and southeast at dawn on March 4. After a bombardment of two hours the Japanese infantry entered the city, where the Chinese troops fought desperately, but were gradually driven back from street to street until at midnight the Japanese were in possession of the town. Houses were blown up with torpedoes, and the town was burned and totally ruined. The Hunan troops of Gen. Wu-Ta-Cheng fled at the first encounter, leaving the brunt of the fighting to the forces of Gen. Sung-Chingo. The Chinese left behind 1,880 killed and wounded, 600 prisoners, 18 guns, many banners, and great quantities of rifles, ammunition, and provisions. The Japanese loss was 206 killed and wounded.

On the same day the Chinese from Ying-Kow or Ying-Tse, the port of Niuchuang, attacked Gen. Nogi's position at Kaiphing, with 10,000 men. The Japanese repulsed them easily, and, following them up, attacked and captured Ying-Kow on March 6 with trifling loss. The garrison of the town fled at first sight of the Japanese; the artillerists in the fort fired a few ineffectual shots. The troops of Gen. Sung retired across the Liao river westward. The first and second armies were now joined at last. Lieut.-Gen. Katsura on the right advanced toward Liao-

Yang. Gen. Nodzu, now promoted field marshal, pursued Gen. Sung's retreating forces and attacked them on March 9 at Thien-Chuang-Thai, or Denshodai, killing about 600, no quarter being given to combatants. Gen. Wu with 20,000 men had again decamped, leaving Gen. Sung to defend the place with 8,000. This town, which had contained 50,000 inhabitants and was a depot of war material, was burned to the ground and everything was destroyed except 35 field guns that were taken.

**Peace Negotiations.**—In spite of the continuous triumphs of Japanese arms and the military helplessness of China, the Pekin Government preserved its attitude of proud superiority. It assumed to place Japan in the position of suing for peace by giving precedence to the proposition of Minister Dun at Tokyo over that made by Minister Denby at Pekin. After the dismissal of the envoy Dietering, who went to Hiroshima without powers of any kind, China requested an armistice, which was refused. Chang-Yen-Huan, late minister to the United States, and Shao-Yu-Lien, Governor of Formosa, were then named as envoys. When they arrived at Hiroshima and met the Japanese Prime Minister and Minister of Foreign Affairs to exchange credentials, it was found that the documents that they brought did not state the subject of negotiation nor confer power to conclude or sign any treaty, but only to report to the Tsung-Li-Yamen for instructions. The Japanese plenipotentiaries refused to enter into discussion with them, and they were escorted to their ship on Feb. 3 and sent home.

After Wei-Hai-Wei had fallen and the Japanese army was preparing to advance to the Great Wall and onward to Pekin as soon as the ice should break, the authorities at Pekin first listened to the enemies of Li-Hung-Chang, who laid to his charge the political demoralization and military impotency of the country. The Empress Dowager, his old political ally, could not save him from disgrace. He was stripped of his honors and of all his offices save the Viceroyalty of Chili. One learned memorialist urged that, since repeating rifles had proved useless, in the hands of Chinese and Manchu soldiers they should be armed with jingals, with which they had conquered their enemies of old. The court at Pekin did not know that the Chinese were losing until Sung and Wu retreated from Niuchuang. The members of the imperial family were then convinced and lost confidence in their conservative advisers, who had no practical plan to save the capital and the dynasty. When Prince Kung, the Emperor's uncle, who had been recalled to the head of the Tsung-Li-Yamen, was made chief of the Board of Counsel also, he was persuaded to restore Li-Hung-Chang, once his political adversary, to his former rank and dignities, and to send him, as the only statesman well versed in the forms and conditions of international dealings, with full powers to conclude peace on the most honorable terms that could be obtained. A request was made that Japanese commissioners might meet Li-Hung-Chang at Port Arthur, to which the Japanese Government replied with a refusal to treat anywhere but on Japanese soil. Accompanied by Li-Ching-Fong, late minister to Japan, after-

ward made an associate plenipotentiary, and by an American, John W. Foster, as legal adviser, the Chinese plenipotentiary arrived in Shimoneseiki on March 19. This port was chosen for the conferences because the Chinese could there communicate directly with their Government by cable. As conditions for an armistice the Japanese Government first demanded the surrender of Taku, with its forts Tientsin and Shan-Hai-Kwan as a guarantee, but Li would not accede to this, and even sought to obtain a promise that the Japanese would not advance upon Taku or Shan-Hai-Kwan pending the negotiations, lest the confusion and alarm that such a movement would produce at the capital should prevent the conclusion of an honorable peace. Count Ito would not agree to an armistice except on the conditions named, and at the next meeting, on March 24, informed the Chinese envoy of the intention of the Japanese troops to occupy Formosa.

The war party in Japan was agitating against the conclusion of peace before the Japanese army entered Peking. When Li-Hung-Chang was returning from this second meeting a young fanatical patriot named Koyama, one of the class of political desperadoes called Soshis, shot him with a pistol, the bullet penetrating his upper jaw. In consequence of this attempted assassination of the Chinese envoy the Mikado, on March 30, proclaimed an unconditional armistice, with the exclusion of Formosa. The wound healed readily.

On April 1 the Japanese plenipotentiaries submitted the first draft of a treaty, providing for the independence of Korea, cession of Manchuria, Formosa, and the Pescadores, the payment of an indemnity of 300,000,000 taels, the opening of 7 new treaty ports, the abolition of the *likin* tax, the free navigation of certain water ways, the removal of the bar in the Woosung river, and the temporary occupation of Wei-Hai-Wei and Mukden. The Chinese plenipotentiaries prepared a counter-draft, in which it was proposed that China and Japan should recognize and guarantee the neutrality of Korea, that the cession of territory should be reduced to the Yalu district of Manchuria and the Pescadores, and that the war indemnity should be 100,000,000 taels. Eventually Li-Hung-Chang gave way on most of the disputed points.

On April 10 the Japanese Premier submitted to the Viceroy Li, then sufficiently recovered to attend the conference, a new draft containing the maximum concessions that Count Ito was willing to give. After exhausting every argument, and protesting that no lasting and sincere peace would follow, and that the European powers would not permit their interests to be thus imperiled, Li-Hung-Chang was forced to accept the Japanese ultimatum.

**Treaty of Shimoneseiki.**—A treaty of peace was signed on April 17 by Li-Hung-Chang and Li-Ching-Fong in behalf of China and by Count Ito and Viscount Mutsu, the Japanese Premier and the Minister of Foreign Affairs, in behalf of Japan. China, in the first article, recognized the complete independence of Korea, and agreed that the payment of tribute and the performance of ceremonies and formalities by Korea to China in derogation of such independence should cease

for the future. In the second article China ceded to Japan in perpetuity and full sovereignty, together with all fortifications, arsenals, and public property therein, the southern part of the province of Feng-Tien, the country included between the Yalu as far as the mouth of the river Anping and the Liao up to Ying-Kow, the boundary running through Feng-Huang and Hai-Tcheng; also the island of Formosa and the Pescadore group of islands. The part of Manchuria ceded was that which the Japanese armies had overrun and occupied, including the Regent's Sword and Port Arthur. The third article provided for the demarcation of the boundaries in Manchuria by a joint commission. The fourth article fixed the war indemnity to be paid by China to Japan at 200,000,000 kuping taels, of which 50,000,000 taels were to be paid in six months, an equal sum at the end of twelve months, and the remainder in six annual installments of the same amount, with interest at 5 per cent. on all unpaid portions from the date the first installment was due, China to have the right to forestall the dates of payment, and all interest to be waived in case the whole indemnity should be paid within three years. The fifth article provided for the emigration within two years of inhabitants of the ceded territories who should not desire to become Japanese subjects; also for the transfer of Formosa within two months from the exchange of ratifications. The sixth article bound China to appoint immediately plenipotentiaries to conclude with Japan a new treaty of commerce and navigation, and a convention to regulate frontier intercourse and trade on the basis of the treaties and conventions subsisting between China and European powers, Japan to receive most-favored-nation treatment pending the conclusion of such treaty and convention. China agreed, in addition, to open within six months as new treaty ports Shashih, in Hupeh, Chung-King, in Szechuen, Suchow, in Kiangsu, and Hangchow, in Chekiang, and to permit Japan to station consuls in these places; also to allow vessels under the Japanese flag to convey passengers and cargo on the upper Yangtse river between Ichang and Chun-King, and on the Woosung river and the canal from Shanghai to Suchow and Hangchow; furthermore, to grant the right to Japanese subjects purchasing goods or produce in the interior of China to rent or hire warehouses without the payment of any taxes or exactions; and, finally, to allow Japanese subjects to engage freely in all kinds of manufacturing industries in the open cities, towns, and ports of China, and to import all kinds of machinery, paying only the stipulated import duties thereon, and on the manufactured products only such island transit dues and other charges as are levied on imported merchandise. The seventh article provided for the evacuation by the armies of Japan within three months of China, excepting Wei-Hai-Wei, which, the eighth article provides, shall be temporarily occupied as a guarantee until the first two installments of the indemnity shall have been paid, and shall then be evacuated, provided the Chinese Government makes arrangements for pledging the customs revenue as security for the remaining part of the indemnity. The ninth article provides for the restoration of prisoners of war, China under-



taking not to ill treat or punish them on their return, and to release all Japanese subjects accused of being spies or charged with other military offenses, nor to punish any Chinese subjects who had been compromised by relations with the Japanese during the war. The tenth article stipulated that all offensive military operations should cease upon the ratification of the treaty, and the eleventh provided for the exchange of ratifications at Chefoo on May 8. Separate articles provided that the Japanese force occupying Wei-Hai-Wei should be limited to one brigade, that China should pay one fourth of the cost of occupation at the rate of 500,000 kuping taels per annum, that the Chinese civil authorities should conform to the orders that the commander of the Japanese army of occupation deems necessary for the health, maintenance, and safety of the troops, and that the Japanese military authorities should have jurisdiction over military offenses.

The Viceroy Li did not take the treaty that he had signed to Peking, but remained in Tientsin in token of the humiliation that he felt at having to accept such hard terms. He was deprived again of most of his offices and power. The Board of Admiralty was abolished, the fleet having been lost. Chang-Chi-Tong, Viceroy of Nanking, and the other enemies of Li-Hung-Chang were not able, however, to break the treaty, because Mr. Foster convinced the Peking authorities that the safety of the capital and of the dynasty was involved.

The armistice was extended to May 8. The Emperor of Japan ratified the treaty three days after it was signed. It was ratified by the Chinese Emperor also, notwithstanding the persistent efforts of the Conservatives and the enemies of Li-Hung-Chang at Peking to have it rejected.

On April 23 the Russian, French, and German ministers at Tokio presented a joint note to the Japanese Government protesting against the cession of the Liao-Tung peninsula, as in Japanese possession it would be a constant menace to Peking and a danger to the independence of Korea, and thus detrimental to the lasting peace of the Orient. The Russian military forces in the Amur province had been increased to 30,000 and the Russian fleet in Chinese waters numbered 22 vessels, including some of Russia's best ironclads. The German Government made preparations to strengthen its naval forces in these waters. The British Government, while refusing to join in the menacing demands of the three powers, advised the Japanese Government to yield. The joint note was submitted by the Japanese ministry to the generals and admirals, who were invited to choose between surrendering Manchuria or engaging in a new war to retain it. The naval commanders replied that scarcely a ship was in thorough fighting trim, that extensive repairs and refitting were needed. The ability of the army to continue offensive operations depended upon the fleet, which must convoy it safely across the Gulf of Pechili. The military organization had been put to a severe strain by the campaigns in Korea, Manchuria, the Liao-Tung peninsula, Shan-Tung, and the Pescadores, and the resources of the administration were nearly exhausted. Even apart from the new complication, the ability of Japan to

undertake the advance upon Peking with an army of 100,000 men was doubtful, though while the peace negotiations were proceeding the war preparations were pushed with ostentatious bustle, and Prince Komatsu, uncle to the Emperor, who had been appointed commander in chief, had set sail for Talienwan under the eyes of the Viceroy Li with 20,000 fresh troops in 58 transports under the convoy of 14 men-of-war. The military men agreed with the officers of the navy that to engage in a war with European powers would be madness. The Japanese Cabinet therefore sought only a dignified mode of submission, and was not displeased at the noisy outbreak of patriotic bravado in the Opposition press, which enabled it to reply to the memoranda of the ministers of the three powers that if it yielded to their demands it would be exposed to an uprising of the Japanese people. The Russian Government, refusing to take into consideration the fear of a revolution in Japan, assumed a more peremptory tone. The Japanese Government in the end, when a Russian ultimatum was imminent, consented to abandon her claim to the Liao-Tung peninsula on terms to be arranged in a supplementary convention. The acceptance of the friendly advice of the intervening powers was signified to their representatives shortly before the exchange of ratifications, and published on May 13 in an imperial rescript, which set forth that the Emperor of Japan, having been constrained to take up arms against China by the desire to secure for the Orient an enduring peace, and recognizing that the recommendation of the three powers was prompted by the same desire, and that China, by concluding a peace, had shown regret for the violation of engagements, accepted the advice of the friendly powers in the interests of peace, and with the desire not to bring added hardship upon Japan, or impede the progress of national destiny by creating new complications and thereby making the situation difficult and retarding the restoration of peace. In the negotiations for the restoration of Feng-Tien, or the peninsula of Liao-Tung, the Japanese declined the mediation of the powers. As compensation for the retrocession of Liao Tung Japan demanded 100,000,000 taels.

To enable the Chinese Government to pay the first installment of the indemnity, due in November, a loan of 400,000,000 francs in gold was taken by Paris and St. Petersburg bankers with the guarantee of the Russian Government. This gold loan, bearing 4 per cent. interest, was issued at 98.9 per cent. It runs thirty-six years, and is inconvertible for fifteen years. The Chinese Government, influenced by English and German advice, refused to accept the Russian guarantee, and for a long time resisted the proposition to pledge the maritime customs as security for the loan, but finally gave way on both points. After the contract had been signed, the Russian Minister of Foreign Affairs requested the Japanese minister to St. Petersburg to state within what period the Japanese would evacuate the Liao-Tung peninsula. The minister replied that Japan would continue the occupation until the indemnity was fully paid. The three powers continued their pressure, though when Japan reduced her demand to 50,000,000

taels Germany first counseled acceptance of the proposition, but later stood by France and Russia in insisting upon a lower price for the evacuation of Liao-Tung. An arrangement was finally reached, and the protocol was signed at Peking early in November. The Tokio Government accepted 30,000,000 taels, to be paid on Nov. 16, as extra indemnity for the revision of the Shimone-seki treaty, and agreed to evacuate Port Arthur on Nov. 30. China is said to have covenanted not to cede any part of the Liao-Tung peninsula to any foreign power. She had already agreed to negotiate a commercial treaty with Japan, for which Li-Hung-Chang was appointed commissioner.

**Seizure of the Pescadores.**—When the Japanese ministers told Li-Hung-Chang that Japan intended to take possession of Formosa, the Japanese squadron had already sailed on that errand. On March 23 three ships bombarded a fort on Pong-Hu, the largest of the Pescadore Islands, near the western coast of Formosa. The Chinese replied with guns of 15 centimetres, but were not able to hit the ships. A force of 3,000 men was landed with guns, which, with the support of the ships' batteries, cannonaded the fort until the garrison left it. The Japanese entered it early the next morning, and then marched upon the fortified town of Makung, which was evacuated after an hour's musketry firing. The Japanese lost 1 killed and 27 wounded, while the Chinese losses were 50 killed and 60 taken prisoners. The garrison departed in junks for Fisher island, and with the garrison there sailed for the Chinese mainland. This island was occupied on March 27. A garrison of 3,000 men was placed in Makung.

**End of the War.**—Besides the operations in the Pescadores and Formosa, the Japanese seized the island of Yuchow, bombarded the forts at Haichow, on the Kiangsu coast, and on March 24 landed a force and temporarily occupied that town after a sharp fight in which the Chinese lost 300 killed. In preparation for the advance upon Shanhaikwan they took the island of Thachua, which lies midway between Kinchow and that city. After the treaty was ratified the troops were gradually withdrawn from all points except Port Arthur and Wei-Hai-Wei. The imperial guard, which had come to lead in the advance upon Peking, was dispatched to Formosa to reduce the rebellion there. The other troops returned to Japan, and were disbanded. The war was officially declared to be at an end on June 8. The effective strength of the Japanese forces that fought in China was 60,979, of which number 39,097 formed the first army, 19,919 the second army, and 1,963 were sent afterward. The number actually supplied from Japan was more than double the fighting force, which was attended by coolies for transport, road-making, and the like. The total number of deaths in the army from the beginning of the Korean campaign, in June, 1894, till the return of the troops in June, 1895, was 4,110, of whom 734 were killed in battle, 231 died from wounds, and 3,148 died from disease. Of these last, 1,602 died of cholera, of which there were 2,869 cases among the troops. The actual cost of the war was 150,000,000 yen.

**Subjugation of Formosa.**—Li-Ching-Fang, the Viceroy's son, and Mr. Foster went to For-

mosa to transfer the government to the Japanese authorities. The Chinese Governor lost control over the troops and people when the cession of the island became known. The leaders of the Black Flags and the *literati* made preparations to resist the Japanese, and anarchy prevailed to such an extent that British and German marines were landed at Anping to protect European lives and property. In the south the savage aborigines raided Chinese settlements and plantations. There were about 30,000 Chinese soldiers on the island, most of them lawless Kwangtung men, including many of the fearless warriors who had fought the French. These troops, whose pay was many months in arrears, mutinied against their commanders and pillaged the inhabitants. The Governor and all the civil and military officers were recalled to China by an imperial decree promulgated on May 21, but the Governor did not obey, and no steps were taken to withdraw the turbulent soldiery. Luh-Vinh-Phuoc, the old chief of the Black Flags, took the lead in a revolt against the new rulers. The Chinese Government sent 5,000 more troops to the island from Canton to suppress the Black Flags, and most of these joined the rebels. A Hakka chief, called Kuhungkuk, proclaimed himself king in the northern part of the island, and thousands of well-equipped soldiers joined his standard. Finally, Tang-Ching-Sung, the Chinese Governor, encouraged by Chinese officials in Canton and Nankin, on May 24, proclaimed an independent republic with himself as president, and appealed to the French republic and to Spain for aid. Two or three days afterward a Japanese fleet arrived at Tamsui, where the Chinese officials refused to allow the Japanese to land. Torpedoes blocked the entrance to the harbor. Chang-Chi-Tong, Viceroy of Nankin, sent troops and munitions to assist the rebels. The forces of the nominal republic, which was understood by the population to be an official device, were said to number 100,000 Canton, Honan, and Swatow braves and Hakka militia, all well armed with Mauser and Lee rifles and Winchester carbines, and well supplied with ammunition. On May 30 a Japanese force landed on an island at Kelung, which was valiantly and ably defended. The formal transfer of the island to Viscount Kabayama, the Japanese Governor-General, took place on June 2 on board a vessel at Kelung. Lord Li included the cable in the list of Government property and offered a statement concerning the condition of affairs, but withdrew it when the Japanese commissioner explained that if the Chinese authorities had official cognizance of the insurrection they were bound to suppress it. The next morning the Japanese landed in force, and occupied Kelung after several hours of severe fighting, in which 200 Chinese and 8 Japanese were killed. As Taipeh-Fu, the capital, was only a short distance away, President Tang and the other officials took flight and went on board a German passenger steamer. The forts at Tamsui tried to detain this vessel, compelled the delivery of treasure to pay the garrison, and fired upon her, killing 7 men, upon which the German gunboat "Itis" bombarded the forts, killing 13 men, and the Chinese gunners then fled. Only Cantonese fought the Japanese, as the



northern soldiers refused. At Taipch pillage and arson ensued, and in an explosion of the powder magazine many Chinese were killed. The Japanese established thier headquarters in this town on June 5, where they were welcomed by the native population. A detachment of Japanese which attacked the forts at Chi-Lu-Shantao lost 30 men and killed 80. At Shiu Fan-Chow, also, the Chinese offered a stubborn resistance. After a week order was established in the vicinity of the capital part of the island. The Chinese soldiers who surrendered were disarmed, and departed to China.

The Black Flags, led by Lin-Yung-Fu, con-

and, together with the Hakkas and other Chinese inhabitants of the island, kept the Japanese on the defensive. The latter were compelled to increase the army of occupation from 40,000 to 60,000, and more were killed in three months of the Formosa campaign than during the entire Chinese war. Even after all the fortified posts were captured and the Black Flags dispersed and leaderless, the natives were still so hostile that fresh troops were sent to the island in November to replace those who were worn out by fatigue or weakened by illness.

The island of Formosa has an area of 8,730 square miles, and about 2,500,000 inhabitants.



CHINESE ANTI CHRISTIAN CARTOON.

centrated at Anping, on the west coast, where they levied exactions on the Chinese inhabitants. When a Japanese cruiser appeared she was fired upon here and at Takau. The Black Flags fortified their position at Anping strongly and attacked the positions of the Japanese frequently, captured commissariat stores, and gave them all they could do to hold their positions and protect the communications until large re-enforcements came. The Japanese were not ready to advance upon Anping till near the end of July. When they made the attack they were held in check, in spite of their mountain and machine guns, by rifles behind loopholed walls and stockades. The troops of Gen. Kawaymura attacked the rebels in the middle of August at Shin-Chiku, with the co-operation of two gunboats, and routed them. Taiwan and the other chief towns of southern Formosa were captured, but the Black Flags still held their camp at Anping,

The rich lands on the western side have long been cultivated by Chinese settlers, who raise a vast quantity of rice, sugar enough to supply Japan and partly supply the refineries of Canton, and an excellent quality of tea, which is exported to the United States. The civilized natives work for the Chinese, while the independent Formosans, who hold the mountainous central districts and the whole western part of the island, are hostile and commit many depredations. The forest products are various, the most valuable being camphor. The aloe, the cassia, and the tree that supplies the material for pith paper are also abundant. Other products are cereals, indigo, taro, sweet potatoes, hemp, rattan, and peanuts. Coal and petroleum exist in large quantities, and gold has been found.

**Outrages upon Missionaries.**—The effect of the Japanese war was to stir the antipathy of the inhabitants of various inland provinces to-

ward foreigners, especially Christians. Superstitious prejudices were as usual played upon and the fanatical rancor inflamed by ambitious *litterati*. Near the seat of war fugitive soldiers and impoverished vagrants committed depredations, but not on the missions alone, and the

accompanying illustrations, which are fac-similes of two anti-Christian cartoons.) In these publications the people are advised to assault and mutilate the missionaries and their wives.

On May 28 the Canadian mission at Chengtu was attacked by rioters. The missionaries kept



CHINESE ANTI-CHRISTIAN CARTOON.

missionaries who were in danger made their escape, usually to the treaty ports. Dr. Randle, an American missionary, was maltreated at Ping-Fu on May 7 by soldiers, who were afterward punished. The serious outbreaks occurred in central and southern China, where the Chinese stock is purest, the military and national spirit strongest, the hatred of "foreign devils" keenest, and the power of the Pekin authorities least effective. Secret political societies seeking the overthrow of the Manchu dynasty are capable of inciting outrages against Europeans for the very purpose of embroiling the Government with foreign powers, and bringing about a situation in which revolution would be possible. The disasters of the Japanese war cost the Central Government nearly all the prestige and authority it had in the provinces where the anti-dynastic feeling is rife, and in these provinces, the most ingrained with the traditional religion and morality, and impermeable to Christian instruction, the antipathy of the people toward Europeans was now intensified, because from Europe came the arms and tactics that enabled the Japanese to conquer Chinese territory.

There is a literary bureau in Hunan active in spite of the efforts of the central authorities to suppress it, from which are sent out placards, pictures, and pamphlets representing Christ as a pig and missionaries as ghouls who kill Chinese children in order to get their eyes and brains and livers for use in Western arts. (See the two

the mob at bay for some time, but they finally fled for their lives, and their chapel and hospital were looted and burned. The temper of the populace was known to have been for some time in a dangerously excited state, yet the officials took no measures for the security of foreigners. The immediate cause of the outbreak is said to have been the act of one of the medical missionaries in seizing a boy, one of a crowd that persisted in throwing stones at him, and locking him in the chapel. After the looting the boy was found dead and mutilated. An immense crowd gathered. Soldiers and others dug up the ground under the mission buildings, and bones were produced that were declared to be those of children murdered by missionaries. The chief of police, a Taotai from Hunan, issued a proclamation declaring that at last evidence had been found that missionaries kidnap small children. Two missionaries were arrested for trial on this charge. All the missionaries were taken under the protection of the authorities, who did nothing, however, to arrest the pillage and destruction of the missions, which went on from the early morning of May 29. On the contrary, the Viceroy, Liu-Ping-Chang, sent out a telegram stating that the mutilated corpse of a child had been found in a foreign place. The disturbance spread to the other places in Szechuen. The story was placarded everywhere that missionaries had been detected in murdering children to get oil from their bodies. During



the next two days all the missions, English, American, and French, in Kiating, Yenchow, Pingshan, Suifu, Chinang, and Sinching were destroyed. Circulars were sent by officials of Hunan and Szechuen to prominent men of Kinkiang and other places urging them to rise at once and drive out the foreign devils, who were corrupting the people and undermining the ancient religion. The missionaries were safely conveyed out of the disturbed districts, but their converts were subjected to dreadful persecution. At Yachan the officials protected mission property, but twenty stations were wrecked. The riots continued through the early part of June.

The French Government was the first to demand reparation, in behalf of the Catholic missions, and in response an imperial decree was issued ordering the damage to be repaired and the malefactors brought to justice. Trials were held in which those who were guilty were accusing witnesses and those who had befriended the missionaries were punished. Before the riots in Szechuen were over an outbreak occurred near Wenchow in Che-Kiang, against native Christians, whose houses and chapels were razed by a mob that accused them of gouging out the eyes of a Taoist idol. The feeling against foreigners spread as far as Yunnan. Minister Denby appealed to all Americans in the interior to repair temporarily to the coast.

On July 31 10 English missionaries of the zenana mission and the Church Missionary Society were massacred without warning by an organized band of 80 armed men at Whasang, a mountain resort near Kucheng, Fukien. The Rev. Dr. Stewart and his wife, a grown daughter, and a child were killed, and their house was then set afire. Misses Marshall, Gordon, Nellie and Topsy Saunders, Hetty Newcombe, and an Irish nurse were tortured and murdered with spears and swords in the sanitarium at Whasang. Four of the Stewart children and 4 woman missionaries were frightfully wounded. Miss Mabel C. Hartford, an American, was knocked down and beaten, but made her escape into the hills. Most of the American Methodist missionaries were absent. All the mission property was destroyed, except Spanish and Russian missions. The woman missionaries were here, as elsewhere, particular objects of fanatical rage.

Kucheng, which has about 50,000 inhabitants, had been in a state of anarchy for some time. A sect of vegetarians, which sprang into sudden prominence during the war, showed special hostility toward Christians. The sect became so numerous and truculent that the mandarin dared not punish its members for crimes, and yielded to them in all things.

The United States minister commissioned J. C. Hixson, consul at Foochow, and Capt. Newell of the "Detroit" to go to Kucheng to inquire into the circumstances of the outrage in conjunction with British investigators. Sheridan P. Read, consul at Tientsin, and Commander Francis M. Barber, naval *attaché* of the legation, were sent to Chengtu to investigate the excesses in Szechuen. The Emperor issued an edict commanding the Tartar generals at Foochow to arrest the rioters and enjoining all viceroys or governors to protect missionaries and

chapels and to issue proclamations exhorting the people not to listen to scurrilous tales which excite unfounded suspicions. The Chinese Government sent mandarins of superior rank to detect and try the perpetrators of the crimes. As a result of the trials, Liu-Ping-Chang, who was immediately deprived of his office, was degraded, as was the Taotai also, and some of the rioters were punished as felons. The chiefs of the vegetarian sect at Kucheng were arrested, and of the persons who took part in the murders, 23 out of 130 that were arrested were convicted, and 7 were executed. All the missionaries of the province took refuge at Foochow. The whole province in September was in open insurrection, and the local officials abandoned their posts and fled. An armed mob wrecked the chapel and school of an American mission at Pinghok, near Foochow. Fresh attacks upon missions occurred in various provinces. Placards and pamphlets inveighing against foreigners were distributed in Canton. A mob of roughs attacked the British mission at Fatshan, and a Chinese gunboat was sent to quell the disturbance. The Catholic mission at Wanai was also attacked by bandits, and was defended by the missionaries, who killed some of the marauders. The military authorities of Canton took prompt measures to restore order. Outbreaks occurred also at Chingchow, Taiping, Hupeh, and Anhui. The Chinese Christians were harried and robbed everywhere after the flight of the missionaries.

The French commissioners, one of whom was Bishop Bernard, completed their investigations first, and the French minister obtained from the Chinese Government a promise of full reparation. A convention was concluded, giving to the Roman Catholic Church the privilege of acquiring land in any part of China without the permission of the local authorities. Owners may convey lands or houses by simply signing the title deeds. The Church can not be taxed more than native owners are under the general regulations of the imperial law.

Some of the minor officials were punished for the outrages in Szechuen. The result was far from satisfactory to the English, and their minister, supported by the United States minister, demanded that the Viceroy, Liu-Ping, should be degraded. British war vessels ascended the Yangtse-Kiang, and a naval demonstration was threatened at Nankin. An ultimatum was presented on Sept. 28, and on the day following the Chinese Government announced that the Viceroy of Szechuen had been stripped of his rank for failing to protect missionaries, and that he would never be allowed to hold office again. He had, in fact, been degraded for incompetency and ordered to give up his post before the missionary outrages occurred. Chinese commissioners were sent by the Peking Government to Kucheng, where they held a trial in the presence of the English and American commissioners, the result of which was that 17 other culprits were beheaded.

**Mohammedan Revolt.**—Besides antimissionary outrages, another consequence of the war was an uprising of the Dunganis of the province of Tsinghai in the Koko-Nor region. The rebels carried Luoting by storm, causing the commandant to commit suicide. The revolt spread

among the Mohammedans of Kansuh. The Viceroy telegraphed for re-enforcements and war material. After the rebels had captured 11 cities Gen. Tung-Fusiang was dispatched, at the head of 25,000 troops, to Lanchow-Fu, the capital of the province, near which place he inflicted several defeats on the rebels. These, however, were constantly gaining fresh adherents, while his troops consisted partly of Mohammedans, who would not fight their coreligionists. Discontented Buddhists joined the Dungans, as the Mohammedans of northwestern China are called, and their forces increased until there were 500,000 under arms. They had the encouragement of the Turkomans of the neighboring Russian provinces and of the secret societies of central China. After an indecisive engagement with Gen. Ma, the leader of the rebellion, Gen. Tung, who lost 3,000 killed in the battle and 5,000 more that deserted to the enemy, reached Lanchow-Fu, and was there closely besieged. The other garrisons of the province, in which there were only 60,000 Chinese troops, were also invested. The cruelties practiced on both sides were as revolting as in the former Mohammedan rebellion, 1862-'77.

**Franco-Chinese Treaty.**—The result of French intervention to save Chinese territory from Japan was a convention settling the northern boundaries of the conterminous French possessions in Tonquin and Annam and regulating the commercial relations between French Indo-China and Yunnan. By this agreement Meng and Wuto were ceded to France. This cession is not recognized as valid by Great Britain, because it was held that these districts formed part of the provinces on the upper Mekong that Great Britain conceded to China, so that they might form a buffer state or neutral zone between French Indo-China and Burmah. The convention also sanctions the extension of the Tonquin railroads and telegraphs into Chinese territory. The instrument was signed at Peking on June 20.

**CHRISTIAN ENDEAVOR, YOUNG PEOPLE'S SOCIETIES OF.** The International Convention of the Young People's Societies of Christian Endeavor met in Boston, Mass., July 11. About 70,000 delegates were in attendance. The statistical report showed that 7,750 new societies had been added during the year, and that the whole number of societies was now 41,229, and the whole number of members was about 2,500,000. Of the societies, 33,412 were in the United States, as against 28,696 in 1894; 3,105 in Canada and Newfoundland, an increase of 1,223 from the previous year; 2,645 in the United Kingdom, 1,509 in Australia, 30 in Africa, 32 in China, 64 in France, 117 in India, 59 in Japan, 93 in Madagascar, 25 in Mexico, 39 in Turkey, 63 in the West India Islands. The societies in the United States included 18 senior societies, 33 mothers' societies, 62 "intermediate companies," 169 societies in schools, colleges, public institutions, prisons, and schools of reform; the North American Union of German Christian Endeavor; 7 societies in the army and navy of the United States; societies among the policemen and patrolmen; companies among the Indians of the North and West; comrades enlisted in work among the life-saving crews, light-houses, and lightships; the Travelers' Union of Christian Endeavor; 158 "floating societies";

and 8,850 junior societies. There were also 339 junior societies in Canada and 224 in other lands, making in all 9,122 junior societies, with 340,000 members. The "Missionary Roll of Honor" bore the names of 5,551 societies, each of which had given not less than \$10 to one of its denominational boards of missions, the whole amount of such gifts having been \$140,719. Adding other gifts for religious and benevolent objects of \$190,884, the aggregate of the contributions of the societies in the United States was \$340,603, and of the United States and Canada \$425,000. The denominations in the United States were represented by the number of societies organized within them in affiliation with the convention in the following order: Presbyterians, Congregationalists, Disciples of Christ and Christians, Baptists, Methodist Episcopal Church, Methodist Protestants, Lutherans, Cumberland Presbyterians, and others. The meetings of the convention were devoted to addresses and religious exercises.

**COLOMBIA**, a republic in South America. The Senate has 27 members, 3 from each department, elected by indirect suffrage for six years. The House of Representatives has 68 members, 1 to every 50,000 of population, elected for four years by direct vote. Every elector must be twenty-one years of age and either know how to read and write, or be a property owner, or have an income of 500 pesos. The President is elected for six years by an electoral college. The ministers are responsible to the Congress. Miguel A. Caro became President in 1894. The following ministers were in office in the beginning of 1895: Interior, M. A. San Clemente; Foreign Affairs, M. F. Suarez; Justice, A. M. Rueda; Commerce and Communications, B. Bravo; War, J. D. Ospina; Instruction, L. Zerdá; Finance, Abadia Mendez; Public Works, J. de Brigard. The area of the republic has been recently estimated at 464,400 square miles. The population was estimated at 3,878,600 in 1881.

**Finances.**—The budget for the biennial period 1895-'96 makes the revenue 26,203,966 paper pesos (the value of the peso in exchange is 50 cents), and expenditures 33,801,888 pesos. The customs receipts in 1893 were 9,160,175 pesos.

The foreign debt, contracted in England, amounted on June 30, 1894, to £3,279,828 sterling, including £1,364,328 of unpaid interest. The internal funded debt amounted to 5,466,896 pesos, and other liabilities to 3,946,164 pesos, exclusive of 26,135,606 pesos of paper money.

**Commerce and Production.**—The value of the imports in 1893 was 13,403,299 pesos; of the exports, 14,630,332 pesos. Manufactured cotton is the most important article of import. It comes from Great Britain, as do woolen and linen manufactures and iron wares. Alimentary substances are imported from the United States and other American countries. The imports from Great Britain, excluding the Panama district, in 1892 were 4,289,276 pesos (1 peso = 97 cents); from France, 2,244,459 pesos; from the United States, 1,861,263 pesos; from Germany, 1,315,430 pesos; from other countries, 2,298,118 pesos. The exports to Great Britain were 5,966,911 pesos; to the United States, 4,855,467 pesos; to France, 1,520,905 pesos; to Germany, 1,450,903 pesos; to other countries, 2,079,615 pesos.



The mineral wealth of Colombia is extraordinary, though owing to difficulties of transport only the most valuable ores and metals can be profitably handled, except the iron found near Bogotá, the capital, and worked up there into cutlery and utensils, and the salt mine in the same district, which is operated by the Government. Gold is found everywhere, and license fees are paid on nearly 5,000 claims. The product is over \$3,000,000 a year. Silver, copper, lead, platinum, quicksilver, cinnabar, magnanese, and emeralds are also mined. There are large deposits of coal, and petroleum has been found. The soil is very fertile. Cattle are raised in the central departments. The chief exports and their values in 1892 were as follow: Coffee, 7,609,000 pesos; precious metals, 3,472,000 pesos; minerals, 620,000 pesos; tobacco, 577,000 pesos; hides, 560,000 pesos; cacao, 436,000 pesos; vegetable ivory, 421,000 pesos; woods, 235,000 pesos; caoutchouc, 228,000 pesos; cattle, 170,000 pesos.

**Navigation.**—There are only 2 steamers, of 341 tons, and 5 sailing vessels, of 2,179 tons, registered in Colombia. During 1893 there were entered at the ports 1,510 vessels, of 806,397 tons; cleared, 1,475, of 1,436,854 tons. Monthly calls are made at the ports by 32 steamers, of which 15 are English, 9 American, 4 German, 3 French, and 1 Spanish.

**Communications.**—There were 231 miles of railroads in 1894. The Panama Railroad had a length of 47 miles. The Bolivar line from Barranquilla to Puerto Belillo, 20 miles, was completed, and so was the Cucuta line, running to Villamizar, 34 miles; also the line from Santa Marta to Cienaga, 20 miles, and the Savanna line, between Facatativa and Bogotá, 24 miles. The Santander line of 75 miles was only begun; of the Cauca line between Buenaventura and Cali 12 miles out of 85 were built; 30 miles of the Antioquia Railroad connecting Medellín with Puerto Berrio, 125 miles, were in operation; the 30 miles between Conejo and Honda were more than half completed; and of the Girardot line, running 93 miles through the mountains from Girardot to Bogotá, 25 miles were constructed, from Girardot to Juntas de Apulo. This last line was begun as a Government enterprise. In 1895 it was handed over to an American company, which has undertaken to build the remaining 68 miles, with the aid of a subsidy of \$16,000 a mile, about one third of the estimated cost, and thus provide steam transportation between the political and commercial capital and the head of navigation on Magdalena river.

The army, which is kept at a strength of 5,500 men, has been employed in improving the highways. The telegraphs in 1894 had a length of 6,835 miles.

The number of internal letters that passed through the post office in 1893 was 1,302,410, including postal cards; of samples, 615,844; of registered letters and packets, 70,038; of foreign letters, 342,440.

**The Panama Route.**—An arrangement was made between the Colombian Government and the liquidator of the French Panama Company on April 4, 1893, whereby the concession for the construction of an interoceanic canal was prolonged ten years on condition that the new company to be formed should resume work before

Nov. 1, 1894, and pay over to the Government 17,000,000 francs in money and stock.

The original company, organized by Ferdinand de Lesseps in 1881, after receiving 772,545,412 francs up to June 30, 1886, and attempting to raise a loan of 600,000,000 francs in 1888, went into liquidation and suspended work on March 15, 1889. A new French company was incorporated in October, 1894, and work on the canal was resumed *pro forma*. The wages of the laborers and employees having been cut down, they began a strike in January, 1895. Threats were made that Colon would be burned and the railroad property destroyed unless living wages were paid. The outbreak of the revolution encouraged lawlessness and weakened the police powers of the Government. On Feb. 18 three attempts were made to burn Colon. The strike on the canal and the railroad continued, and was joined by the mechanics, many of whom left the country in April. In July the laborers began to return to work at the old rate of wages. In August the canal company prepared to begin work in earnest. Laborers and artisans were hired, and a guard of soldiers, for which the Government charges the company \$10,000 a month, was distributed along the line. Competent experts estimate that the least sum for which the canal can be completed is \$100,000,000. The amount already expended is \$220,000,000.

**Revolutionary Uprising.**—Avelino Rosas, formerly Governor of Cauca and the recognized head of the radical wing of the Liberal party, planned, in December, 1894, from Curaçoa an armed attempt against the clerical administration of President Caro, in conjunction with other exiles and their sympathizers in Ecuador and Central America. Gen. Santos Acosta and other Liberal chiefs in Colombia were ready to head uprisings to overthrow the local authorities in the departments of Cauca, Santander, and Magdalena at the same time that Gen. Santo Domingo Vila, ex-Governor of Panama, entered southern Cauca with a strong volunteer force from Ecuador and other expeditions landed from Venezuela, Costa Rica, and the Antilles. The Government was forewarned and prepared to suppress the movement.

The first revolt occurred in Bocas del Toro, where a part of the troops mutinied and declared against the Government. This was easily suppressed without loss of life. In the early part of January an organized body of revolutionary troops entered Colombia from Venezuela at Tachira. They were met by the troops of the Government stationed on the border, and were repulsed, their leaders being captured and imprisoned. On Jan. 23 an uprising with which the authorities were not able to cope occurred at Tolima, in Boyaca. The rebels took the field at once in Cauca, Cundinamarca, and Santander. Pasto, Pradera, and other important towns declared for the revolution. At Pradera the Government's authority was restored after a battle in which the revolutionists were defeated. In Bogotá many of the soldiers and police deserted to join the popular movement, and made an attempt to capture the barracks, which the artillery and other loyal troops prevented under the personal direction of President Caro. The fighting

was severe, 200 men being killed. Several of the leading Liberals living in the capital were imprisoned. Cucuta and other points on the frontier were taken by the invading rebels, and arms were introduced freely through Venezuela. The rebels possessed themselves of the Girardot Railroad, and captured 3 of 5 river gunboats that the Governor of Bolivar had equipped on the Magdalena river. They prepared to send an expedition against Honda so as to cut off communications with Bogotá, whence Government re-enforcements were dispatched in haste to defend that place. The capture of Barranquilla made the rebels masters of navigation on the Magdalena, but only until Gen. Rafael Reyes arrived in Cartagena with 1,000 men and 5 river boats. Some foreign residents in Barranquilla, fearing trouble in the city, hoisted the flags of their respective countries. The local authorities ordered them lowered, and issued a decree threatening to fine and imprison any private person displaying a foreign flag. In the battle of Papayo, near Ibaque, the revolutionists sustained a disheartening defeat, 300 of them being captured. Troops were sent out from Cartagena to clear that part of the country of insurgents. The Government continually increased its forces, arming the inhabitants of Cauca, Antioquia, Bolivar, and Magdalena. The rebel forces in Tolima surrendered on Feb. 8 at Chumbamuy. After the route of Tachira on Feb. 5 at Mundo Nuevo, Cundinamarca was cleared of invaders. In the province of Velez and other central districts the rebellion was not yet suppressed, but Government troops closed them in and pursued the principal body toward Sogamoso. A detachment of invaders was routed near Habahia, and 250 prisoners and a large supply of modern rifles were captured. On Feb. 14 the rebels made a brave resistance at Cucuta, and on the following day, after they had been driven out of the town, they returned and attacked the Government forces, and finally expelled them after a desperate battle that lasted from dawn till afternoon, more than 800 being killed on both sides, among them the rebel leader Gen. Cuarto. A small expedition from Port Limon landed at Bocas del Toro on March 8. A fierce attack was made upon the *cuartel*, where the soldiers were surprised in their sleep. The rebels lost their leader, and were repulsed after three hours of fighting. In the evening marines were landed from the United States vessel "Atlanta" to protect American property. The "Raleigh" had before this been ordered to Colon and the "Alert" to Panama, to be ready to land troops, as was done in 1885, in case the revolutionists should attempt to close the Panama Railroad. Gov. Arango declared the department of Panama in a state of siege, and caused a great number of persons to be confined as political prisoners. A fierce battle took place at Baraona, where 500 men were engaged, and 50 fell on both sides. The rebels had previously captured Puerto. A few days later Gen. Martens gained a victory over a large body of rebels at Capitanejo, near Malaga. Battles were fought in Cauca at Cali and Buga. On March 15 the Government forces under Gen. Reyes defeated a large body of revolutionists, and captured the town of Enciso. The rebel loss was reported to

be 1,200 men and that of the Government 700. Many of the loyalist soldiers perished during the forced march. After this decisive engagement the rebels were too much discouraged to take the field again in force, though the army of Gen. Reyes, originally 30,000 strong, had been reduced by deaths and desertion to 8,000. Guerrilla raids continued in the mountainous districts, and martial law was still maintained through the country. Concealed arms were unearthed and confiscated, and the frontier was so closely guarded that attempts to invade the country were finally given up.

To obtain means to prosecute the war the Government raised forced loans, and increased the import duties 15 per cent., and put a heavier export duty on coffee. The collection of a special duty of 10 per cent. on goods destined for the Isthmus of Panama was decided by the courts to be illegal. An extra tax of \$10 a head on all cattle slaughtered was decreed, and the stamp duties and internal-revenue duties were doubled.

**Italian Indemnity Claims.**—After a long correspondence in relation to claims for damages amounting to over \$600,000 sustained by Italian citizens during the revolution of 1885, the Colombian Government proposed that the matter should be referred to the President of the United States for arbitration. The proposition was accepted by the Italian Government, and in February, 1895, President Cleveland signified his willingness to act as arbitrator.

**COLORADO**, a Western State, admitted to the Union Aug. 1, 1876; area, 103,925 square miles. The population in 1880 was 194,327; in 1890 it was 412,198. Capital, Denver.

**Government.**—The following were the State officers during the year: Governor, Albert W. McIntire, Republican; Lieutenant Governor, Jared L. Brush; Secretary of State, Albert B. McGaffey; Treasurer, Harry E. Mulnix; Auditor, C. C. Parks; Superintendent of Education, Anjanette J. Peavey; Attorney-General, B. L. Carr; Chief Justice of the Supreme Court, Charles D. Hayt; Associate Justices, Luther M. Goddard, and John Campbell.

**Finances.**—The Treasurer's report shows the balance on hand Nov. 30, 1892, to have been \$850,051.47; the cash receipts during the two years, \$2,502,208.01; and the amount from investment warrants redeemed and interest, \$854,633.41. The cash disbursements were \$2,706,367.04; the warrants bought for investment amounted to \$932,526.28; and the cash in the treasury Nov. 30, 1894 was \$567,999.57. The floating State debt amounted to \$2,488,289.37, and the assets due the State \$1,180,081.59, leaving the net floating debt \$1,308,207.78. The capital bonds amounted to \$600,000.

**Education.**—The ninth biennial report of the Superintendent of Public Instruction for the two years ending June 30, 1894, gives the school population of 1893 as 116,119 and the attendance 46,187; and the school population of 1894 as 113,384, and the attendance 58,330. The whole amount of money paid for schools in 1894 was \$2,213,723.57, of which \$1,216,324.20 was teachers' wages.

The report of the State University at Boulder shows an enrollment of 159 university students



and 146 preparatory students in 1893-'94, and 181 university and 182 preparatory students for the fall term of 1894 enrolled before Oct. 1. Of the students in the university classes, 113 are in the College of Liberal Arts, 10 in the School of Applied Science, 41 in the School of Medicine, and 17 in the School of Law. A Professor of Philosophy and Pedagogy has been added to the faculty. The collegiate work was completely reorganized in 1893.

The preparatory school has been removed from the campus and established at a distance of several blocks. The city of Boulder assists in maintaining this school, providing rooms, heat, and incidentals, and paying nearly half the salaries. Important improvements have been made at the university, chief of which is the erection of the Hale Scientific Building, a sandstone structure, four stories high, which is occupied chiefly by the classes in science. Three rooms in the main building are used for an art collection given by Col. Ivers Phillips. The first story of an engineering building has been raised and provided with machinery. The proceeds for 1895 from the  $\frac{1}{4}$ -mill tax will be about \$40,000. For further income the university depends upon special appropriations. The total receipts for the two years ending Oct. 1, 1894, were \$112,082.69, and the disbursements \$107,412.77. Besides this, an appropriation of \$34,000 was made for improving the campus.

The number of students enrolled in the normal school at Greeley for the year ending July 31, 1894, was 363, of whom 275 were girls. In addition there were 30 in the preparatory department, 57 in the model school, and 65 in the kindergarten; 35 diplomas were granted. The 16 teachers employed received in salaries \$22,575. The receipts were \$36,574.45, and the expenses \$34,970.54.

The Denver and Rio Grande Railway Company has established at the Burnham shops a school for apprentices, which in March had an attendance of 22. The pupils are taught mechanics, draughting, mathematics, construction, and other practical branches in such a way that they lose no time, but on the contrary gain both practical and theoretical knowledge as they earn their livelihood.

The yearly receipts for the State Agricultural College and Experiment Station amount to \$78,500, of which \$7,000 comes from the land income fund, derived from interest on the money received from sale of lands given by the Government, and from lease of unsold lands; \$15,000 from the United States fund (Hatch bill) for support of experiment stations; \$20,000 from the United States fund (Morrill bill); \$35,000 from the State tax fund; and \$1,500 from sale of stock and farm products.

The enrollment, Nov. 30, 1893, was 139, and for the fall term 1894 it was 205, of whom 57 were girls. A college experiment station under the control of the State Board of Agriculture is maintained at Fort Collins, and substations at Monument, Rocky Ford, Monte Vista, and Cheyenne Wells. Eight bulletins on farming topics have been issued during the biennial period to citizens of Colorado and other States, and sent to libraries and scientific institutions in this and other countries. A short practical course in

agriculture was given in Agricultural Hall beginning Jan. 8, 1894, to a class of 46.

The ninth annual convention of the Association of American Agricultural Colleges and Experiment Stations met in Denver, July 23. Among resolutions adopted were these:

Instructing the Executive Committee to continue its efforts to secure the establishment of an office of land-grant colleges in the Bureau of Education, Department of the Interior, on the line recommended by the association at the eighth annual convention, the association believing that the provision made for the purpose by the last Congress is inadequate for such an office as was contemplated in the recommendation, emphasizing the importance of guarding against the diversion of the Hatch fund from its legitimate objects, viz., agricultural experimentation and research and the dissemination of the results thereof.

**State Institutions.**—The School for the Deaf and Blind had a total attendance of 178 during the period, with an attendance of 116 at the time of the report. The deaf pupils are organized into 6 classes, and the blind into 4, special instruction being provided for the deaf in art, and for the blind in music.

The number of boys received at the State Industrial School was 147; the number remaining Nov. 1, 1894, was 127. The amount of receipts was \$103,502.25, and the amount expended \$95,937.60.

**Railroads.**—In his inaugural address the Governor said: "With one principal exception, all the railroads of this State are now in the hands of the courts, and are being managed by receivers. Their business has been greatly diminished, and I believe it is true that there is not a single railroad paying dividends to its stockholders at this time. . . . The decrease in business resulting from the depressed financial condition of the whole country, including Colorado, has reduced the earnings of the railroads to such an extent that in some instances it has become a question whether trains could be run at all." Notwithstanding this fact, at least 11 new roads or extensions are projected in the State, and some are in process of building. The Plateau Valley road, which begins about 18 miles east of Grand Junction and runs to the junction of Grand and Plateau rivers, will be of great service to the western slope. The Midland Terminal is being pushed toward Cripple Creek. Surveyors have begun work on the Florence Southern road, to run from Florence to the Wet Mountain valley. The Gulf is building from Trinidad to Walsenburg. Among other enterprises on which more or less has been accomplished are the White River Valley road, and a railway connection between Durango and Flagstaff, Arizona.

**Decision.**—It has been decided by Judge Graham that the law prohibiting insurance companies from writing policies on the lives of children under ten years of age is unconstitutional and void. The passage of the law was due to the Colorado Humane Society.

**The Capitol.**—The General Assembly of this year was the first to occupy the new Capitol building, the outside of which is nearly completed, though much remains to be done on the inside finishing. The appropriations for the building, 1885-'94, amounted to \$2,250,000; for grounds, \$20,000; and for furnishing, \$100,000.

**State Lands.**—The report on these is as follows: Indemnity school lands, not patented, 455,507.38 acres; selected by former boards, not patented, 40,000 acres; selected by present board, not patented, 59,933.8 acres; total, not patented, 680,441.18 acres. Add school lands in sections 16 and 36, 3,000,000 acres. Total school and indemnity lands, 3,680,441 acres.

The receipts at the State Land Office for two years, ending Nov. 30, 1894, were \$255,753.27, against \$479,705.74 in previous two years.

During August, September, and October, 1894, a larger number of homestead entries was made at the Pueblo land office than in any three months since its establishment, the number being 262. There were 62 more mineral entries this year than last year, and 75 more mineral applications.

The State Land Board has reclaimed many thousand acres of school lands on which payments have not been kept up by the purchasers, but which have been left heretofore in their possession.

**Mining.**—The strikes that took place among the miners in 1894 reduced the output much below the estimate made at the beginning of the year, especially in reference to the amount produced at Cripple Creek. Notwithstanding this, the gold output of the State was \$4,000,000 larger than that of 1893. More than one third of the entire product of the State was from the Cripple Creek district, which yielded \$4,050,000. It seems to be the fact, as is claimed, that the 4 square miles of this district make up the richest tract of gold-yielding ground of its size on the continent, if not in the world. Leadville, the next most notable gold district of the State, produced nearly \$2,000,000. More than half of this came from one mine, the Little Johnnie, and all from about 4 properties, while at Cripple Creek the paying mines are more numerous and the profits more widely distributed. Activity in gold mining has made San Miguel the most prosperous of all the counties of the Southwest. Gilpin County, which stood second in 1893, took third position in 1894 by Leadville's large output, though its yield was actually larger than during the former year. Goose Creek, in Gunnison County, is a new gold section that promises well, and new mines were opened in Gilpin, Clear Creek, and Boulder Counties, the old properties in which continued to be productive.

Leadville is still the largest silver producer of the State, the product for 1894 being 7,889,992 ounces. The figures representing the mineral yield of 1894 are as follow: Gold, \$11,750,000; silver, 26,300,000 ounces; lead, 131,394,000 pounds; copper, 8,348,441 pounds.

Statements by 5 smelters of the State show that their purchases of gold, silver, and copper ore were greater during the first six months of 1895 than during the same months in 1894, while those of lead were smaller.

Vulcan, in Gunnison County, 12 miles south of Gunnison city, and partly also in Saguache County, is the newest mining town in the State. Prospecting has been done there for some years at times; it has now been found that a mineral-bearing quartz that had been observed on the surface, but passed by as valueless, is rich in gold, and the place has been rapidly filled with pros-

pectors and miners. The population in September was nearly 400.

A large deposit of valuable manganese ore is said to have been found about 20 miles south of Silver Cliff, in Custer County, and claims have been filed on about 1,000 acres.

The total coal product of the State for 1894 was 2,994,028 short tons, a decrease of 953,028 from that of 1893. This decrease was due to the strike, which kept 4,000 or 5,000 coal miners out of work for several months. There were 19 fatal accidents in coal mines, 15 of which were caused by the fall of rock and coal and by the bad management of inexperienced miners.

**Farming.**—The value of the agricultural product for 1894 was given in round numbers at \$75,000,000. It is estimated that 4,000,000 acres of land are supplied with irrigating ditches. This does not mean that there are 4,000,000 irrigated and cultivated to-day, but there are that many acres now under systems of ditches and canals that eventually will produce cultivated crops. Of the 4,000,000 acres there are 2,500,000 acres under actual cultivation. During the year 303 ditch surveys were recorded, but there is no record of the amount of work accomplished. There are in the State 1,000,000 acres of vega or meadow lands that never require artificial irrigation and another 1,000,000 acres of fenced pasture lands adapted to the growing of small grain without other irrigation than the rainfall.

The prevailing tendency appears to be toward the production of fruit. The orchard acreage of the State amounts to 100,000 acres, with a fair valuation, incircling old and new orchards into one, of \$50 an acre. The fruit output for 1894 amounted to \$3,000,000. Mesa County is one of the new fruit-producing districts. The western slope is developing into a grape-growing section, some varieties being successfully grown which have heretofore been supposed to flourish only in California. The amount of alfalfa annually cut is estimated at 2,500,000 tons; the wool clip for 1894 amounted to 12,000,000 pounds, valued at \$3,000,000; and the annual potato crop amounts to about 150,000 tons, valued at \$3,000,000.

**Mining and Industrial Exposition.**—The twentieth anniversary of the admission of Colorado to the Union was to be celebrated in 1896 by an exposition at Denver of the products of the State and of the West. A site was selected and secured—120 acres of land in the southeast portion of City Park and 30 acres of the school land adjoining on the south. But finally the enterprise was abandoned.

**CONGO, INDEPENDENT STATE OF** THE, a sovereign monarchical state created with the consent of all the powers and declared perpetually neutral in conformity with the general act of the Congo, which was signed at Berlin, Feb. 26, 1885. Leopold II, King of the Belgians, who was declared its sovereign, ceded his sovereign rights to Belgium by his will, made on Aug. 2, 1889. By a convention made on July 3, 1890, Belgium acquired the right to annex the State after a period of ten years. A codicil of the will, dated July 21, 1890, declares the territories of the State to be inalienable. The convention mentioned above was ratified by the Belgian Chambers on July 25, 1890. A single Secretary of State has direction over all the



branches of the Central Government, of which Brussels is the seat. Edmond van Eetvelde holds this post. The Governor-General, who is the head of the local government established at Boma, is Theodore Wahis.

**Area and Population.**—The area of the Congo State is estimated at 870,000 square miles, and the population at 14,000,000. The number of Europeans at the end of 1891 was 950, of whom 445 were Belgians.

**Finances.**—The budget for 1894 made the revenue 4,949,444 francs, of which 1,157,720 francs came from the customs duties that the Congress of Brussels, revoking the former inhibition, authorized the Independent State to levy for the purpose of suppressing the slave trade. Other local sources of revenue were expected to yield 891,724 francs, and the rest came from the Belgian treasury, which advances 2,000,000 francs a year, and the King-Sovereign, who gives 1,000,000 francs. The expenditures were expected to amount to 7,383,554 francs, of which 3,308,600 francs were for the public force, 948,736 francs for caravans, 897,260 francs for civil administration in Africa, 597,487 francs for public works, 492,269 francs for the naval service, 224,000 francs for the service in Europe, and 916,202 francs for miscellaneous expenditures.

There is a debt of the nominal amount of 150,000,000 francs, contracted in 1888. The Belgian Government by the convention of July 3, 1890, made a loan of 25,000,000 francs extending over ten years. Besides these debts the State has floating and temporary liabilities.

**The Armed Forces.**—The military force of the Independent State consists of 16 companies of native soldiery, numbering about 9,000 men, commanded by 143 European officers and 146 under officers.

There are 7 armed steamers on the lower and 12 on the upper Congo, besides sailboats.

**Commerce.**—The total value of the general commerce in 1893 was 10,148,000 francs for imports and 7,515,000 francs for exports, divided among different countries as follows:

COUNTRIES.	Imports.	Exports.
Belgium .....	4,483,000	3,185,000
Netherlands .....	1,260,000	1,734,000
Great Britain .....	2,822,000	535,000
Germany .....	1,010,000	134,000
French Congo .....	7,000	1,348,000
Portuguese possessions .....	177,000	567,000
Other countries .....	389,000	12,000
Total .....	10,148,000	7,515,000

The principal exports were: Ivory, 3,905,820 francs; caoutchouc, 1,849,596 francs; nuts, 840,064 francs; palm oil, 569,628 francs; coffee, 309,786 francs.

The special imports were 9,175,000 francs, and the exports of the produce of the State were 6,206,000 francs in value. The exports now consist of natural products, such as rubber, palm oil, palm nuts, and ivory. This last, constituting more than half of the total trade, is bound to decrease rapidly. The only cultivated products are rice and maize, the exports of which are insignificant. There is a vast territory suited for the growth of coffee, sugar, tobacco, and probably cotton, as well as rice and maize, and for the rearing of cattle; but the natives have

not been trained to labor, and means of transportation are still lacking. In certain parts of the Free State there are large supplies of copper, iron, and other minerals, including coal and gold. The export trade has steadily grown from 1,633,000 francs in 1887 to its present dimensions. The importations of textiles and other manufactures have increased with like rapidity, and Belgium's share, originally small, now greatly preponderates.

The number of vessels that visited the ports of Boma and Banana during 1893 was 677, of 217,996 tons.

**The Congo Railroad.**—Of the railroad that is to connect the head of navigation on the lower Congo with Stanley Pool 50 miles of the 250 were in operation at the close of 1894.

**Proposed Belgian Annexation.**—The King of the Belgians gave 40,000,000 francs for the original establishment of the Congo State and has since contributed 1,000,000 francs or more a year out of his private resources. He is no longer in a position to continue these sacrifices, and the Free State is also financially embarrassed, having incurred heavy expenses in fighting the Arab slave-raiders, and borrowed large sums of money, the interest on which weighs heavily upon its budget. For some years King Leopold has been anxious to transfer the responsibilities that he could no longer sustain to the Belgian Government. The needs were too urgent to wait for the arrangement for annexation in 1900 to be carried out. In 1894 the Government of the Independent State entered into negotiations with a syndicate of English capitalists, headed by Col. North, which proposed to buy a monopoly of commerce and exploitation in the great and rich province of Manyema. The Belgian Government interposed the objection, after the Manyema Association had been organized, that the proposed concession might prove a serious difficulty in the event of Belgium's taking over the Congo territories. Having blocked this way of relief, the Belgian ministry was constrained to take up the question of immediate annexation. A treaty of annexation was concluded between the Congo State and Belgium on Jan. 9, 1895, by which King Leopold ceded to Belgium the sovereignty of the Congo State, with all the rights and obligations appertaining thereto, the natural resources and acquired property, including the founders' shares in the railroad, and Belgium accepted the cession, and with it the debts and engagements. As a provisional arrangement pending the consideration of the bill for annexation, which was to be submitted to the Belgian Chamber within three months, it was agreed that no outlay should be made without the assent of the Belgian Minister of Finance, and that if the normal receipts of the Congo State fell below the expenses the King should supply the deficit. The total receipts were estimated at 6,000,000 francs, including the annual subsidy of 1,000,000 francs continued by the King, 2,000,000 francs contributed by the Belgian treasury, and taxes, imposts, and other colonial resources. When the annexation bill was introduced in the Belgian Parliament it was vehemently opposed by the Socialists and Progressists and dubiously received or openly condemned by a section of the Right. On May 22 the Government suddenly

decided to adjourn the debate indefinitely. M. de Mérode, who was responsible for the French treaty that was made in view of immediate annexation, resigned his post as Belgian Minister of Foreign Affairs. Arrangements were made with M. de Browne de Tiège, an Antwerp banker, who had advanced 5,000,000 francs to the Congo State, whereby the payment of the loan was deferred and the tract of land mortgaged, for the loan remained in the possession of the Congo State. The unexpected withdrawal of the bill, indefinitely postponing annexation after three months of agitated discussion, was attributed to the King, who had found the opposition stronger than was anticipated, and would not be a party to saddling Belgium with so momentous a responsibility by a majority of only six or seven votes. The Chamber subsequently authorized a loan of 5,287,415 francs out of the treasury to pay off the debt to M. de Browne, a further advance of 1,500,000 francs to cover the budgetary deficiency, and a subsidy of 10,000,000 francs to the Congo Railway Company. In April the company had borrowed 5,000,000 francs from Belgian bankers, in addition to 2,500,000 francs advanced by them in the previous September. These advances were to be repaid out of the subsidy. With the 10,000,000 francs the company expected to carry the line 95 kilometres beyond Lufu, the terminus, in November, 1894, when the length constructed was 80 kilometres. The promise of the Belgian Government to furnish this sum was accompanied with the reservation of a right to purchase the railroad within five years. By June, 1895, the line was laid for 102 kilometres, and it was calculated that Kimpesse, 160 kilometres from Matadi, would be reached in May, 1896.

**Franco-Belgian Agreement.**—After the signing of the treaty of Jan. 9 the French Government made reservations as to the right of pre-emption of the same nature as the reservations that M. Ribot insisted upon in 1890, which induced active negotiations that had no definite outcome. The right of pre-emption claimed by France was first formulated in a letter of Col. Strauch, President of the International Association of the Congo, dated April 23, 1884, and Jules Ferry's reply. On May 31, 1884, M. Ferry, the French Minister of Foreign Affairs, notified the powers of this agreement in a circular letter. After the Independent State of the Congo succeeded to the possessions of the Congo Association there was an exchange of views in April, 1887, in regard to the character of the agreement. When King Leopold entered into the convention of 1890 looking to Belgian annexation of the Congo M. Ribot, then French Minister of Foreign Affairs, called for an explanation acknowledging that the Congo State would not be able to cede its possessions to Belgium without imposing upon the latter the obligation to recognize France's right of pre-emption. After M. Bourée, French minister in Brussels, had renewed the reservations of his Government, M. d'Anethan, the Belgian minister in Paris, wrote on Jan. 13, 1895, that the obligations of the International Association had passed to the Congo State, and in passing to Belgium would acquire still further guarantees.

On Feb 5, 1895, a treaty was signed at Paris

by Baron d'Anethan and M. Hanotaux. In the first article the Belgian Government recognizes that France has a right of pre-emption over its possessions on the Congo in case of their alienation, by sale or exchange, in whole or in part; previous to any exchange of territory or placing of territories in the hands of a foreign state or a foreign company invested with rights of sovereignty preliminary negotiation with the Government of the French Republic must take place. In the second article the Belgian Government declares that there shall never be gratuitous cession of any territory. The third article explains that these arrangements apply to the whole of the territories of the Belgian Congo. Added to the text of this agreement is a declaration defining the boundary line in Stanley Pool, which is the median line except at the island of Banu, which shall belong to France, on condition that no military establishment shall be created there.

**Expansion of the State.**—The rout of the Arabs gave free scope to the Congo State to extend its influence to its remotest frontiers. Not only have the Arab rulers in the Manyema country been overthrown, but the slave-traders on the northern frontier and throughout the Welle districts have been driven out. Katanga also has been occupied. The native populations have improved in their manners at a rapid rate wherever the rule of the Free State has been established, and in return for the benefits of civilization and commerce they are being gradually brought to participate in the costs of civilized rule by the establishment of taxes and the formation of military contingents. By creating a native militia the State can save the heavy expense of maintaining a mercenary soldiery enlisted in West Africa. The camps of Kassongo and Douanga have been fortified and garrisoned with trained native soldiers at small expense. The same material is used largely in the defensive occupation of the northeastern provinces, which was deemed necessary in view of the incursions of the Mahdists. Late in 1894 the fortified post of Mundu, commanded by Capt. de Langhe, was attacked by 4,000 Mahdists and their auxiliaries, but it was successfully defended and the assailants were repeatedly repelled by the small disciplined force, and finally routed and driven from their camp at Egaru, although some had the newest rifles. Capt. Christiaens was killed. The Congo officials have made allies of the strongest sultans in the Welle district, who must now depend upon the Congo State alone to obtain arms to defend themselves against marauding bands from the north. In the spring of 1895 the Mahdists attacked another post in the Akka district, and in a desperate fight killed Lieut. Cassart and 19 men. The authority of the Congo State, however, was so firmly established that only isolated posts were in danger. Charles Stokes, a British trader who was once a missionary, for a long time supplied the rebels against the authority of the Congo State and all the slave-raiders of the upper Congo with arms and ammunition, in which traffic he amassed great wealth. Commandant Lothaire, arriving unexpectedly at Kilunga, in the region of the upper Congo, found arms that Stokes had brought and a letter to the chief Kibange, in which the trader announced that he would come to aid in



repelling the Belgian forces. He fled before the place was captured, but was overtaken and brought back, tried by court-martial and hanged. The British Government, though not inclined to question the justice of the sentence or the quality and abundance of the evidence, made representations on the assumption that he ought to have been taken to Boma and tried in the civil courts. The attitude of the British Government was not cordial after the canceling of the main provisions of the Anglo-Congo treaty of May 7, 1894, out of consideration for the protests of France, and it became less so when the French right of pre-emption, the validity of which had been persistently denied by English statesmen, was embodied in a formal treaty.

**CONGREGATIONALISTS. Statistics of American Congregationalists.**—The "Congregational Yearbook" for 1895 gives the following summaries of the statistics of the Congregational churches in the United States: Number of churches, 5,342; of ministers, 5,287; of members, 583,539; of additions during the year on confession of faith, 38,853; of baptisms during the year, 17,705 of adults and 12,500 of infants; of families, 405,821; of Young People's Societies of Christian Endeavor, 3,640, with 204,085 members; of members of Sunday schools, 677,935; average attendance on Sunday schools, 420,603. Amount of contributions returned by 4,549 churches: For foreign missions, \$374,627; for education, \$233,758; for church building, \$94,366; for home missions, \$584,027; for the American Missionary Association, \$145,643; for Sunday schools, \$56,154; for ministerial aid, \$26,769; other benevolent contributions, \$674,767; making a total of such, \$2,190,111. Amount given in legacies, \$749,517. Amount contributed for home expenditures by 4,579 churches, \$7,035,307. Benevolent contributions of Sunday schools, \$132,341. Of the churches, 4,067 are returned as "supplied" and 1,275 as "vacant"; of the pastors, 3,480 as engaged in regular pastoral work and 1,807 as without charge. The tables of "fifth-year statistics" give lists of 4,417 houses of worship, having a total valuation of \$43,436,243; 2,032 parsonages, valued at \$4,580,239; 1,022 local invested funds, amounting to \$3,881,750; and 3,592 churches, paying an aggregate of \$4,041,727 for pastors' salaries; average salary of the pastors \$1,125.

**Societies.**—The Congregational Education Society received in 1894, including a balance of \$5,103 from the previous year, \$179,727, and expended \$178,807. It aided, in the student department, about 330 regular beneficiaries, besides about 50 of foreign birth, who were preparing to be home missionaries to their own people in the United States; in the college and academy department, 8 colleges and 6 academies; and in the "New West" department, the Salt Lake College in Utah, a training school at El Paso, 5 academies, and 9 mission schools, in the amount of \$20,000. The Slavic department of Oberlin Seminary, which has been receiving \$3,000 annually from the society, has furnished 15 graduates, who are now pastors and missionaries.

The American Congregational Association returns the value of its Congregational House as \$501,000. Its present debt is \$146,000. The

debt was reduced during the year by \$7,000. The whole number of volumes in its library is: Books, 33,648; pamphlets, 59,133; periodicals (not including unbound newspapers), 40,237.

The year's contributions to the Congregational Sunday School and Publishing Society, as recorded in the "Congregational Yearbook" for 1895, were 52,288, while its available income from all sources was \$72,202. It aided in 1894 in the organization of 478 Sunday schools, while during the same year 73 Congregational churches grew out of the schools organized by its missionaries.

The 7 theological seminaries (Andover, Bangor, Chicago, Hartford, Oberlin, Pacific, and Yale) returned for the year 1894-95 58 professors, 27 instructors and lecturers, 23 resident licentiates or fellows, 16 members of the advanced or graduate class, and 459 undergraduate students.

**Home Missionary Society.**—The sixty-ninth annual meeting of the Congregational Home Missionary Society was held in Saratoga, N. Y., June 4 to 6. Gen. O. O. Howard presided. The financial statement showed that the society had begun the year with a debt of \$87,937. The receipts from the ordinary sources had been \$402,756, while the auxiliaries had raised and expended on their own account \$224,942. The total resources for the work of the society (including the cash on hand at the beginning of the year) were \$645,911. The expenditures, by the society itself and by the auxiliaries in their several fields, and including \$11,070 cash in hand for drafts payable at the end of the year, had been \$690,064. The fiscal year was closed with a net indebtedness of \$132,140. Eleven hundred and ninety-seven home missionaries had been employed in 45 States and Territories. Of these, 484 had been in New England, 154 in the Middle States, 106 in the Southern States, 114 in the Southwestern States, 971 in the Western States and Territories, and 195 on the Pacific coast; 997 had been pastors or stated supplies of single congregations, while 617 had ministered to two or three congregations each, and 411 had extended their labors over still wider fields. The total number of churches and stations regularly supplied by them was 4,104, besides many supplied at intervals. The number who had preached in foreign languages was 227—51 to Germans, 111 to Scandinavians, 27 to Bohemians, 6 to Poles, 15 to French, 1 to Mexicans, 3 to Italians, 2 to Spaniards, 2 to Finns, 3 to Danes, 3 to Armenians, 2 to Jews, and 1 to Greeks. The additions to the churches, so far as could be ascertained, had been 13,040, of whom 8,693 were on confession of faith; 116 churches had been organized and 34 had come to entire self-support; 68 houses of worship had been completed and 160 largely repaired or improved.

The thirteenth annual meeting of the Woman's Department was held at the same time with the meeting of the general society. The secretary reported a loss of more than \$1,500 in the year's receipts for the whole work. The gifts in cash had been \$57,674; besides which boxes and packages had been received and sent out to the estimated value of \$72,832. A paper on "Open Doors," read by Secretary Washington Choate,

invited attention to the opportunities for missionary work in Utah, New Mexico, Arizona, southern California, and Texas. A special paper was read by Secretary J. B. Clark on the financial condition of the society. A plan was adopted for raising a sufficient amount to pay the debt of the society by 1,400 subscriptions of \$100 each; and several subscriptions were made upon it.

**Church Building Society.**—The forty-second annual meeting of the Congregational Church Building Society was held in New York Jan. 10. The treasurer reported an increase both in the receipts and in the number of contributing churches. The receipts were \$155,138, or \$8,086 more than those of the previous year, and the number of contributing churches was 2,378, or 240 more than in any previous year. Aid had been given toward the completion of 54 parsonages, in which, by means of loans of \$21,750, property valued at \$62,115 had been brought into use; and 103 houses of worship, in which \$339,722 of church property had been secured by advancing \$70,758. The average cost, including lots, of the parsonages was about \$1,150, and the average parsonage loan about \$403. The average cost of the churches completed was \$3,298, and the average aid \$694. Of the churches aided, 8 had been given loans only, 21 loans and grants, and 82 grants only.

**American Missionary Association.**—The forty-ninth annual meeting of the American Missionary Association was held at Detroit, Mich., in October. The receipts for the year had been \$307,547, and the expenditures \$337,334. The deficit, \$29,787, added to the debt, \$66,301, brought over from the previous year made the present indebtedness of the society \$96,088. In addition to the ordinary receipts, the association had received, as income from the Daniel Hand fund, the sum of \$45,275 and endowment funds to the amount of \$4,810, which made its total income \$357,632. Notwithstanding the large debt, the present rate of annual expenditure was \$50,000 less than it had been three years previously. Some of the schools and missions had been closed, and those which remained were suffering in efficiency and power and in the compass of their work. The following statistics were presented of the educational and missionary work of the society: Educational work South—higher institutions, 6; normal and graded schools, 39; common schools, 29; instructors, 405; pupils, 11,981. Church work South—churches, 198; missionaries, 138; members, 10,476; added during the year, 1,346; Sunday-school scholars, 12,715. Mountain work (included above)—churches, 51; members, 4,521; schools, 17; pupils, 2,084; teachers and missionaries, 62; ministers, 22. Work among the Indians—churches, 14; members, 905; schools, 21; missionaries and teachers, 80; pupils, 578; Sunday-school scholars, 1,400. Work among the Chinese—schools, 20; teachers, 36; pupils, 1,011; number of Christian Chinese, 300; professing faith in Christ during the year, 40. General summary—schools, 117; pupils, 13,732; missionaries, 649; churches, 212; church members, 11,381; Sunday-school scholars, 15,289. Forty-two new churches, with more than 1,000 members, had been organized in the South and West. The

out stations connected with the work among the Indians—which usually represent a house occupied by a Christian Indian and his wife, and a school and a church, or, perhaps, a circuit of churches—are situated in 5 different States, and reach probably not far from 20 tribes. Twenty missionaries occupied these out stations, and, it was estimated, came in contact with about 50,000 Indians every year. A new mission had been opened during the year, by the aid of funds contributed especially for that purpose, among the Crow Indians. Missionary work had been resumed among the Eskimos in Alaska, with manifestations of considerable religious interest among the people, and an enrollment of 142 and an average attendance of 108 in the schools. The whole number of additions during the year to the membership of the churches in the South and West was 1,425. An increase of churches and of members had taken place during the year in the "mountain work," or the work among the people of the mountain region of the Southern States. Of the pupils in the schools in the South, 91 were classed as theological, 63 as collegiate, 198 as collegiate preparatory, 1,376 as normal students, 2,621 as grammar-school pupils, 3,170 as intermediate, and 4,552 as preparatory.

In the industrial departments of the schools are taught shoemaking, carpentry, printing, tinning, cabinetmaking, wagon making, blacksmithing, sewing, cutting, nursing, and other like arts. One normal school in the South, that at Orange Park, Fla., is especially mentioned in the report as having been "made an object of determined attack by the State Superintendent of Public Instruction, who has influenced the enactment of laws which make it a criminal offense not only to allow a white student in the same school, but also for a white teacher to be boarded under the same roof with colored pupils. The law is so vicious in intent, and so significant in its purpose, that, after legal opinions of eminent counsel, our committee have found no other way but to test its validity; not in a spirit of disobedience to law, but with a determination to have the deliverance of the highest possible authority upon a law which we consider unchristian."

**American Board.**—The eighty-sixth annual meeting of the American Board of Commissioners for Foreign Missions was held in Brooklyn, N. Y., Oct. 15 to 18. The treasurer's report showed that the total receipts for the year had been \$716,837, or \$11,704 more than in the previous year. Among the details of the receipts, a gain of \$38,222 was returned in the regular contributions from churches and individuals, a decrease of \$14,628 in special gifts, and a decrease of \$33,333 in legacies, the whole amount received from this source being the smallest sum derived from it, with one exception, in five years. Other items in the receipts were \$9,031 from interest, \$41,367 from the legacy of Asa Otis, and \$47,071 received for the debt. The expenditures had been \$715,232. The debt, which amounted to \$116,237 at the beginning of the year, had been reduced to \$114,632. The foreign missionary work comprised, in 20 fields in Europe, Asia, Africa, and Oceania, 103 stations, 1,163 out stations, 1,461 places for stated preach-



ing, with average congregations of 72,000 persons. In these stations were employed 187 ordained missionaries, 16 of whom were physicians, 24 unordained physicians (including 11 women), 5 male assistants, 367 women (including the 11 physicians)—making the whole number of laborers from the United States 572—242 native pastors, 500 native preachers and catechists, 1,734 native school-teachers, and 613 other native laborers. The whole number of native laborers was 3,107, and the whole number of American and native laborers 3,679. The 461 churches returned 44,413 church members, of whom 3,206 had been added during the year; and the whole number of church members from the beginning, as nearly as could be learned, was 131,914. The educational department returned 16 theological seminaries and station classes, 64 colleges and high schools, 60 boarding schools for girls, and 1,025 common schools, with, in all, 53,615 persons under instruction. Of these, 205 were in the theological schools and station classes and 4,174 in the colleges and high schools.

The condition of the finances was the most important subject claiming the attention of the meeting. As with most of the other missionary societies, the contributions had greatly fallen off during the past few years, and the board had been able to sustain its work without contraction only by drawing upon two large special funds which had been bequeathed to it. These funds were now exhausted, or nearly so, and the question had to be faced of how to carry on the widely extended missionary work without diminution. Co-operating committees, representing different parts of the country, appointed in the previous year to assist in securing increased contributions, had brought in reports that were called encouraging, but could not make sure that the required total of income would be obtained. In a paper on "The Next Step" Secretary Judson Smith insisted that there should be no reduction, and the meeting unanimously resolved

That every member of every Congregational church and every friend of the board in the land engage in continuous prayer for the board and its work and for the personal guidance of the Holy Spirit in determining the duty of individual benefactions.

That the condition of the heathen world be renewedly presented by every pastor to every congregation and the obligation of Christians to rescue the perishing; that the spiritual destitution of the world become a burden on the hearts of Christian people; that pastors reconsecrate themselves to missionary endeavor.

That every Church be constrained to make a contribution according to its means, and that plans be adopted by each to secure an individual gift from every member.

That, while every effort be made to reduce (remove, if possible) the debt and diminish the expenses, no field be abandoned, and that the necessary financial burden be carried another year with ceaseless prayer to God for speedy relief.

That we seek, through co-operating committees and by every possible agency, for large gifts from prosperous sons and daughters of God to swell the regular receipts and replace the nearly consumed Otis and Sweet legacies.

That applicants for service be encouraged to hope that soon their desire may be gratified, that none be turned away from this chosen service, but in tempo-

rary toils at home hold themselves in readiness for the call to duty on foreign fields.

The work of the co-operating committees was approved, and they were reappointed. Further resolutions were unanimously adopted:

That the expenditure of the Otis legacy to be completed in a few months, leaving the responsibility of the missions which have been aided from this source resting directly upon the treasury; that the pressing needs of all the existing missions, hampered as they have been and well-nigh crippled by the enforced retrenchments and the refused appropriations of the last two years; that the number of gifted and devoted young men and women waiting and asking for missionary appointments; that the perils of the time, calling upon the board and its friends to present a resolute and undaunted front to the difficulties and antagonisms it encounters—that these and other facts demand of the pastors and the churches a far more united and generous response to the calls of the board's officers and of the co-operating committees than has yet been obtained.

That the Prudential Committee, in making the appropriations and expending the resources committed to our hands, is not to be held responsible for disastrous results which may ensue from the insufficiency of those expenditures, and that it be instructed, just so far as is practicable, to restrict its operations within the measure of the means furnished it. For all limitations or sufferings thus occasioned, the churches must answer, which, with the knowledge of the need and the opportunities, and with the needed resources in hand, fail to respond to the call of the Master of their fellow-men, and of the heroic representatives they have sent into the field.

A special committee was appointed to endeavor to secure from individual friends of the board, but without interfering with the co-operating committees and the regular agencies, subscriptions, payable in March, 1896, conditioned on \$115,000, the approximate amount of the debt, being obtained.

**Woman's Board.**—The twenty-eighth annual meeting of the Woman's Board of Missions was held in Boston, Mass., Nov. 6. The report was for nine and one half months. The receipts from contributions and legacies had been \$107,147, while other items made the total receipts from Jan. 1 to Oct. 15, \$115,989. The board had under its care in different fields 120 missionaries, 10 assistant missionaries, 33 girls' boarding schools, 266 day schools in whole or in part, and 157 Bible women. The Inland Home for kraal girls, at Amanzintote, Zululand, afforded shelter to many fugitives, and 197 girls had become members of the school. More than 2,000 girls attended the village day schools in Batticota, Ceylon. At the girls' school in Oodoo-ville, Ceylon, was organized, in 1885, the first Christian Endeavor Society in Eastern lands. There are also in the churches Junior Endeavor Societies, a Young Men's Christian Association, and Helping Hand Societies, in which low-caste, poor women are taught to sew and to read the Bible. The reports of missions in European and Asiatic Turkey and of the Marathi Mission in India summarized the work of 50 missionaries. The American College for Girls, in Constantinople, had given instruction during its fifth academic year to 161 students, of whom 88 were Armenians, 19 Greeks, and 18 Bulgarians, the remaining 36 being divided among 7 different nationalities. Eighty-eight were boarders,

47 were in the college proper, and 114 in the preparatory department.

**Triennial National Council.**—The Congregational Triennial National Council met in Syracuse, N. Y., Oct. 10. The Hon. Nelson Dingley, ex-Governor of Maine, was chosen moderator. The statistical report presented by the secretary, the Rev. Dr. Hazen, showed that the membership of the Congregational churches had increased during the triennium by 58,442, a number larger by 9,000 than in the previous three years, or any three years of the record. The number added on confession of faith was 104,879; the number of infant baptisms, 34,392, almost 6,000 more than in the previous period; the gain in members of the Sunday schools, 51,900; and in members of young people's societies, 58,985, the whole number of Congregational members of these societies being 204,085. The whole number of churches added to the roll was 651, but the net gain of churches was only 356, or 119 a year. When the council met in Boston in 1865 it represented 2,745 churches, with 262,400 members in 23 States and Territories. It was now at home in every State except Delaware, and every Territory except Alaska, had added 2,597 churches to its roll, almost doubling their number, and had gained 320,890 in membership.

The gain of members was largest in the interior where it was 31,077, or 3,500 more than in the East and West combined. In this list Illinois stood first, with 6,994 of increase, and was followed by Michigan, Iowa, Massachusetts, California, and Ohio. Of the gain of churches, 155 were in the interior, 128 in the West, and 73 in the East. Alabama led in it with 55 of increase, and was followed by Oklahoma, Illinois, Michigan, and Wisconsin. The five States having more than 300 churches were Massachusetts, Michigan, Illinois, Connecticut, and Iowa. Massachusetts stood first in the number of members, 109,474, and was followed by Connecticut, 61,357, New York, Illinois, Ohio, and Iowa, each having more than 30,000 members.

The total of benevolent contributions reported for the three years was \$7,244,682. The average per member was \$12.89, or \$4.22 per annum. The influence of the financial situation appeared in the contrast of the small gain of \$124,609 with that of \$1,138,806 during the preceding triennium. The decrease had come into view only during the past two years. The fifth-year statistics showed that the 5,342 churches had 4,417 houses of worship, valued at \$43,446,243, or an average of \$9,792; that 2,032 of the churches had parsonages, valued at \$4,580,239; that 1,022 of the churches had invested funds to the amount of \$3,881,750, and 1,562 churches had debts amounting to \$3,300,796; or, in other words, the invested funds would pay all the debts and leave \$381,000 surplus. A gain of \$55,961 was reported in assets held by the trustees of the council and the Committee on Ministerial Relief, chiefly from legacies. The Church Manual was reported to be completed, with full instructions for the organization and conduct of a church. The report of the committee on church unity included a review of a number of propositions which had been made with reference to that end, chiefly those of the bishops

of the Protestant Episcopal Church, of the Disciples of Christ, of the Christian Connection, and the "New Jersey Declaration" of Congregationalists. The proposition of the bishops, embodying the "four points" of the "Lambeth articles," had failed to be accepted by other denominations on account of the impossibility of agreeing upon the interpretation to be given to "the historic episcopate." A proposal made by the Disciples of Christ was dismissed as impracticable, because it insisted on the baptism of penitent believers by immersion only. It was pointed out that the first steps toward union could best be taken between denominations which were governed by the same polity. The previous National Council had said "that affiliation with our denomination of churches not now upon our roll should be welcomed upon the basis of the common evangelical faith, substantial Congregational polity, and free communion of Christians, without regard to forms or minor differences."

That resolution opened the way fully for fellowship with any Church or Churches that prefer to practice baptism by immersion and only on confession of faith in Christ. It had removed one stumbling-block in the way of union with the Free Baptists. In their case, however, an unsuccessful negotiation for union in Michigan with the regular Baptists had, with other things, made it seem untimely to press the subject at present. There was, however, believed to be a growing sentiment among the Free Baptists in favor of closer union with other bodies, either Baptist or Congregationalist. A more satisfactory correspondence had been had with the Christian Connection, the history of which brought to consideration what was known as the "New Jersey Declaration," concerning which the report continued:

It proposes organic union with the Free Baptists and the Christian Connection, on the basis of the same general faith in the Scriptures, interpreted with Christian liberty. It declares that no change is asked in their customs or faith. It desires that they shall "maintain their teaching as to the manner and subjects of baptism," and it declares that "we are under bondage to no creed, Lutheran, Calvinistic or Arminian, and that our only authority is found in the Holy Scriptures. It does not ask that they "should sink their names or give up their loved organizations or vested interests," and it professes a desire to "accept any terms which they in the exercise of their conscientious rights and their Christian affection could ask," and on such terms it invites correspondence with them. The Declaration concludes with a proposition of a proposed basis of union [for which see the action of the Council following the presentation of the report]:

This paper was sent to the various Congregational State bodies, and has been approved by the Associations or Conferences of Pennsylvania, Michigan, Ohio, Illinois, Indiana, Kansas, Minnesota, Washington, and perhaps of other States.

In accordance with the purpose of this paper, the committee whose names are signed to it were represented at the New Jersey State Convention of the Christian Connection, which body passed very cordial resolutions, recommending further action by their National Convention, which was to meet in Haverhill, Mass., in October, 1894. Your committee were represented at that convention by two of their number, and were most cordially received. Two days were devoted to the discussion of union with



the Congregationalists, and action was finally taken unanimously, recommending "a co-operative union between the Christians and the Congregationalists or any other denomination seeking such union," such union to recognize the parity of the co-operating bodies, and not to be based on doctrinal tests; such co-operative union not to interfere with institutions, churches, conferences, etc., at present organized, but to be concerned with mutual recognition and common service for Christ's kingdom. It was also provided that a commission of 12 members should be formed to act with similar commissions of any other bodies, a two-thirds majority of whom should be assumed to represent the Christian Connection, unless their action is reversed by the Quadrennial Convention." Such a representative Commission was appointed. It was also voted that "the ultimate ideal of Christian union is the union of all the followers of Christ in one body, in an organic union, inspired with the spirit of the Master, existing and acting with single reference to carrying on his work, building up his kingdom, and bringing the world to Christ; and we would encourage and co-operate with any and all measures looking to this end."

While the Christian body seemed disposed to go slowly in the matter of union, so that there might be no union without general agreement and the fullest conference, it was evident that a genuine desire for actual union existed among its members. Their proposal of a co-operative union was for the present purpose, but was regarded as by no means reaching their ideal of ultimate organic union.

The Council resolved

That it be the duty of the Committee on Union with Other Denominations in cases where it may seem wise to this committee to attempt specific union with any particular denomination to conduct negotiations with such denomination by means of persons whom it shall select for such purpose.

That, in particular, this committee be directed to act in conference with the commission appointed by the Christian Quadrennial Convention, with a view to closer co-operative union and, if it seem feasible, organic union. We suggest also particularly that the committee continue the communications with the Free Baptists which have been hitherto in progress.

The Committee on Union with Other Denominations shall be understood to act upon the following basis:

(a) In accordance with the constitution and organic declaration of this National Council, adopted at Oberlin in 1871, declaring the Holy Scriptures "the sufficient and only infallible rule of religious faith and practice, their interpretation thereof being in substantial accordance with the great doctrines of Christian faith commonly called evangelical," and that "the liberty of our churches" affords "the ground and hope of a more visible unity in time to come," we, as Congregational churches, recognize no creed of human origin, no matter how venerable or historically honored by us and by the Christian Church, to have authority over our faith, which authority belongs only to the Word of God.

(b) In any union contemplated those who join together have, accordingly, the right to maintain their conscientious varieties of faith and order.

(c) And, whereas the visible union of Christendom is an object greatly to be desired, and whereas it is our duty to do what we can to secure it, and whereas such union can not be secured by the submission of any, but only by the liberty of all, under Jesus Christ, we do approve, as a proposed basis of such union, the platform of union suggested by the New Jersey Association and approved by a number of our other State bodies, and we direct the Committee on Union with Other Denominations to present it in the following slightly amended form to our sister denom-

inations of evangelical Christians for their consideration:

We propose to other Protestant Evangelical Churches a union, or alliance, based on

1. The acceptance of the Scriptures of the Old and New Testaments inspired by the Holy Ghost as containing all things necessary to salvation, and as being the rule and ultimate standard of Christian faith.

2. Discipleship of Jesus Christ, the divine Lord and Saviour and the Teacher of the world.

3. The Church of Christ, which is his body, whose great mission it is to preach his Gospel to the world.

4. Liberty of conscience in the interpretation of the Scriptures and in the administration of the Church.

Such an alliance of the Churches should have regular meetings of their representatives, and should have for its objects, among others:

1. Mutual acquaintance and fellowship.

2. Co-operation in foreign and domestic missions.

3. The prevention of rivalries between competing Churches in the same field.

4. The ultimate visible union of the whole body of Christ.

And whereas it can not be expected that there shall be a speedy corporate union of the numerous bodies into which the Christian Church of our own land is divided, we do therefore desire that their growing spiritual unity should be made manifest by some form of federation which shall express to the world their common purpose and confession of faith in Jesus Christ, and which shall have for its object to make visible their fellowship, to remove misunderstandings, and to aid their consultations in establishing the kingdom of God in the world; and to this end we invite correspondence with other Christian bodies.

That we commend our brethren who have sought to promote comity of interdenominational organizations in the several States, and request the Committee on Denominational Comity to arrange similar movements in all parts of our land.

When it shall seem proper that a conference of the various denominations be sought, either for comity or for closer union, this shall be provided for by the joint action of the two committees, each consenting thereto.

During the deliberations on these measures the Council was addressed by the Rev. J. B. Weston, D. D., chairman of the Committee on Union of the Christian Quadrennial Convention, explaining the position of that body, and expressing its desire for a closer fellowship. In the case of the Alabama State Convention, which the Council had hitherto declined to recognize, because including only white churches, it was not organized as representing all the Congregational churches of the State, the Council found that it had modified its constitution, "adopting the principle of the Council of 1892 of 'equal rights for all Disciples of Christ of every race,'" and had invited the Congregational Association of Alabama (colored) to unite with it on that basis, which invitation—although the two bodies had once sat as one—had not yet been finally accepted. Present recognition was given to the General Convention of Alabama pending further action upon the recommendation of the Council that negotiations for union with the churches of the Alabama Association be resumed," and that both parties, in the spirit of mutual concession, earnestly endeavor to bring all the Congregational churches of the State into one fraternal organization." The following resolution, with reference to re-

cent legislation in Florida, was adopted by a unanimous rising vote:

*Whereas*, The State of Florida in a recent enactment has made it a criminal offense for our missionary teachers to instruct in schools, white and colored pupils without caste distinctions; and for any person to patronize such schools; and

*Whereas*, The State Superintendent of Education has given public notice that he will subject the teachers of the American Missionary Association to criminal prosecution in case they live in the same building with their pupils or teach white and colored pupils without distinction of caste:

*Therefore*, The National Council of Congregational Churches of the United States, regarding the enactment not only as repugnant to Christian principle, but also as opposed to our civil rights guaranteed by the Constitution of the United States to all citizens, do call upon our representative, the American Missionary Association, to unceasingly and courageously resist this wicked enactment in all lawful ways, and to exhaust all legal measures to defend these guaranteed rights and privileges, and to carry if necessary this case to the Supreme Court of the United States, for adjudication, and we pledge to the association in pursuance of this our hearty co-operation.

A rule laid down by the Council nine years before for the preservation of a high standard of character and education in the ministry was reaffirmed. Resolutions in reference to the "Armenian atrocities" and outrages on missionaries in China, besides expressions of condemnation, contained a call on the United States Government more thoroughly to protect the lives and interests of its citizens abroad.

**British Congregationalists.**—The returns of the British Congregational churches, officially furnished to the "Yearbook" for 1895, show that there were in England and Wales in 1894 4,592 Congregational places of worship, with accommodation for 1,613,722 persons, an increase for the year of 43,701 sittings. In Scotland there were 99 churches, and in Ireland 27, with 96 evangelistic stations. In the British colonies there were 818 churches, an increase of 11. In the district covered by the London Congregational Union there were 375 churches, with accommodations for 218,467 persons. No returns as to church membership are furnished by the associations, but there were 2,804 ministers in England and Wales, 112 in Scotland, 27 in Ireland, and 430 in the colonies. Twenty-six new churches were formed during the year, including 10 in the colonies, and 44 new chapels were opened, 29 enlarged, and 10 closed.

**Congregational Union of England and Wales.**—The sixty-third Annual Assembly of the Congregational Union of England and Wales was held in London, beginning May 6. The Rev. U. R. Thomas, of Bristol, presided. The report of the committee contained a revision (the fourth) of the constitution, in which provision was made for the enlargement of the privileges of membership, giving the committees a more open constitution; substituting a division of England into 8 representative districts for the present division into 4; and proposing the institution of 2 or even more autumnal meetings of the Union. The revision was submitted, with the suggestion that consideration of it be deferred. This was done. The belief was expressed in the report on secondary education that the report of the royal com-

mission would lead to a great extension of secondary education, which would do much to free it from the denominational bias and taint. A resolution concerning the "atrocities" in Armenia called on the Government to continue its remonstrances with the Sublime Porte until the administration of the Armenian provinces has been thoroughly reformed. A resolution was unanimously adopted in favor of the local option bill (relative to the sale of intoxicating liquors). A special committee was appointed in view of the recent letter of the Pope, to prepare an address to the Congregational churches on the subjects of sacramentalism, ecclesiasticism, and reunion. The subject of the duty of the Congregational churches to promote progressive work, especially in large towns, having been introduced and discussed, the committee was authorized to prepare a scheme for church extension in such towns. A resolution of sympathy with Madagascar stated that "the assembly can only contemplate with pain the course by which not only the peace but the national independence of Madagascar have been put in imminent peril. The assembly desired to express its affectionate sympathy with the Malagasy churches in the trial through which they were passing, and earnestly prayed that the lives and liberties of the people might yet be spared." Copies of the resolution were ordered sent to the Minister for Foreign Affairs and to the writers of the recent appeal from Madagascar addressed to the secretary of the London Missionary Society. The subjects, relating to missions, were discussed during the meetings of "Modern Theology in Relation to Christian Missions," "Change of Methods in Missionary Work," and "The Development of the Resources of Our Churches for Missionary Purposes." A course of lectures on various aspects of missions was announced for the next winter.

The autumnal assembly of the Union was held at Brighton, beginning Sept. 30. The Rev. U. R. Thomas presided, and delivered an opening address on "Catholicity and Congregationalism." He said catholicity was indigenous to true Congregationalism. There was little danger of any earnest effort for the reunion of Christendom being ever disparaged from the chair of that Union. But when the pious opinions of the Pope of Rome, the tentative proposals of the Archbishop of Canterbury, and the renewed and reiterated discussions of the conferences at Grindelwald had pretty well succeeded in beating the word "reunion" on the drum of the Church's ear, he might be pardoned for suggesting that catholicity must precede reunion. It would be unspeakably better to have catholicity without reunion than reunion without catholicity. Catholicity was not catholicism that would monopolize the title Catholic, and the great party in another Church that appropriated the name were, and always had been, the chief hinderers, and the most formidable antagonists of catholicity. Resolutions were passed by the assembly, declaring its strenuous opposition to the proposals of the archbishops and the Roman Catholic committees to seek increased grants of public funds for schools under denominational management and for teachers whose appointment or dismissal would be vested in unrepresentative hands.



sentative bodies, regarding them as an attempt, under the guise of assistance to so-called voluntary schools, to create a fresh endowment of religious denominations by the state; and expressing its trust that all Congregationalists will present a united front in resisting such proposals, and will maintain the principle that schools supported by the people must be governed by the people. The appointment of a national committee was recommended, to include representative men of every denomination, whose duty it should be to resist any further endowment of sectarian schools, and to demand the extension of school boards throughout the country, providing unsectarian schools within reach of all the people. The protest of the assembly was renewed against the Turkish treatment of Armenia, and the Government was strenuously appealed to to provide efficient measures of relief, the appointment being suggested of a high commissioner for Armenia—not an official of the Turkish Empire, not even an Ottoman subject—who shall be pledged to protect the Christian population of the country, and who shall be solely responsible to, and sustained by the European powers. The loyalty of the assembly to the principle of religious equality was reaffirmed, and its pledge renewed to continued efforts to secure the application thereof to the three kingdoms. An encyclical letter was ordered prepared for pastors concerning the attitude they should assume and the duties they should attempt to fulfill in the face of the special theological and ecclesiastical questions and difficulties of the day. The Bechuana chiefs, Prince Khama, Sebele, and Bathven, were welcomed to the meeting; its sympathy was tendered them “in their effort to keep their people free from the evils of the drink traffic and to lead them into the life and liberty of Christ”; and hopes were expressed that the Government might “find some way to meet them in their desire to remain under the direct protectorate of the British Crown.” Negotiations were carried on during the year with the Evangelical Union of Scotland for union with the Congregational churches, the consummation of which, it is confidently believed on both sides, will be effected in no very long time. Resolutions favoring union were adopted at a representative meeting of members of the Evangelical Union held in Glasgow in the spring; and at the annual meeting of this body in October measures were adopted looking to a completion of the negotiations for union and the carrying of them into effect. The Scottish Congregational Union in April voted to postpone the question of union for one year on condition of the opponents of the measure pledging themselves to accept whatever might be determined upon at the next annual meeting of the body.

**London Missionary Society.**—The business meeting of the London Missionary Society was held May 6. The financial report showed that the ordinary income had been less than the ordinary expenditure by £19,418, and that the balance accumulated against the society in two years amounted to £42,555. As such a debt would have absorbed more than all the remainder of the society's available resources, and would have made it impossible to carry on the

ordinary work, it had been decided to make this debt the first charge upon the Centenary fund. As the amount received up to the time of the meeting had reached £60,000 (£60,200), that amount had been wiped off, and the residue of the fund as it came in would be utilized for restoring the working capital or reserve fund of the society, and for providing a fund for the erection of buildings in the mission field. Under ordinary circumstances a considerable amount would have been expended in providing accommodation for missionaries, but the money was withheld, to the great risk and inconvenience of the society's agents, and injury to their work. It was estimated that to enable the society to maintain its present staff in the field an increase of income to the extent of £20,000 a year would be required. To close the history of a century remarkable for its unique efforts with an income so much less than the expenditure as to suggest the necessity for prompt contraction of the area of work was far from satisfactory. This, however, was the condition of the society.

It was represented at the meeting of the woman's association that since the association was founded, twenty years before, 103 women workers had gone out, and 69 were now actively engaged—33 in India, 21 in China, 6 in Madagascar, 2 in South Africa, and 4 in the South Sea, Samoa, and Raratonga. They had also many native workers and teachers. The London Missionary Society had the largest number of medical missionaries of any society, and the gifts to their society from natives of China were larger than to any other missionary association. The work of the missionaries included the care of hospitals and leper asylums having 421 beds, which in 1894 received 3,700 patients; the care of 31 dispensaries, which had treated 121,791 patients, not including return visits; and medical missionary tours from village to village. The women's work included the conduct of boarding schools, day schools, and orphanages for girls, with 56,000 enrolled pupils; the training and superintendence of native women helpers, 155 of whom were Bible women, supported by the Bible Society, and 335 teachers; and the zenana and house-to-house visitation. A successful part of the medical work in Madagascar—in which the Society of Friends co-operates—is the training of young men as doctors and of young women as midwives and nurses. Forty young women were in the hospital now undergoing such training. Similar work was done in China, where a woman's hospital was erected and maintained till her death, a year previously, by the wife of Li-Hung-Chang. Three hundred wounded soldiers from Port Arthur, after a month's travel overland, had been received into the Tientsin hospitals.

A convention organized to celebrate the centenary of the society was opened with a young people's meeting, Sept. 21. Of the progress made by the society during the century of its existence, the home secretary, Rev. A. N. Johnson, said that its present income was £180,000 a year, as compared with £11,000 at the beginning of the century; that £30,000 were raised yearly on its foreign stations; that it had sent out more than 1,000 missionaries during the past one hundred years, including such men as Mof-

fat and Livingstone: and that it had now 258 missionaries in different parts of the world. The Centenary fund which the society had undertaken to raise in commemoration of this event, to be applied to educational and other special purposes, had reached £76,160. Special reports were made concerning the condition of the missions and the people in Samoa, where, although life was still in many respects not in conformity with the requirements of the Gospel, many social reforms had been effected, and the community, as a whole, had been Christianized; the Hervey Islands, where there were 20 churches, with accompanying schools and homes for missionaries, 2,600 members in fellowship, and 1,950 pupils; New Guinea, where the work of conversion was advancing gradually; Madagascar, where, with 39 English missionaries and more than 1,000 native pastors, there were 1,406 churches or other buildings in which services were held connected with the society, in addition to numerous auxiliary agencies of a religious and educational nature, and adherents numbered by hundreds of thousands; India; South Africa, and China. Papers were read on "The Duty of the Missionary Society to the Children of Converts," "Schools as a Means of preparing the Way of the Lord," "The Need for Industrial Missions," "Openings for Christian Work among Students and Educated Men in India," and "Medical Work in Connection with Missionary Enterprise." A meeting was held for the discussion of woman's work in the mission field at which papers were read on the home life and position of women in heathen lands, the difficulties of missionary work in heathen homes, and the position and opportunity of the European woman missionary. A special committee reported, as the result of an examination of the whole of the society's expenses, home and foreign, that they had found no appreciable waste. Some criticisms of the methods of the missionaries having been made at the meeting of the British Association by Mr. W. M. Flinders Petrie and others, in which it was intimated that they interfered too much and unwisely with harmless native customs, the Rev. Dr. Bruce said they were actuated by a spirit of tenderness and gentleness toward anything that was at all simple or moral among the natives. There were, however, some practices that they were bound to speak against, and in doing so they were only following the footsteps of the Apostle Paul, who did not hesitate to disturb ancient customs wherever he found them opposed to righteousness. The Rev. J. Chalmers, from New Guinea, said he had personally baptized naked people. The Rev. S. J. Whitney, from Polynesia, had known only one missionary who insisted on the people wearing English clothes.

The meetings were participated in by three Christian African chiefs, and were attended as visiting delegates by representatives of twenty other missionary societies.

The committee of the English Congregational Union proposes to follow up the impression produced by the recent centenary of the London Missionary Society with a course of lectures on missionary themes, and a series of conferences and meetings for prayer.

**Colonial Missionary Society.**—The fifty-ninth report of the Colonial Missionary Society mentions a new departure which had been made in the direction of giving counsel and aid to native churches founded by the London Missionary Society. Arrangements had been made for visitations to the churches of Jamaica, British Guiana, Natal, and the Cape Colony. Payments and loans had been made to a number of colonial churches and aid offered to the West Australian churches and to churches in Canada and Newfoundland. The year's income was £2,539, an increase, and a balance of £529 was left.

**Church Aid Society.**—The Congregational Church Aid Society had assisted 958 churches, or 16 less than in the previous year, connected with which were 583 pastors and evangelists, an increase of 18, and 34,355 members, an increase of 1,266. The income of the society had been £28,452, or £829 more than in the previous year, and the expenditure £28,358, an increase of £937. The aided churches raised £76,263, or £17,910 less than in the previous year; and there had been paid in grants £23,487, an increase of £375.

**Congregational Union of South Africa.**—At the annual assembly of the Congregational Union of South Africa, held at Grahamstown, the recent legislation as affecting the native churches was unanimously condemned as unjust. Instead of establishing a separate institution for the training of a native ministry, it was decided to send the students to Lovedale and make a special contribution to the institution there, in addition to the regular charges. Measures were taken concerning the life assurance of ministers, and to promote the "forward movement."

**The Congregational Churches in Madagascar.**—Madagascar has been one of the most fruitful fields of the operations of the London Missionary Society. After many years of arduous labor, with twenty-six years of fierce persecution, a strong Church had been built up in the Hova kingdom, and Congregational Christianity had substantially become the religion of the nation. Much interest has been attached to the question of what would be the fate of this Church after the French conquest. The Rev. W. E. Cousins, missionary, was able to make a pleasant forecast at the meeting of the London Missionary Society for the future of the Madagascar Protestants. Through twenty-six years of persecution there, he said, the native Christians kept their churches alive, and that fact might assure them as to their future. These people were not to be lightly turned away from the religion they possessed; and the speaker still clung to the belief that even under a French protectorate they would be able to continue their Christian work. Full protection and complete toleration were guaranteed by the Anglo-French Convention, and they had the assurance of the highest French officials to the same effect. He believed the French would find it politic not to persecute the Protestants, who formed the most influential part of the population; and that the people of central Madagascar, who were practically all Christians, would carry the Gospel throughout the whole island. It would be necessary, however, to give more attention to the teaching of the French language. Nine tenths of the population of the whole island are still heathens.



**CONGRESS.** The third session of the Fifty-third Congress began Monday, Dec. 3, 1894. The President sent in his annual message as follows:

*To the Congress of the United States:*

The assemblage within the nation's legislative halls of those charged with the duty of making laws for the benefit of a generous and free people impressively suggests the exacting obligation and inexorable responsibility involved in their task. At the threshold of such labor now to be undertaken by the Congress of the United States, and in the discharge of an executive duty enjoined by the Constitution, I submit this communication, containing a brief statement of the condition of our national affairs, and recommending such legislation as seems to me necessary and expedient.

The history of our recent dealings with other nations, and our peaceful relations with them at this time, additionally demonstrate the advantage of consistently adhering to a firm but just foreign policy, free from envious or ambitious national schemes and characterized by entire honesty and sincerity.

During the past year, pursuant to a law of Congress, commissioners were appointed to the Antwerp Industrial Exposition. Though the participation of American exhibitors fell far short of completely illustrating our national ingenuity and industrial achievements, yet it was quite creditable, in view of the brief time allowed for preparation.

I have endeavored to impress upon the Belgian Government the needlessness and positive harmfulness of its restrictions upon the importation of certain of our food products, and have strongly urged that the rigid supervision and inspection under our laws are amply sufficient to prevent the exportation from this country of diseased cattle and unwholesome meat.

The termination of the civil war in Brazil has been followed by the general prevalence of peace and order. It appearing at an early stage of the insurrection that its course would call for unusual watchfulness on the part of this Government, our naval force in the harbor of Rio de Janeiro was strengthened. This precaution, I am satisfied, tended to restrict the issue to a simple trial of strength between the Brazilian Government and the insurgents, and to avert complications which at times seemed imminent. Our firm attitude of neutrality was maintained to the end. The insurgents received no encouragement of eventual asylum from our commanders, and such opposition as they encountered was for the protection of our commerce and was clearly justified by public law.

A serious tension of relations having arisen at the close of the war between Brazil and Portugal by reason of the escape of the insurgent Admiral da Gama and his followers, the friendly offices of our representatives to those countries were exerted for the protection of the subjects of either within the territory of the other.

Although the Government of Brazil was duly notified that the commercial arrangement existing between the United States and that country based on the third section of the tariff act of 1890 was abrogated on Aug. 23, 1894, by the taking effect of the tariff law now in force, that Government subsequently notified us of its intention to terminate such arrangement on the 1st day of January, 1895, in the exercise of the right reserved in the agreement between the two countries. I invite attention to the correspondence between the Secretary of State and the Brazilian minister on this subject.

The commission organized under the convention which we had entered into with Chili for the settlement of the outstanding claims of each government against the other adjourned at the end of the period stipulated for its continuance, leaving undetermined a number of American cases which had been duly presented. These claims are not barred, and negotiations are in progress for their submission to a new tribunal.

On the 17th of March last a new treaty with China

in further regulation of emigration was signed at Washington, and on Aug. 13 it received the sanction of the Senate. Ratification on the part of China and formal exchange are awaited to give effect to this mutually beneficial convention.

A gratifying recognition of the uniform impartiality of this country toward all foreign states was manifested by the coincident request of the Chinese and Japanese governments that the agents of the United States should, within proper limits, afford protection to the subjects of the other during the suspension of diplomatic relations due to a state of war. This delicate office was accepted, and a misapprehension which gave rise to the belief that in affording this kindly unofficial protection our agents would exercise the same authority which the withdrawn agents of the belligerents had exercised was promptly corrected. Although the war between China and Japan endangers no policy of the United States, it deserves our greatest consideration, by reason of its disturbance of our growing commercial interests in the two countries and the increased dangers which may result to our citizens domiciled or sojourning in the interior of China.

Acting under a stipulation in our treaty with Korea (the first concluded with a Western power), I felt constrained at the beginning of the controversy to tender our good offices to induce an amicable arrangement of the initial difficulty growing out of the Japanese demands for administrative reforms in Korea, but the unhappy precipitation of actual hostilities defeated this kindly purpose.

Deploring the destructive war between the two most powerful of the Eastern nations, and anxious that our commercial interests in those countries may be preserved and that the safety of our citizens there shall not be jeopardized, I would not hesitate to heed any intimation that our friendly aid for the honorable termination of hostilities would be acceptable to both belligerents.

A convention has been finally concluded for the settlement by arbitration of the prolonged dispute with Ecuador growing out of the proceedings against Emilio Santos, a naturalized citizen of the United States.

Our relations with the Republic of France continue to be such as should exist between nations so long bound together by friendly sympathy and similarity in their form of government.

The recent cruel assassination of the President of this sister republic called forth such universal expressions of sorrow and condolence from our people and Government as to leave no doubt of the depth and sincerity of our attachment. The resolutions passed by the Senate and House of Representatives on the occasion have been communicated to the widow of President Carnot.

Acting upon the reported discovery of Texas fever in cargoes of American cattle, the German prohibition against importations of live stock and fresh meats from this country has been revived. It is hoped that Germany will soon become convinced that the inhibition is as needless as it is harmful to mutual interests.

The German Government has protested against that provision of the customs tariff act which imposes a discriminating duty of one tenth of 1 cent a pound on sugars coming from countries paying an export bounty thereon, claiming that the exaction of such a duty is in contravention of Articles V and IX of the treaty of 1828 with Prussia.

In the interests of the commerce of both countries, and to avoid even the accusation of treaty violation, I recommend the repeal of so much of the statute as imposes that duty, and I invite attention to the accompanying report of the Secretary of State containing a discussion of the questions raised by the German protests.

Early in the present year an agreement was reached with Great Britain concerning instructions to be given to the naval commanders of the two governments in



Bering Sea and the contiguous north Pacific Ocean, for their guidance in the execution of the award of the Paris Tribunal of Arbitration and the enforcement of the regulations therein prescribed for the protection of seal life in the waters mentioned. An understanding has also been reached for the payment by the United States of \$425,000, in full satisfaction of all claims which may be made by Great Britain for damages growing out of the controversy as to fur seals in Bering Sea, or the seizure of British vessels engaged in taking seal in those waters. The award and findings of the Paris tribunal to a great extent determined the facts and principles upon which these claims should be adjusted, and they have been subjected by both governments to a thorough examination upon the principles as well as the facts which they involve. I am convinced that a settlement upon the terms mentioned would be an equitable and advantageous one, and I recommend that provision be made for the prompt payment of the stated sum.

Thus far only France and Portugal have signified their willingness to adhere to the regulations established under the award of the Paris Tribunal of Arbitration.

Preliminary surveys of the Alaskan boundary and a preparatory examination of the question of protection of food fish in the contiguous waters of the United States and the Dominion of Canada are in progress.

The boundary of British Guiana still remains in dispute between Great Britain and Venezuela. Believing that its early settlement, on some just basis alike honorable to both parties, is in the line of our established policy to remove from this hemisphere all causes of difference with powers beyond the sea, I shall renew the efforts heretofore made to bring about a restoration of diplomatic relations between the disputants, and to induce a reference to arbitration—a resort which Great Britain so conspicuously favors in principle and respects in practice, and which is earnestly sought by her weaker adversary.

Since communicating the voluminous correspondence in regard to Hawaii and the action taken by the Senate and House of Representatives on certain questions submitted to the judgment and wider discretion of Congress, the organization of a government in place of the provisional arrangement which followed the deposition of the Queen has been announced, with evidence of its effective operation. The recognition usual in such cases has been accorded the new Government.

Under our present treaties of extradition with Italy miscarriages of justice have occurred owing to the refusal of that Government to surrender its own subjects. Thus far our efforts to negotiate an amended convention obviating this difficulty have been unavailing.

Apart from the war in which the island empire is engaged, Japan attracts increasing attention in this country by her evident desire to cultivate more liberal intercourse with us, and to seek our kindly aid in furtherance of her laudable desire for complete autonomy in her domestic affairs and full equality in the family of nations. The Japanese Empire of today is no longer the Japan of the past, and our relations with this progressive nation should not be less broad and liberal than those with other powers.

Good will, fostered by many interests in common, has marked our relations with our nearest southern neighbor. Peace being restored along her northern frontier, Mexico has asked the punishment of the late disturbers of her tranquillity. There ought to be a new treaty of commerce and navigation with that country to take the place of the one which terminated thirteen years ago. The friendliness of the intercourse between the two countries is attested by the fact that during this long period the commerce of each has steadily increased under the rule of mutual consideration, being neither stimulated by conventional arrangements nor retarded by jealous rivalries or selfish distrust.

An indemnity tendered by Mexico, as a gracious act, for the murder in 1887 of Leon Baldwin, an American citizen, by a band of marauders in Durango, has been accepted and is being paid in installments.

The problem of the storage and use of the waters of the Rio Grande for irrigation should be solved by appropriate concurrent action of the two interested countries. Rising in the Colorado heights, the stream flows intermittently, yielding little water during the dry months to the irrigating channels already constructed along its course. This scarcity is often severely felt in the regions where the river forms a common boundary. Moreover, the frequent changes in its course through level sands often raise embarrassing questions of territorial jurisdiction.

Prominent among the questions of the year was the Bluefields incident, in what is known as the Mosquito Indian Strip, bordering on the Atlantic Ocean and within the jurisdiction of Nicaragua. By the treaty of 1860 between Great Britain and Nicaragua the former Government expressly recognized the sovereignty of the latter over the Strip, and a limited form of self-government was guaranteed to the Mosquito Indians, to be exercised according to their customs, for themselves and other dwellers within its limits. The so-called native government, which grew to be largely made up of aliens, for many years disputed the sovereignty of Nicaragua over the Strip and claimed the right to maintain therein a practically independent municipal government. Early in the past year efforts of Nicaragua to maintain sovereignty over the Mosquito territory led to serious disturbances, culminating in the suppression of the native government and the attempted substitution of an impracticable composite administration, in which Nicaragua and alien residents were to participate. Failure was followed by an insurrection which for a time subverted Nicaraguan rule, expelling her officers and restoring the old organization. This, in turn, gave place to the existing local government established and upheld by Nicaragua.

Although the alien interests arrayed against Nicaragua in these transactions have been largely American, and the commerce of that region for some time has been and still is chiefly controlled by our citizens, we can not for that reason challenge the rightful sovereignty of Nicaragua over this important part of her domain.

For some months one, and during part of the time two, of our naval ships have been stationed at Bluefields for the protection of all legitimate interests of our citizens. In September last the Government at Managua expelled from its territory twelve or more foreigners, including two Americans, for alleged participation in the seditious or revolutionary movements against the republic at Bluefields already mentioned; but through the earnest remonstrance of this Government the two Americans have been permitted to return to the peaceful management of their business. Our naval commanders at the scene of these disturbances, by their constant exhibition of firmness and good judgment, contributed largely to the prevention of more serious consequences and to the restoration of quiet and order. I regret that in the midst of these occurrences there happened a most grave and irritating failure of Nicaraguan justice. An American citizen named Wilson, residing at Rama, in the Mosquito territory, was murdered by one Argüello, the acting governor of the town. After some delay the murderer was arrested, but so insecurely confined or guarded that he escaped, and, notwithstanding our repeated demands, it is claimed that his recapture has been impossible by reason of his flight beyond Nicaraguan jurisdiction.

The Nicaraguan authorities having given notice of forfeiture of their concession to the canal company on grounds purely technical and not embraced in the contract, have receded from that position.

Peru, I regret to say, shows symptoms of domestic disturbance, due probably to the slowness of her re-



cuperation from the distresses of the war of 1881. Weakened in resources, her difficulties in facing international obligations invite our kindly sympathy and justify our forbearance in pressing long-pending claims. I have felt constrained to testify this sympathy in connection with certain demands urgently preferred by other powers.

The recent death of the Czar of Russia called forth appropriate expressions of sorrow and sympathy on the part of our Government with his bereaved family and the Russian people. As a further demonstration of respect and friendship our minister at St. Petersburg was directed to represent our Government at the funeral ceremonies.

The sealing interests of Russia in Bering Sea are second only to our own. A *modus vivendi* has therefore been concluded with the Imperial Government restrictive of poaching on the Russian rookeries, and of sealing in waters which were not comprehended in the protected area defined in the Paris award.

Occasion has been found to urge upon the Russian Government equality of treatment for our great life insurance companies, whose operations have been extended throughout Europe. Admitting, as we do, foreign corporations to transact business in the United States, we naturally expect no less tolerance for our own in the ample fields of competition abroad.

But few cases of interference with naturalized citizens returning to Russia have been reported during the current year. One Krzeminski was arrested last summer in a Polish province on a reported charge of unpermitted renunciation of Russian allegiance, but it transpired that the proceedings originated in alleged malfeasance committed by Krzeminski while an imperial official a number of years ago. Efforts for his release, which promised to be successful, were in progress when his death was reported.

The Government of Salvador having been overthrown by an abrupt popular outbreak, certain of its military and civil officers, while hotly pursued by infuriated insurgents, sought refuge on board the United States war ship "Bennington," then lying in a Salvadorean port. Although the practice of asylum is not favored by this Government, yet, in view of the imminent peril which threatened the fugitives, and solely from considerations of humanity, they were afforded shelter by our naval commander, and when afterward demanded under our treaty of extradition with Salvador for trial on charges of murder, arson, and robbery, I directed that such of them as had not voluntarily left the ship be conveyed to one of our nearest ports, where a hearing could be had before a judicial officer in compliance with the terms of the treaty. On their arrival at San Francisco such a proceeding was promptly instituted before the United States district judge, who held that the acts constituting the alleged offenses were political, and discharged all the accused except one Cienfuegos, who was held for an attempt to murder. Thereupon I was constrained to direct his release, for the reason that an attempt to murder was not one of the crimes charged against him and upon which his surrender to the Salvadorean authorities had been demanded.

Unreasonable and unjust fines imposed by Spain on the vessels and commerce of the United States have demanded from time to time during the last twenty years earnest remonstrance on the part of our Government. In the immediate past exorbitant penalties have been imposed upon our vessels and goods by customs authorities of Cuba and Puerto Rico for clerical errors of the most trivial character in the manifests or bills of lading. In some cases, fines amounting to thousands of dollars have been levied upon cargoes or the carrying vessels when the goods in question were entitled to free entry. Fines have been exacted even when the error had been detected and the Spanish authorities notified before the arrival of the goods in port.

This conduct is in strange contrast with the considerate and liberal treatment extended to Spanish vessels and cargoes in our ports in like cases. No

satisfactory settlement of these vexatious questions has yet been reached.

The Mora case, referred to in my last annual message, remains unsettled. From the diplomatic correspondence on this subject which has been laid before the Senate, it will be seen that this Government has offered to conclude a convention with Spain for disposal by arbitration of outstanding claims between the two countries, except the Mora claim, which, having been long ago adjusted, now only awaits payment as stipulated, and, of course, it could not be included in the proposed convention. It was hoped that this offer would remove parliamentary obstacles encountered by the Spanish Government in providing payment of the Mora indemnity. I regret to say that no definite reply to this offer has yet been made, and all efforts to secure payment of this settled claim have been unavailing.

In my last annual message I adverted to the claim on the part of Turkey of the right to expel, as persons undesirable and dangerous, Armenians naturalized in the United States and returning to Turkish jurisdiction. Numerous questions in this relation have arisen. While this Government acquiesces in the asserted right of expulsion, it will not consent that Armenians may be imprisoned or otherwise punished for no other reason than having acquired without imperial consent American citizenship.

Three of the assailants of Miss Melton, an American teacher in Mosul, have been convicted by the Ottoman courts, and I am advised that an appeal against the acquittal of the remaining five has been taken by the Turkish prosecuting officer.

A convention has been concluded with Venezuela for the arbitration of a long-disputed claim growing out of the seizure of certain vessels, the property of citizens of the United States. Although signed, the treaty of extradition with Venezuela is not yet in force, owing to the insistence of that Government that when surrendered its citizens shall in no case be liable to capital punishment.

The rules for the prevention of collisions at sea which were framed by the maritime conference held in this city in 1889, having been concurrently incorporated in the statutes of the United States and Great Britain, have been announced to take effect March 1, 1895, and invitations have been extended to all maritime nations to adhere to them. Favorable responses have thus far been received from Austria, France, Portugal, Spain, and Sweden.

In my last annual message I referred briefly to the unsatisfactory state of affairs in Samoa under the operation of the Berlin Treaty, assignally illustrating the impolicy of entangling alliances with foreign powers; and on May 9, 1894, in response to a resolution of the Senate, I sent a special message and documents to that body on the same subject, which emphasized my previously expressed opinions. Later occurrences, the correspondence in regard to which will be laid before Congress, further demonstrate that the Government which was devised by the three powers and forced upon the Samoans against their inveterate hostility, can be maintained only by the continued presence of foreign military force, and at no small sacrifice of life and treasure.

The suppression of the Mataafa insurrection by the powers, and the subsequent banishment of the leader and 11 other chiefs, as recited in my last message, did not bring lasting peace to the islands. Formidable uprisings continued, and finally a rebellion broke out in the capital island, Upolu, headed in Aana, the western district, by the younger Tamasese, and in Atua, the eastern district, by other leaders. The insurgents ravaged the country and fought the Government troops up to the very doors of Apia. The King again appealed to the powers for help, and the combined British and German naval forces reduced the Atuans to apparent subjection, not, however, without considerable loss to the natives. A few days later Tamasese and his adherents, fearing the ships and the marines, professed submission.



Reports received from our agents at Apia do not justify the belief that the peace thus brought about will be of long duration. It is their conviction that the natives are at heart hostile to the present Government; that such of them as profess loyalty to it do so from fear of the powers, and that it would speedily go to pieces if the war ships were withdrawn. In reporting to his Government on the unsatisfactory situation since the suppression of the late revolt by foreign armed forces, the German consul at Apia stated:

"That peace will be lasting is hardly to be presumed. The lesson given by firing on Atua was not sufficiently sharp and incisive to leave a lasting impression on the forgetful Samoan temperament. In fact, conditions are existing which show that peace will not last and is not seriously intended. Malietoa, the King, and his chiefs are convinced that the departure of the war ships will be a signal for a renewal of war. The circumstance that the representatives of the villages of all the districts which were opposed to the Government have already withdrawn to Atua to hold meetings, and that both Atua and Aana have forbidden inhabitants of those districts which fought on the side of the Government to return to their villages and have already partly burned down the latter, indicates that a real conciliation of the parties is still far off."

And in a note of the 10th ultimo, inclosing a copy of that report for the information of this Government, the German ambassador said:

"The contents of the report awakened the Imperial Government's apprehension that under existing circumstances the peace concluded with the rebels will afford no assurance of the lasting restoration of tranquillity in the islands."

The present Government has utterly failed to correct, if indeed it has not aggravated, the very evils it was intended to prevent. It has not stimulated our commerce with the islands. Our participation in its establishment against the wishes of the natives was in plain defiance of the conservative teachings and warnings of the wise and patriotic men who laid the foundations of our free institutions, and I invite an expression of the judgment of Congress on the propriety of steps being taken by this Government looking to the withdrawal from its engagements with the other powers on some reasonable terms not prejudicial to any of our existing rights.

The Secretary of the Treasury reports that the receipts of the Government from all sources of revenue during the fiscal year ending June 30, 1894, amounted to \$372,802,498.29, and its expenditures to \$442,605,758.87, leaving a deficit of \$69,803,260.58. There was a decrease of \$15,952,674.66 in the ordinary expenses of the Government as compared with the fiscal year 1893.

There was collected from customs \$131,818,530.62, and from internal revenue \$147,168,449.70. The balance of the income for the year, amounting to \$93,815,517.97, was derived from the sales of lands and other sources.

The value of our total dutiable imports amounted to \$275,199,086, being \$146,657,625 less than during the preceding year; and the importations free of duty amounted to \$379,795,536, being \$64,748,675 less than during the preceding year. The receipts from customs were \$73,536,486.11 less, and from internal revenue \$13,836,539.97 less, than in 1893.

The total tax collected from distilled spirits was \$85,259,250.25; on manufactured tobacco, \$28,617,898.62; and on fermented liquors, \$31,414,788.04.

Our exports of merchandise, domestic and foreign, amounted during the year to \$892,140,572, being an increase over the preceding year of \$44,495,378.

The total amount of gold exported during the fiscal year was \$76,898,061, as against \$108,680,444 during the fiscal year 1893. The amount imported was \$72,449,119, as against \$21,174,381 during the previous year.

The imports of silver were \$13,286,552, and the exports were \$50,451,265.

The total bounty paid upon the production of sugar in the United States for the fiscal year was \$12,100,208.89, being an increase of \$2,725,078.01 over the payments made during the preceding year. The amount of bounty paid from July 1, 1894, to Aug. 28, 1894, the time when further payment ceased by operation of law, was \$966,185.84. The total expenses incurred in the payment of the bounty upon sugar during the fiscal year was \$130,140.85.

It is estimated that upon the basis of the present revenue laws the receipts of the Government during the current fiscal year ending June 30, 1895, will be \$424,427,748.44, and its expenditures \$444,427,748.44, resulting in a deficit of \$20,000,000.

On the 1st day of November, 1894, the total stock of money of all kinds in the country was \$2,240,773,888, as against \$2,204,651,000 on the 1st day of November, 1893; and the money of all kinds in circulation, or not included in the Treasury holdings, was \$1,672,093,422, or \$24.27 *per capita*, upon an estimated population of 68,887,000. At the same date there was held in the Treasury gold bullion amounting to \$44,615,177.55, and silver bullion which was purchased at a cost of \$127,779,988. The purchase of silver bullion under the act of July 14, 1890, ceased on the 1st day of November, 1893, and up to that time there had been purchased during the fiscal year 11,917,658.78 fine ounces at a cost of \$8,715,521.32, an average cost of \$0.7313 per fine ounce. The total amount of silver purchased from the time that law took effect until the repeal of its purchasing clause, on the date last mentioned, was 168,674,682.53 fine ounces, which cost \$155,931,002.25, the average price per fine ounce being \$0.9244.

The total amount of standard silver dollars coined at the mints of the United States since the passage of the act of Feb. 28, 1878, is \$421,776,408, of which \$378,166,793 were coined under the provisions of that act, \$38,531,143 under the provisions of the act of July 14, 1890, and \$5,078,472 under the act providing for the coinage of trade-dollar bullion.

The total coinage of all metals at our mints during the last fiscal year consisted of 63,485,220 pieces, valued at \$106,216,730.06, of which there were \$99,474,912.50 in gold coined, \$758 in standard silver dollars, \$6,024,140.30 in subsidiary silver coin, and \$716,919.26 in minor coin.

During the calendar year 1893 the production of precious metals in the United States was estimated at 1,739,323 fine ounces of gold, of the commercial and coinage value of \$35,955,000, and 60,000,000 fine ounces of silver, of the bullion or market value of \$46,800,000 and of the coinage value of \$77,576,000. It is estimated that on the 1st day of July, 1894, the stock of metallic money in the United States, consisting of coin and bullion, amounted to \$1,251,640,958, of which \$627,923,201 was gold and \$624,347,757 was silver.

Fifty national banks were organized during the year ending Oct. 31, 1894, with a capital of \$5,285,000, and 79, with a capital of \$10,475,000, went into voluntary liquidation. Twenty-one banks, with a capital of \$2,770,000, were placed in the hands of receivers. The total number of national banks in existence on the 31st day of October last was 3,756, being 40 less than on the 31st day of October, 1893. The capital stock paid in was \$672,871,365, being \$9,678,491 less than at the same time in the previous year, and the surplus fund and undivided profits, less expenses and taxes paid, amounted to \$334,121,082.10, which was \$16,089,780 less than on Oct. 31, 1893. The circulation was decreased \$1,741,563. The obligations of the banks to each other were increased \$117,268,334, and the individual deposits were \$277,294,489 less than at the corresponding date in the previous year. Loans and discounts were \$161,206,923 more than at the same time the previous year, and checks and other cash items were \$90,349,963 more. The total resources of the banks at the date mentioned amounted to \$3,473,922,055, as against \$3,109,563,284.36 in 1893.

From the report of the Secretary of War it appears



that the strength of the army on Sept. 30, 1894, was 2,135 officers and 25,765 enlisted men. Although this is apparently a very slight decrease compared with the previous year, the actual effective force has been increased to the equivalent of nearly two regiments through the reorganization of the system of recruiting, and the consequent release to regimental duty of the large force of men hitherto serving at the recruiting depots. The abolition of these depots, it is predicted, will furthermore effect an annual reduction approximating \$250,000 in the direct expenditures, besides promoting generally the health, *morale*, and discipline of the troops.

The execution of the policy of concentrating the army at important centers of population and transportation, foreshadowed in the last annual report of the Secretary, has resulted in the abandonment of 15 of the smaller posts, which was effected under a plan which assembles organizations of the same regiments hitherto widely separated. This renders our small forces more readily effective for any service which they may be called upon to perform, increases the extent of the territory under protection without diminishing the security heretofore afforded to any locality, improves the discipline, training, and *esprit de corps* of the army, besides considerably decreasing the cost of its maintenance.

Though the forces of the Department of the East have been somewhat increased, more than three fourths of the army is still stationed west of the Mississippi. This carefully matured policy, which secures the best and greatest service in the interests of the general welfare from the small force comprising our regular army, should not be thoughtlessly embarrassed by the creation of new and unnecessary posts through acts of Congress to gratify the ambitions or interests of localities.

While the maximum legal strength of the army is 25,000 men, the effective strength, through various causes, is but little over 20,000 men. The purpose of Congress does not, therefore, seem to be fully attained by the existing condition. While no considerable increase in the army is, in my judgment, demanded by recent events, the policy of seacoast fortification, in the prosecution of which we have been steadily engaged for some years, has so far developed as to suggest that the effective strength of the army be now made at least equal to the legal strength. Measures taken by the department during the year, as indicated, have already considerably augmented the effective force, and the Secretary of War presents a plan, which I recommend to the consideration of Congress, to attain the desired end. Economies effected in the department in other lines of its work will offset to a great extent the expenditure involved in the proposition submitted. Among other things, this contemplates the adoption of the three-battalion formation of regiments, which for several years has been indorsed by the Secretaries of War and the generals commanding the army. Compact in itself, it provides a skeleton organization, ready to be filled out in the event of war, which is peculiarly adapted to our strength and requirements; and the fact that every other nation, with a single exception, has adopted this formation to meet the conditions of modern warfare should alone secure for the recommendation an early consideration.

It is hardly necessary to recall the fact that, in obedience to the commands of the Constitution and the laws and for the purpose of protecting the property of the United States, aiding the process of Federal courts, and removing lawless obstructions to the performance by the Government of its legitimate functions, it became necessary in various localities during the year to employ a considerable portion of the regular troops. The duty was discharged promptly, courageously, and with marked discretion by the officers and men, and the most gratifying proof was thus afforded that the army deserves that complete confidence in its efficiency and discipline which the country has at all times manifested.

The year has been free from disturbances by Indians, and the chances of further depredations on their part are constantly becoming more remote and improbable.

The total expenditures of the War Department for the year ended June 30, 1894, amounted to \$56,039,009.34. Of this sum \$2,000,614.99 was for salaries and contingent expenses, \$23,665,156.16 for the support of the military establishment, \$5,001,682.23 for miscellaneous objects, and \$25,371,555.96 for public works. This latter sum includes \$19,494,037.49 for river and harbor improvements, and \$3,947,853.56 for fortifications and other works of defense. The appropriations for the current year aggregate \$52,429,112.78, and the estimates submitted by the Secretary of War for the next fiscal year call for appropriations amounting to \$52,318,629.55.

The skill and industry of our ordnance officers and inventors have, it is believed, overcome the mechanical obstacles which have heretofore delayed the armament of our coasts, and this great national undertaking upon which we have entered may now proceed as rapidly as Congress shall determine. With a supply of finished guns of large caliber already on hand, to which additions should now rapidly follow, the wisdom of providing carriages and emplacements for their mount can not be too strongly urged.

The total enrollment of the militia of the several States is 117,533 officers and enlisted men, an increase of 5,343 over the number reported at the close of the previous year. The reports of militia inspections by regular army officers show a marked increase in interest and efficiency among the State organizations, and I strongly recommend a continuance of the policy of affording every practical encouragement possible to this important auxiliary of our military establishment.

The condition of the Apache Indians, held as prisoners by the Government for eight years at a cost of \$500,000, has been changed during the year from captivity to one which gives them an opportunity to demonstrate their capacity for self-support and at least partial civilization. Legislation enacted at the late session of Congress gave the War Department authority to transfer the survivors, numbering 346, from Mount Vernon Barracks, in Alabama, to any suitable reservation. The department selected as their future home the military lands near Fort Sill, Indian Territory, where, under military surveillance, the former prisoners have been established in agriculture under conditions favorable to their advancement.

In recognition of the long and distinguished military services and faithful discharge of delicate and responsible civil duties by Major-Gen. John M. Schofield, now the general commanding the army, it is suggested to Congress that the temporary revival of the grade of lieutenant general in his behalf would be a just and gracious act, and would permit his retirement, now near at hand, with rank befitting his merits.

The report of the Attorney-General notes the gratifying progress made by the Supreme Court in overcoming the arrears of its business and in reaching a condition in which it will be able to dispose of cases as they arise without any unreasonable delay. This result is of course very largely due to the successful working of the plan inaugurating circuit courts of appeals. In respect to these tribunals, the suggestion is made in quarters entitled to the highest consideration that an additional circuit judge for each circuit would greatly strengthen these courts and the confidence reposed in their adjudications, and that such an addition would not create a greater force of judges than the increasing business of such courts requires. I commend the suggestion to the careful consideration of the Congress. Other important topics are adverted to in the report, accompanied by recommendations, many of which have been treated at large in previous messages, and at this time, therefore, need only to be



named. I refer to the abolition of the fee system as a measure of compensation to Federal officers; the enlargement of the powers of United States commissioners, at least in the Territories, the allowance of writs of error in criminal cases on behalf of the United States, and the establishment of degrees in the crime of murder. A topic dealt with by the Attorney-General of much importance is the condition of the administration of justice in the Indian Territory. The permanent solution of what is called the Indian problem is probably not to be expected at once, but meanwhile such ameliorations of present conditions as the existing system will admit of ought not to be neglected. I am satisfied there should be a Federal court established for the Territory with sufficient judges, and that this court should sit within the Territory and have the same jurisdiction as to Territorial affairs as is now vested in the Federal courts sitting in Arkansas and Texas.

Another subject of pressing moment referred to by the Attorney-General is the reorganization of the Union Pacific Railway Company on a basis equitable as regards all private interests and as favorable to the Government as existing conditions will permit. The operation of a railroad by a court through a receiver is an anomalous state of things, which should be terminated, on all grounds, public and private, at the earliest possible moment. Besides, not to enact the needed enabling legislation at the present session postpones the whole matter until the assembling of a new Congress, and inevitably increases all the complications of the situation, and could not but be regarded as a signal failure to solve a problem which has practically been before the present Congress ever since its organization.

Eight years ago, in my annual message, I urged upon the Congress as strongly as I could the location and construction of 2 prisons for the confinement of United States prisoners. A similar recommendation has been made from time to time since, and a few years ago a law was passed providing for the selection of sites for 3 such institutions. No appropriation has, however, been made to carry the act into effect, and the old and discreditable condition still exists.

It is not my purpose at this time to repeat the considerations which make an impregnable case in favor of the ownership and management by the Government of the penal institutions in which Federal prisoners are confined. I simply desire to again urge former recommendations on the subject, and to particularly call the attention of the Congress to that part of the report of the Secretary of War in which he states that the military prison at Fort Leavenworth, Kan., can be turned over to the Government as a prison for Federal convicts without the least difficulty and with an actual saving of money from every point of view.

Pending a more complete reform, I hope that by the adoption of the suggestion of the Secretary of War this easy step may be taken in the direction of the proper care of its convicts by the Government of the United States.

The report of the Postmaster-General presents a comprehensive statement of the operations of the Post Office Department for the last fiscal year.

The receipts of the department during the year amounted to \$75,080,479.04 and the expenditures to \$84,324,414.15.

The transactions of the postal service indicate with barometric certainty the fluctuations in the business of the country. Inasmuch, therefore, as business complications continued to exist throughout the last year to an unforeseen extent, it is not surprising that the deficiency of revenue to meet the expenditures of the Post Office Department, which was estimated in advance at about \$8,000,000, should be exceeded by nearly \$1,250,000. The ascertained revenues of the last year, which were the basis of circulation for the current year, being less than estimated, the deficiency for the current year will be correspondingly greater, though the Postmaster-General states that the latest

indications are so favorable that he confidently predicts an increase of at least 8 per cent. in the revenues of the current year over those of the last year.

The expenditures increase steadily and necessarily with the growth and needs of the country, so that the deficiency is greater or less in any year, depending upon the volume of receipts.

The Postmaster-General states that this deficiency is unnecessary, and might be obviated at once if the law regulating rates upon mail matter of the second class was modified. The rate received for the transmission of this second-class matter is 1 cent per pound, while the cost of such transmission to the Government is eight times that amount. In the general terms of the law this rate covers newspapers and periodicals. The extensions of the meaning of these terms from time to time have admitted to the privileges intended for legitimate newspapers and periodicals a surprising range of publications, and created abuses the cost of which amounts in the aggregate to the total deficiency of the Post Office Department. Pretended newspapers are started by business houses for the mere purpose of advertising goods, complying with the law in form only, and discontinuing the publications as soon as the period of advertising is over. "Sample copies" of pretended newspapers are issued in great numbers for a like purpose only. The result is a great loss of revenue to the Government, besides its humiliating use as an agency to aid in carrying out the scheme of a business house to advertise its goods by means of a trick upon both its rival houses and the regular and legitimate newspapers. Paper-covered literature, consisting mainly of trashy novels to the extent of many thousands of tons, is sent through the mails at 1 cent per pound, while the publishers of standard works are required to pay eight times that amount in sending their publications. Another abuse consists in the free carriage through the mails of hundreds of tons of seed and grain uselessly distributed through the Department of Agriculture. The Postmaster-General predicts that if the law be so amended as to eradicate these abuses not only will the Post Office Department show no deficiency, but he believes that in the near future all legitimate newspapers and periodical magazines might be properly transmitted through the mails to their subscribers free of cost. I invite your prompt consideration of this subject, and fully indorse the views of the Postmaster-General.

The total number of post offices in the United States on the 30th day of June, 1894, was 69,805, an increase of 1,403 over the preceding year. Of these, 3,428 were presidential; an increase in that class of 68 over the preceding year.

Six hundred and ten cities and towns are provided with free delivery. Ninety-three other cities and towns entitled to this service under the law have not been accorded it on account of insufficient funds. The expense of free delivery for the current fiscal year will be more than \$12,300,000, and under existing legislation this item of expenditure is subject to constant increase. The estimated cost of rural free delivery generally is so very large that it ought not to be considered in the present condition of affairs.

During the year 830 additional domestic money-order offices were established. The total number of these offices at the close of the year was 19,264. There were 14,304,041 money orders issued during the year, being an increase over the preceding year of 994,306. The value of these orders amounted to \$138,793,579.49, an increase of \$11,217,145.84. There were also issued during the year postal notes amounting to \$12,649,094.55.

During the year 218 international money-order offices were added to those already established, making a total of 2,625 such offices in operation June 30, 1894. The number of international money orders issued during the year was 917,823, a decrease in number of 133,176; and their value was \$13,792,455.31, a decrease in amount of \$2,549,382.55. The number of orders paid was 361,180, an increase over the



preceding year of 60,263, and their value was \$6,568,-498.78, an increase of \$1,235,118.08.

From the foregoing statements it appears that the total issue of money orders and postal notes for the year amounted to \$165,235,129.35.

The number of letters and packages mailed during the year for special delivery was 3,436,970. The special-delivery stamps used upon these letters and packages amounted to \$343,697. The messengers' fees paid for their delivery amounted to \$261,209.70, leaving a balance in favor of the Government of \$82,487.30.

The report shows most gratifying results in the way of economies worked out without affecting the efficiency of the postal service. These consist in the abrogation of steamship-subsidy contracts, reletting of mail-transportation contracts, and in the cost and amount of supplies used in the service, amounting in all to \$16,619,047.42.

This report also contains a valuable contribution to the history of the Universal Postal Union, an arrangement which amounts practically to the establishment of one postal system for the entire civilized world. Special attention is directed to this subject at this time, in view of the fact that the next congress of the union will meet in Washington in 1897; and it is hoped that timely action will be taken in the direction of perfecting preparations for that event.

The Postmaster-General renews the suggestion made in a previous report that the department organization be increased to the extent of creating a direct district supervision of all postal affairs, and in this suggestion I fully concur.

There are now connected with the post office establishment 32,661 employees who are in the classified service. This includes many who have been classified upon the suggestion of the Postmaster-General. He states that another year's experience at the head of the department serves only to strengthen the conviction as to the excellent working of the civil-service law in this branch of the public service.

Attention is called to the report of the Secretary of the Navy, which shows very gratifying progress in the construction of ships for our new navy. All the vessels now building, including the 3 torpedo boats authorized at the last session of Congress and excepting the first-class battle ship "Iowa," will probably be completed during the coming fiscal year.

The estimates for the increase of the navy for the year ending June 30, 1896, are large, but they include practically the entire sum necessary to complete and equip all the new ships not now in commission, so that, unless new ships are authorized, the appropriations for the naval service for the fiscal year ending June 30, 1897, should fall below the estimates for the coming year by at least \$12,000,000.

The Secretary presents with much earnestness a plea for the authorization of 3 additional battle ships and 10 or 12 torpedo boats. While the unarmored vessels heretofore authorized, including those now nearing completion, will constitute a fleet which it is believed is sufficient for ordinary cruising purposes in time of peace, we have now completed and in process of construction but 4 first-class battle ships and but few torpedo boats. If we are to have a navy for warlike operations, offensive and defensive, we certainly ought to increase both the number of battle ships and torpedo boats.

The manufacture of armor requires expensive plant and the aggregation of many skilled workmen. All the armor necessary to complete the vessels now building will be delivered before the first of June next. If no new contracts are given out, contractors must disband their workmen and their plants must lie idle. Battle ships authorized at this time would not be well under way until late in the coming fiscal year, and at least three years and a half from the date of the contract would be required for their completion. The Secretary states that not more than 15 per cent. of the cost of such ships need be included in the appropriations for the coming year.

I recommend that provision be made for the construction of additional battle ships and torpedo boats.

The Secretary recommends the manufacture not only of a reserve supply of ordnance and ordnance material for ships of the navy, but also a supply for the auxiliary fleet. Guns and their appurtenances should be provided and kept on hand for both these purposes. We have not to-day a single gun that could be put upon the ships "Paris" or "New York" of the International Navigation Company or any other ship of our reserve navy.

The manufacture of guns at the Washington Navy Yard is proceeding satisfactorily, and none of our new ships will be required to wait for their guns or ordnance equipment.

An important order has been issued by the Secretary of the Navy co-ordinating the duties of the several bureaus concerned in the construction of ships. This order, it is believed, will secure to a greater extent than has heretofore been possible the harmonious action of these several bureaus, and make the attainment of the best results more certain.

During the past fiscal year there has been an unusual and pressing demand in many quarters of the world for the presence of vessels to guard American interests.

In January last, during the Brazilian insurrection a large fleet was concentrated in the harbor of Rio de Janeiro. The vigorous action of Rear-Admiral Benham in protecting the personal and commercial rights of our citizens during the disturbed conditions afforded results which will, it is believed, have a far-reaching and wholesome influence whenever in like circumstances it may become necessary for our naval commanders to interfere on behalf of our people in foreign ports.

The war now in progress between China and Japan has rendered it necessary or expedient to dispatch 8 vessels to those waters.

Both the Secretary of the Navy and the Secretary of the Treasury recommend the transfer of the work of the Coast Survey proper to the Navy Department. I heartily concur in this recommendation. Excluding Alaska and a very small area besides, all the work of mapping and charting our coasts has been completed. The hydrographic work, which must be done over and over again by reason of the shifting and varying depths of water consequent upon the action of streams and tides, has heretofore been done under the direction of naval officers in subordination to the Superintendent of the Coast Survey. There seems to be no good reason why the navy should not have entire charge hereafter of such work, especially as the Hydrographic Office of the Navy Department is now, and has been for many years, engaged in making efficient maps entirely similar to those prepared by the Coast Survey.

I feel it my imperative duty to call attention to the recommendation of the Secretary in regard to the *personnel* of the line of the navy. The stagnation of promotion in this the vital branch of the service is so great as to seriously impair its efficiency.

I consider it of the utmost importance that the young and middle-aged officers should, before the eve of retirement, be permitted to reach a grade entitling them to active and important duty.

The system adopted a few years ago regulating the employment of labor at the navy yards is rigidly upheld and has fully demonstrated its usefulness and expediency. It is within the domain of civil-service reform, inasmuch as workmen are employed through a board of labor selected at each navy yard and are given work without reference to politics and in the order of their application, preference, however, being given to army and navy veterans and those having former navy-yard experience.

Amendments suggested by experience have been made to the rules regulating the system. Through its operation the work at our navy yards has been vastly improved in efficiency, and the opportunity to



work has been honestly and fairly awarded to willing and competent applicants.

It is hoped that if this system continues to be strictly adhered to there will soon be as a natural consequence such an equalization of party benefits as will remove all temptation to relax or abandon it.

The report of the Secretary of the Interior exhibits the situation of the numerous and interesting branches of the public service connected with his department. I commend this report and the valuable recommendations of the Secretary to the careful attention of the Congress.

The public land disposed of during the year amounted to 10,406,100.77 acres, including 28,876.05 of Indian lands.

It is estimated that the public domain still remaining amounts to a little more than 600,000,000 acres, excluding, however, about 360,000,000 acres in Alaska as well as military reservations and railroad and other selections of lands yet unadjudicated.

The total cash receipts from sale of lands amounted to \$2,674,285.79, including \$91,981.03 received from Indian lands.

Thirty-five thousand patents were issued for agricultural lands, and 3,100 patents were issued to Indians on allotments of their holdings in severalty, the land so allotted being inalienable by the Indian allottees for a period of twenty-five years after patent.

There were certified and patented on account of railroad and wagon-road grants during the year 865,556.45 acres of land, and at the close of the year 29,000,000 acres were embraced in the lists of selections made by railroad and wagon-road companies and awaited settlement.

The selections of swamp lands and that taken as indemnity therefor since the passage of the act providing for the same in 1849 amount to nearly or quite 80,500,000 acres, of which 58,000,000 have been patented to States. About 138,000 acres were patented during the last year. Nearly 820,000 acres of school and education grants were approved during the year, and at its close 1,250,363.81 acres remained unadjudicated.

It appears that the appropriation for the current year on account of special service for the protection of the public lands and the timber thereon is much less than those for previous years and inadequate for an efficient performance of the work. A larger sum of money than has been appropriated during a number of years past on this account has been returned to the Government as a result of the labors of those employed in the particular service mentioned, and I hope it will not be crippled by insufficient appropriation.

I fully indorse the recommendation of the Secretary that adequate protection be provided for our forest reserves and that a comprehensive forestry system be inaugurated. Such keepers and superintendents as are necessary to protect the forests already reserved should be provided. I am of the opinion that there should be an abandonment of the policy sanctioned by present laws, under which the Government for a very small consideration is rapidly losing title to immense tracts of land covered with timber which should be properly reserved as permanent sources of timber supply.

The suggestion that a change be made in the manner of securing surveys of the public lands is especially worthy of consideration. I am satisfied that these surveys should be made by a corps of competent surveyors under the immediate control and direction of the Commissioner of the General Land Office.

An exceedingly important recommendation of the Secretary relates to the manner in which contests and litigated cases growing out of efforts to obtain Government land are determined. The entire testimony upon which these controversies depend in all their stages is taken before the local registers and receivers, and yet these officers have no power to subpoena witnesses or to enforce their attendance to testify. These

cases, numbering 3,000 or 4,000 annually, are sent by the local officers to the Commissioner of the General Land Office for his action. The exigencies of his other duties oblige him to act upon the decisions of the registers and receivers without an opportunity of thorough personal examination. Nearly 2,000 of these cases are appealed annually from the commissioner to the Secretary of the Interior. Burdened with other important administrative duties, his determination of these appeals must be almost perfunctory and based upon the examination of others, though this determination of the Secretary operates as a final adjudication upon rights of very great importance.

I concur in the opinion that the Commissioner of the General Land Office should be relieved from the duty of deciding litigated land cases, that a non-partisan court should be created to pass on such cases, and that the decisions of this court should be final, at least so far as the decisions of the department are now final. The proposed court might be given authority to certify questions of law, in matters of especial importance, to the Supreme Court of the United States or the Court of Appeals for the District of Columbia for decision. The creation of such a tribunal would expedite the disposal of cases and insure decisions of a more satisfactory character. The registers and receivers who originally hear and decide these disputes should be invested with authority to compel witnesses to attend and testify before them.

Though the condition of the Indians shows a steady and healthy progress, their situation is not satisfactory at all points. Some of them to whom allotments of land have been made are found to be unable or disinclined to follow agricultural pursuits or to otherwise beneficially manage their land. This is especially true of the Cheyennes and Arapahoes, who, as it appears by reports of their agent, have in many instances never been located upon their allotments, and in some cases do not even know where their allotments are. Their condition has deteriorated. They are not self-supporting, and they live in camps and spend their time in idleness.

I have always believed that allotments of reservation lands to Indians in severalty should be made sparingly, or at least slowly, and with the utmost caution. In these days, when white agriculturists and stock raisers of experience and intelligence find their lot a hard one, we ought not to expect Indians, unless far advanced in civilization and habits of industry, to support themselves on the small tracts of land usually allotted to them.

If the self-supporting scheme by allotment fails, the wretched pauperism of the allottees which results is worse than their original condition of regulated dependence. It is evident that the evil consequences of ill-advised allotment are intensified in cases where the false step can not be retraced on account of the purchase by the Government of reservation lands remaining after allotments are made and the disposition of such remaining lands to settlers or purchasers from the Government.

I am convinced that the proper solution of the Indian problem and the success of every step taken in that direction depend to a very large extent upon the intelligence and honesty of the reservation agents and the interest they have in their work. An agent fitted for his place can do much toward preparing the Indians under his charge for citizenship and allotment of their lands, and his advice as to any matter concerning their welfare will not mislead. An unfit agent will make no effort to advance the Indians on his reservation toward civilization or preparation for allotment of lands in severalty, and his opinion as to their condition in this and other regards is heedless and valueless.

The indications are that the detail of army officers as Indian agents will result in improved management on the reservations.

Whenever allotments are made and any Indian on



the reservation has previously settled upon a lot and cultivated it, or shown a disposition to improve it in any way, such lot should certainly be allotted to him, and this should be made plainly obligatory by statute.

In the light of experience, and considering the uncertainty of the Indian situation and its exigencies in the future, I am not only disposed to be very cautious in making allotments, but I incline to agree with the Secretary of the Interior in the opinion that when allotments are made the balance of reservation land remaining after allotment, instead of being bought by the Government from the Indians, and opened for settlement with such scandals and unfair practices as seem unavoidable, should remain for a time at least as common land or be sold by the Government on behalf of the Indians in an orderly way and at fixed prices to be determined by its location and desirability, and that the proceeds, less expenses, should be held in trust for the benefit of the Indian proprietors.

The intelligent Indian-school management of the past year has been followed by gratifying results. Efforts have been made to advance the work in a sound and practical manner. Five institutes of Indian teachers have been held during the year, and have proved very beneficial through the views exchanged and methods discussed particularly applicable to Indian education.

Efforts are being made in the direction of a gradual reduction of the number of Indian contract schools so that in a comparatively short time they may give way altogether to Government schools, and it is hoped that the change may be so gradual as to be perfected without too great expense to the Government or undue disregard of investments made by those who have established and are maintaining such contract schools.

The appropriation for the current year ending June 30, 1895, applicable to the ordinary expenses of the Indian service amounts to \$6,733,003.18, being less by \$663,240.64 than the sum appropriated on the same account for the previous year.

At the close of the last fiscal year, on the 30th day of June, 1894, there were 969,544 persons on our pension rolls, being a net increase of 3,532 over the number reported at the end of the previous year.

These pensioners may be classified as follows: Soldiers and sailors, survivors of all wars, 753,968; widows and relatives of deceased soldiers, 215,162; army nurses in the war of the rebellion, 414. Of these pensioners 32,039 are surviving soldiers of Indian and other wars prior to the late civil war and the widows or relatives of such soldiers.

The remainder, numbering 937,505, are receiving pensions on account of the war of the rebellion, and of these 469,344 are on the rolls under the authority of the act of June 27, 1890, sometimes called the dependent-pension law.

The total amount expended for pensions during the year was \$139,804,461.05, leaving an unexpended balance from the sum appropriated of \$25,205,712.65.

The sum necessary to meet pension expenditures for the year ending June 30, 1896, is estimated at \$140,000,000.

The Commissioner of Pensions is of the opinion that the year 1895, being the thirtieth after the close of the war of the rebellion, must, according to all sensible human calculation, see the highest limit of the pension roll, and that after that year it must begin to decline.

The claims pending in the bureau have decreased more than 90,000 during the year. A large proportion of the new claims filed are for increase of pension by those now on the rolls.

The number of certificates issued was 80,213.

The names dropped from the rolls for all causes during the year numbered 37,951.

Among our pensioners are 9 widows and 3 daughters of soldiers of the Revolution and 45 survivors of the War of 1812.

The barefaced and extensive pension frauds ex-

posed under the direction of the courageous and generous veteran soldier now at the head of the bureau leave no room for the claim that no purgation of our pension rolls was needed, or that continued vigilance and prompt action are not necessary to the same end.

The accusation that an effort to detect pension frauds is evidence of unfriendliness toward our worthy veterans and a denial of their claims to the generosity of the Government suggests an unfortunate indifference to the commission of any offense which has for its motive the securing of a pension, and indicates a willingness to be blind to the existence of mean and treacherous crimes which play upon demagogic fears and make sport of the patriotic impulse of a grateful people.

The completion of the eleventh census is now in charge of the Commissioner of Labor. The total disbursements on account of the work for the fiscal year ending June 30, 1894, amounted to \$10,365,676.81. At the close of the year the number of persons employed in the Census Office was 679. At present there are about 400. The whole number of volumes necessary to comprehend the eleventh census will be twenty-five, and they will contain 22,270 printed pages. The assurance is confidently made that before the close of the present calendar year the material still incomplete will be practically in hand, and the census can certainly be closed by March 4, 1895. After that the revision and proof reading necessary to bring out the volumes will still be required.

The text of the census volumes has been limited, as far as possible, to the analysis of the statistics presented. This method, which is in accordance with law, has caused more or less friction, and in some instances individual disappointment, for when the Commissioner of Labor took charge of the work he found much matter on hand which according to this rule he was compelled to discard. The census is being prepared according to the theory that it is designed to collect facts and certify them to the public, not to elaborate arguments or to present personal views.

The Secretary of Agriculture in his report reviews the operations of his department for the last fiscal year, and makes recommendations for the further extension of its usefulness. He reports a saving in expenditures during the year of \$600,000, which is covered back into the Treasury. This sum is 23 per cent. of the entire appropriation.

A special study has been made of the demand for American farm products in all foreign markets, especially Great Britain. That country received from the United States during the nine months ending Sept. 30, 1894, 305,910 live beef cattle, valued at \$26,500,000, as against 182,611 cattle, valued at \$16,634,000, during the same period for 1893.

During the first six months of 1894 the United Kingdom took also 112,000,000 pounds of dressed beef from the United States, valued at nearly \$10,000,000.

The report shows that during the nine months immediately preceding Sept. 30, 1894, the United States exported to Great Britain 222,676,000 pounds of pork; of apples, 1,900,000 bushels, valued at \$2,500,000; and of horses, 2,811, at an average value of \$139 per head. There was a falling off in American wheat exports of 13,500,000 bushels, and the Secretary is inclined to believe that wheat may not in the future be the staple export cereal product of our country, but that corn will continue to advance in importance as an export on account of the new uses to which it is constantly being appropriated.

The exports of agricultural products from the United States for the fiscal year ending June 30, 1894, amounted to \$623,363,038, being 72.28 per cent. of American exports of every description, and the United Kingdom of Great Britain took more than 54 per cent. of all farm products finding foreign markets.

The Department of Agriculture has undertaken during the year two new and important lines of research.



The first relates to grasses and forage plants, with the purpose of instructing and familiarizing the people as to the distinctive grasses of the United States and teaching them how to introduce valuable foreign forage plants which may be adapted to this country. The second relates to agricultural soils and crop production, involving the analysis of samples of soils from all sections of the American Union, to demonstrate their adaptability to particular plants and crops. Mechanical analysis of soils may be of such inestimable utility that it is foremost in the new lines of agricultural research, and the Secretary therefore recommends that a division having it in charge be permanently established in the department.

The amount appropriated for the Weather Bureau was \$951,100. Of that sum \$138,500, or 14 per cent., has been saved and is returned to the Treasury.

As illustrating the usefulness of this service, it may be here stated that the warnings which were very generally given of two tropical storms occurring in September and October of the present year resulted in detaining safely in port 2,305 vessels, valued at \$36,283,913, laden with cargoes of probably still greater value. What is much more important and gratifying, many human lives on these ships were also undoubtedly saved.

The appropriation to the Bureau of Animal Industry was \$850,000, and the expenditures for the year were only \$495,429.24, thus leaving unexpended \$354,570.76. The inspection of beef animals for export and interstate trade has been continued, and 12,944,056 head were inspected during the year, at a cost of 1½ cent per head, against 4½ cents for 1893. The amount of pork microscopically examined was 35,437,937 pounds, against 20,677,410 pounds in the preceding year. The cost of this inspection has been diminished from 8½ cents per head in 1893 to 6½ cents in 1894.

The expense of inspecting the pork sold in 1894 to Germany and France by the United States was \$88,922.10. The quantity inspected was greater by 15,000,000 pounds than during the preceding year, when the cost of such inspection was \$172,367.08. The Secretary of Agriculture recommends that the law providing for the microscopic inspection of export and interstate meat be so amended as to compel owners of the meat inspected to pay the cost of such inspection, and I call attention to the arguments presented in his report in support of this recommendation.

The live beef cattle exported and tagged during the year numbered 363,535. This is an increase of 69,533 head over the previous year.

The sanitary inspection of cattle shipped to Europe has cost an average of 10½ cents for each animal, and the cost of inspecting Southern cattle and the disinfection of cars and stock yards averages 2.7 cents per animal.

The scientific inquiries of the Bureau of Animal Industry have progressed steadily during the year. Much tuberculin and mallein have been furnished to State authorities for use in the agricultural colleges and experiment stations for the treatment of tuberculosis and glanders.

Quite recently this department has published the results of its investigations of bovine tuberculosis, and its researches will be vigorously continued. Certain herds in the District of Columbia will be thoroughly inspected, and will probably supply adequate scope for the department to intelligently prosecute its scientific work and furnish sufficient material for purposes of illustration, description, and definition.

The sterilization of milk suspected of containing the bacilli of tuberculosis has been during the year very thoroughly explained in a leaflet by Dr. D. E. Salmon, the chief of the bureau, and given general circulation throughout the country.

The Office of Experiment Stations, which is a part of the United States Department of Agriculture, has during the past year engaged itself almost wholly in preparing for publication works based upon the re-

ports of agricultural experiment stations and other institutions for agricultural inquiry in the United States and foreign countries.

The Secretary, in his report for 1893, called attention to the fact that the appropriations made for the support of the experiment stations throughout the Union were the only moneys taken out of the national Treasury by act of Congress for which no accounting to Federal authorities was required. Responding to this suggestion, the Fifty-third Congress, in making the appropriation for the department for the present fiscal year, provided that

"The Secretary of Agriculture shall prescribe the form of annual financial statement required by section 3 of said act of March 2, 1887; shall ascertain whether the expenditures under the appropriation hereby made are in accordance with the provisions of said act, and shall make report thereon to Congress."

In obedience to this law the Department of Agriculture immediately sent out blank forms of expense accounts to each station, and proposes, in addition, to make, through trusted experts, systematic examination of the several stations during each year, for the purpose of acquiring by personal investigation the detailed information necessary to enable the Secretary of Agriculture to make, as the statute provides, a satisfactory report to Congress. The boards of management of the several stations, with great alacrity and cordiality, have approved the amendment to the law providing this supervision of their expenditures, anticipating that it will increase the efficiency of the stations and protect their directors and managers from loose charges concerning their use of public funds, besides bringing the Department of Agriculture into closer and more confidential relations with the experimental stations, and through their joint service largely increasing their usefulness to the agriculture of the country.

Acting upon a recommendation contained in the report of 1893, Congress appropriated \$10,000 "to enable the Secretary of Agriculture to investigate and report upon the nutritive value of the various articles and commodities used for human food, with special suggestion of full, wholesome, and edible rations less wasteful and more economical than those in common use."

Under this appropriation the department has prepared and now has nearly ready for distribution an elementary discussion of the nutritive value and pecuniary economy of food. When we consider that fully one half of all the money earned by the wage earners of the civilized world is expended by them for food, the importance and utility of such an investigation is apparent.

The department expended in the fiscal year 1893 \$2,354,809.56; and out of that sum the total amount expended in scientific research was 45.6 per cent. But in the year ending June 30, 1894, out of a total expenditure of \$1,948,988.38, the department applied 51.8 per cent. of that sum to scientific work and investigation. It is therefore very plainly observable that the economies which have been practiced in the administration of the department have not been at the expense of scientific research.

The recommendation contained in the report of the Secretary for 1893 that the vicious system of promiscuous free distribution of its departmental documents be abandoned is again urged. These publications may well be furnished without cost to public libraries, educational institutions, and the officers and libraries of States and of the Federal Government. But from all individuals applying for them a price covering the cost of the document asked for should be required. Thus the publications and documents would be secured by those who really desire them for proper purposes. Half a million of copies of the report of the Secretary of Agriculture are printed for distribution at an annual cost of about \$300,000. Large numbers of them are cumbering storerooms at the Capitol and the shelves of second-hand bookstores throughout the country. All this



labor and waste might be avoided if the recommendations of the Secretary were adopted.

The Secretary also again recommends that the gratuitous distribution of seeds cease, and that no money be appropriated for that purpose except to experiment stations. He reiterates the reasons given in his report for 1893 for discontinuing this unjustifiable gratuity, and I fully concur in the conclusions which he has reached.

The best service of the statistician of the Department of Agriculture is the ascertainment, by diligence and care, of the actual and real conditions, favorable or unfavorable, of the farmers and farms of the country, and to seek the causes which produce these conditions, to the end that the facts ascertained may guide their intelligent treatment.

A further important utility in agricultural statistics is found in their elucidation of the relation of the supply of farm products to the demand for them in the markets of the United States and of the world.

It is deemed possible that an agricultural census may be taken each year through the agents of the statistical division of the department. Such a course is commended for trial by the chief of that division. Its scope would be:

(1) The area under each of the more important crops.

(2) The aggregate products of each of such crops.

(3) The quantity of wheat and corn in the hands of farmers at a date after the spring sowings and plantings and before the beginning of harvest; and also the quantity of cotton and tobacco remaining in the hands of planters either at the same date or at some other designated time.

The cost of the work is estimated at \$500,000.

Owing to the peculiar quality of the statistician's work, and the natural and acquired fitness necessary to its successful prosecution, the Secretary of Agriculture expresses the opinion that every person employed in gathering statistics under the chief of that division should be admitted to that service only after a thorough, exhaustive, and successful examination at the hands of the United States Civil Service Commission. This has led him to call for such examination of candidates for the position of assistant statisticians, and also of candidates for chiefs of sections in that division.

The work done by the Department of Agriculture is very superficially dealt with in this communication, and I commend the report of the Secretary and the very important interests with which it deals to the careful attention of the Congress.

The advantages to the public service of an adherence to the principles of civil-service reform are constantly more apparent; and nothing is so encouraging to those in official life who honestly desire good government as the increasing appreciation by our people of these advantages. A vast majority of the voters of the land are ready to insist that the time and attention of those they select to perform for them important public duties should not be distracted by doling out minor offices, and they are growing to be unanimous in regarding party organization as something that should be used in establishing party principles instead of dictating the distribution of public places as rewards of partisan activity.

Numerous additional offices and places have lately been brought within civil-service rules and regulations, and some others will probably soon be included.

The report of the commissioners will be submitted to the Congress, and I invite careful attention to the recommendations it contains.

I am entirely convinced that we ought not to be longer without a national board of health or national health officer charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease. This would involve the establishment, by such board or officer, of proper quarantine precautions, or the necessary aid and counsel to local authorities on the subject, prompt

advice and assistance to local boards of health or health officers in the suppression of contagious disease, and in cases where there are no such local boards or officers, the immediate direction by the national board or officer of measures of suppression, constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases, and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities and the measures which should be adopted to secure their enforcement.

There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference with a view of adopting means of mutual assistance. The creation of such a national health establishment would greatly aid our standing in such conferences and improve our opportunities to avail ourselves of their benefits.

I earnestly recommend the inauguration of a national board of health or similar national instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people.

By virtue of a statute of the United States passed in 1888 I appointed in July last Hon. John D. Kernan, of the State of New York, and Hon. Nicholas E. Worthington, of the State of Illinois, to form, with Hon. Carroll D. Wright, Commissioner of Labor, who was designated by said statute, a commission for the purpose of making careful inquiry into the causes of the controversies between certain railroads and their employees which had resulted in an extensive and destructive strike, accompanied by much violence and dangerous disturbance, with considerable loss of life and great destruction of property.

The report of the commissioners has been submitted to me, and will be transmitted to the Congress, with the evidence taken upon their investigation.

Their work has been well done, and their standing and intelligence give assurance that the report and suggestions they make are worthy of careful consideration.

The tariff act passed at the last session of the Congress needs important amendments if it is to be executed effectively and with certainty. In addition to such necessary amendments as will not change rates of duty, I am still very decidedly in favor of putting coal and iron upon the free list.

So far as the sugar schedule is concerned, I would be glad, under existing aggravations, to see every particle of differential duty in favor of refined sugar stricken out of our tariff law. If with all the favor now accorded the sugar-refining interest in our tariff laws it still languishes to the extent of closed refineries and thousands of discharged workmen, it would seem to present a hopeless case for reasonable legislative aid. Whatever else is done or omitted, I earnestly repeat here the recommendation I have made in another portion of this communication, that the additional duty of one tenth of a cent per pound laid upon sugar imported from countries paying a bounty on its export be abrogated. It seems to me that exceedingly important considerations point to the propriety of this amendment.

With the advent of a new tariff policy not only calculated to relieve the consumers of our land in the cost of their daily life, but to invite a better development of American thrift and create for us closer and more profitable commercial relations with the rest of the world, it follows as a logical and imperative necessity that we should at once remove the chief, if not the only, obstacle which has so long prevented our participation in the foreign carrying trade of the sea. A tariff built upon the theory that it is well to check imports and that a home market should bound the industry and effort of American producers was fitly supplemented by a refusal to allow American registry to vessels built abroad though owned and navigated by our people, thus exhibiting a willingness to abandon all contest for the advantages of



American transoceanic carriage. Our new tariff policy, built upon the theory that it is well to encourage such importations as our people need, and that our products and manufactures should find markets in every part of the habitable globe, is consistently supplemented by the greatest possible liberty to our citizens in the ownership and navigation of ships in which our products and manufactures may be transported. The millions now paid to foreigners for carrying American passengers and products across the sea should be turned into American hands. Ship-building, which has been protected to strangulation, should be revived by the prospect of profitable employment for ships when built, and the American sailor should be resurrected and again take his place—a sturdy and industrious citizen in time of peace and a patriotic and safe defender of American interests in the day of conflict.

The ancient provision of our law denying American registry to ships built abroad and owned by Americans appears in the light of present conditions not only to be a failure for good at every point, but to be nearer a relic of barbarism than anything that exists under the permission of a statute of the United States. I earnestly recommend its prompt repeal.

During the last month the gold reserve in the Treasury for the purpose of redeeming the notes of the Government circulating as money in the hands of the people became so reduced, and its further depletion in the near future seemed so certain, that in the exercise of proper care for the public welfare it became necessary to replenish this reserve, and thus maintain popular faith in the ability and determination of the Government to meet, as agreed, its pecuniary obligations.

It would have been well if in this emergency authority had existed to issue the bonds of the Government bearing a low rate of interest and maturing within a short period; but the Congress having failed to confer such authority, resort was necessarily had to the resumption act of 1875, and pursuant to its provisions bonds were issued drawing interest at the rate of 5 per cent. per annum and maturing ten years after their issue, that being the shortest time authorized by the act. I am glad to say, however, that on the sale of these bonds the premium received operated to reduce the rate of interest to be paid by the Government to less than 3 per cent.

Nothing could be worse or further removed from sensible finance than the relations existing between the currency the Government has issued, the gold held for its redemption, and the means which must be resorted to for the purpose of replenishing such redemption fund when impaired. Even if the claims upon this fund were confined to the obligations originally intended, and if the redemption of these obligations meant their cancellation, the fund would be very small. But these obligations when received and redeemed in gold are not canceled, but are reissued, and may do duty many times by way of drawing gold from the Treasury. Thus we have an endless chain in operation constantly depleting the Treasury's gold and never near a final rest. As if this was not bad enough, we have, by a statutory declaration that it is the policy of the Government to maintain the parity between gold and silver, aided the force and momentum of this exhausting process and added largely to the currency obligations claiming this peculiar gold redemption. Our small gold reserve is thus subject to drain from every side. The demands that increase our danger also increase the necessity of protecting this reserve against depletion, and it is most unsatisfactory to know that the protection afforded is only a temporary palliation.

It is perfectly and palpably plain that the only way under present conditions by which this reserve when dangerously depleted can be replenished is through the issue and sale of the bonds of the Government for gold; and yet Congress has not only thus far declined to authorize the issue of bonds best suited to such a purpose, but there seems a disposition in some quar-

ters to deny both the necessity and power for the issue of bonds at all.

I can not for a moment believe that any of our citizens are deliberately willing that their Government should default in its pecuniary obligations or that its financial operations should be reduced to a silver basis. At any rate, I should not feel that my duty was done if I omitted any effort I could make to avert such a calamity. As long, therefore, as no provision is made for the final redemption or the putting aside of the currency obligation now used to repeatedly and constantly draw from the Government its gold, and as long as no better authority for bond issues is allowed than at present exists, such authority will be utilized whenever and as often as it becomes necessary to maintain a sufficient gold reserve, and in abundant time to save the credit of our country and make good the financial declarations of our Government.

Questions relating to our banks and currency are closely connected with the subject just referred to, and they also present some unsatisfactory features. Prominent among them are the lack of elasticity in our currency circulation, and its frequent concentration in financial centers when it is most needed in other parts of the country.

The absolute divorcement of the Government from the business of banking is the ideal relationship of the Government to the circulation of the currency of the country.

This condition can not be immediately reached; but as a step in that direction and as a means of securing a more elastic currency and obviating other objections to the present arrangement of bank circulation, the Secretary of the Treasury presents in his report a scheme modifying present banking laws and providing for the issue of circulating notes by State banks free from taxation under certain limitations.

The Secretary explains his plan so plainly, and its advantages are developed by him with such remarkable clearness, that any effort on my part to present argument in its support would be superfluous. I shall therefore content myself with an unqualified indorsement of the Secretary's proposed changes in the law and a brief and imperfect statement of their prominent features.

It is proposed to repeal all laws providing for the deposit of United States bonds as security for circulation; to permit national banks to issue circulating notes not exceeding in amount 75 per cent. of their paid-up and unimpaired capital, provided they deposit with the Government, as a guarantee fund, in United States legal-tender notes, including Treasury notes of 1890, a sum equal in amount to 30 per cent. of the notes they desire to issue, this deposit to be maintained at all times, but whenever any bank retires any part of its circulation a proportional part of its guarantee fund shall be returned to it; to permit the Secretary of the Treasury to prepare and keep on hand ready for issue in case an increase in circulation is desired blank national bank notes for each bank having circulation and to repeal the provisions of the present law imposing limitations and restrictions upon banks desiring to reduce or increase their circulation—thus permitting such increase or reduction within the limit of 75 per cent. of capital to be quickly made as emergencies arise.

In addition to the guarantee fund required it is proposed to provide a safety fund for the immediate redemption of the circulating notes of failed banks, by imposing a small annual tax, say, one half of 1 per cent., upon the average circulation of each bank until the fund amounts to 5 per cent. of the total circulation outstanding. When a bank fails its guarantee fund is to be paid into this safety fund and its notes are to be redeemed in the first instance from such safety fund thus augmented—any impairment of such fund caused thereby to be made good from the immediately available cash assets of said bank, and if these should be insufficient, such impairment to be made good by *pro rata* assessment among the other banks, their contributions constituting a first lien upon the



assets of the failed bank in favor of the contributing banks. As a further security it is contemplated that the existing provision fixing the individual liability of stockholders is to be retained and the bank's indebtedness on account of its circulating notes is to be made a first lien on all its assets.

For the purpose of meeting the expense of printing notes, official supervision, cancellation, and other like charges, there shall be imposed a tax of, say, one half of 1 per cent. per annum upon the average amount of notes in circulation.

It is further provided that there shall be no national bank notes issued of a less denomination than \$10; that each national bank, except in case of a failed bank, shall redeem or retire its notes in the first instance at its own office or at agencies to be designated by it, and that no fixed reserve need be maintained on account of deposits.

Another very important feature of this plan is the exemption of State banks from taxation by the United States in cases where it is shown to the satisfaction of the Secretary of the Treasury and Comptroller of the Currency by banks claiming such exemption that they have not had outstanding their circulating notes exceeding 75 per cent. of their paid-up and unimpaired capital; that their stockholders are individually liable for the redemption of their circulating notes to the full extent of their ownership of stock; that the liability of said banks upon their circulating notes constitutes under their State law a first lien upon their assets; that such banks have kept and maintained a guarantee fund in United States legal-tender notes, including Treasury notes of 1890, equal to 30 per cent. of their outstanding circulating notes, and that such banks have promptly redeemed their circulating notes when presented at their principal or branch offices.

It is quite likely that this scheme may be usefully amended in some of its details; but I am satisfied it furnishes a basis for a very great improvement in our present banking and currency system.

I conclude this communication fully appreciating that the responsibility for all legislation affecting the people of the United States rests upon their representatives in the Congress, and assuring them that, whether in accordance with recommendations I have made or not, I shall be glad to co-operate in perfecting any legislation that tends to the prosperity and welfare of our country.

GROVER CLEVELAND.

EXECUTIVE MANSION, Dec. 3, 1894.

**The Currency.**—The most important subject that occupied the attention of the Congress at this session was the scheme proposed for a change in the currency system. The President in his message spoke of a plan proposed by the Secretary of the Treasury in his report, "modifying present banking laws and providing for the issue of circulating notes by State banks free from taxation under certain limitations"; and he outlined the main features of the scheme, giving it his approval. Mr. Carlisle embodied his views in a measure which was introduced in the House of Representatives by Mr. Springer, of Illinois, referred to the Committee on Banking and Currency, and reported from that body Dec. 17, 1894. The measure as reported was as follows:

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That all acts and parts of acts which require or authorize the deposit of United States bonds to secure circulating notes issued by national banking associations be, and the same are hereby, repealed, and such notes hereafter prepared shall not contain the statement that they are so secured.

SEC. 2. That any national banking association organized as now provided by law, and any national banking association hereafter organized, may take out

circulating notes to an amount not exceeding 75 per cent. of its paid-up and unimpaired capital, upon depositing with the Treasurer of the United States United States legal-tender notes, including Treasury notes issued under the act approved July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," as a guarantee fund equal to 30 per cent. of the circulating notes applied for. The association making such deposit shall be entitled to receive from the Comptroller of the Currency circulating notes in denominations of \$10 and multiples thereof in blank, registered and countersigned, as provided by law, and all such notes, together with the circulating notes of national banking associations now outstanding, shall constitute, and are hereby declared to be, a first lien upon all the assets of the association issuing the same.

All circulating notes hereafter furnished to national banking associations shall be uniform in design, but any association desiring to redeem its circulating notes in gold may have them made payable in that coin; and the Secretary of the Treasury is hereby authorized and directed to have prepared and keep on hand, ready for delivery on application, a reserve of blank notes for each national banking association having circulation, but such reserve for each bank shall at no time be in excess of the difference between the amount of its notes then outstanding and the total amount which it is by this act authorized to receive.

SEC. 3. That in lieu of all existing taxes each national banking association shall pay to the Treasurer of the United States, in the months of January and July of each year, a duty of one fourth of 1 per cent. for each half year upon the average amount of its notes in circulation, and in computing such average all notes issued by such association and not actually retired from circulation in the manner hereinafter provided shall be included.

SEC. 4. That each national banking association shall redeem its notes at par on presentation at its own office and at such agencies as may be designated by it for that purpose, and whenever such association desires to retire the whole or any part of its circulation the notes to be retired shall be forwarded to the Comptroller of the Currency for cancellation, and thereupon 30 per cent. of the amount of such canceled notes shall be returned to the association. Defaced and mutilated notes and notes otherwise unfit for circulation, which have been redeemed by any association, may be returned to the Comptroller of the Currency for destruction and reissue, as now provided by law.

SEC. 5. That in order to provide a safety fund for the prompt redemption of the circulating notes of failed national banking associations, each such association now organized, or hereafter organized, shall pay to the Treasurer of the United States, in the months of January and July in each year, a tax of one fourth of 1 per cent. for each half year upon the average amount of its circulating notes outstanding, to be computed as hereinbefore provided, until the said fund amounts to a sum equal to 5 per cent. upon the total amount of national bank notes outstanding, and thereafter said tax shall cease.

Each association hereafter organized, and each association applying for additional circulation, shall pay its *pro rata* share into the said fund before receiving notes; but an association retiring or reducing its circulation shall not be entitled to withdraw any part of said fund. When a national banking association becomes insolvent its guarantee fund held on deposit shall be transferred to the safety fund herein provided for, and applied to the redemption of its outstanding notes; and in case the said last-mentioned fund should at any time be impaired by the redemption of the notes of failed national banks, and the immediately available assets of said banks are not sufficient to reimburse it, said fund shall be at once restored by *pro rata* assessments upon all the other associations



according to the amount of their outstanding circulation, and the association so assessed shall have a first lien upon the assets of each failed bank for the amount properly chargeable to such bank on account of the redemption of its circulation.

SEC. 6. That the Secretary of the Treasury may from time to time invest any money belonging to the safety fund in United States bonds, and the bonds so purchased, and the interest accruing thereon, shall be held as part of the said fund. Such bonds may be sold when necessary and the proceeds used for the redemption of the circulating notes of failed national banks.

SEC. 7. That every national banking association heretofore organized and having bonds on deposit to secure circulation shall, on or before the 1st day of July, 1895, withdraw such bonds and deposit with the Treasurer of the United States a guarantee fund consisting of United States legal-tender notes, including the Treasury notes issued under the act of July 14, 1890, equal to 30 per cent. of its outstanding circulation at the time of such withdrawal and deposit, and all laws and parts of laws requiring such association to deposit, or to keep on deposit, with the Treasurer of the United States bonds of the United States for any purpose other than as security for public moneys, shall be, and are hereby, repealed from and after the said date.

SEC. 8. That sections 9 and 12 of the act approved July 12, 1882, entitled "An Act to enable national banking associations to extend their corporate existence, and for other purposes," and section 31 of the act approved June 3, 1864, entitled "An Act to provide a national currency secured by a pledge of United States bonds, and to provide for the circulation and redemption thereof," and all acts and parts of acts amendatory thereof be, and the same are hereby, repealed.

SEC. 9. That the Secretary of the Treasury may, in his discretion, use from time to time any surplus revenue of the United States in the redemption and retirement of United States legal-tender notes, but the amount of such notes retired shall not in the aggregate exceed an amount equal to 70 per cent. of the additional circulation taken out by national banks and State banks under the provisions of this act; and hereafter no United States notes, or Treasury notes authorized by the act of July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," of a less denomination than \$10 shall be issued, and as rapidly as such notes of denominations less than \$10 shall be received into the Treasury they shall be canceled and an equal amount of notes of like character, but in denominations of \$10 or multiples thereof, shall be issued in their places, but nothing in this act shall be so construed as to repeal or in any manner affect the second section of the said act of July 14, 1890.

SEC. 10. That the use of circulating notes issued by a banking corporation duly organized under the laws of any State, and which transacts no other than a banking business, shall be exempt from taxation under the laws of the United States when it is shown to the satisfaction of the Secretary of the Treasury and the Comptroller of the Currency

(1) That such bank has at no time had outstanding its circulating notes in excess of 75 per cent. of its paid-up and unimpaired capital.

(2) That its stockholders are individually liable for the redemption of its circulating notes to the full extent of their ownership of stock; but this shall not be required in the case of persons holding stock as executors, administrators, guardians, or trustees, if the assets and funds in their hands are liable in like manner and to the same extent as the testator, intestate, ward, or person interested in such funds would be if living and competent to act and hold the stock in his own name.

(3) That the circulating notes constitute by law a first lien upon all the assets of the bank.

(4) That the bank has at all times kept on deposit with an official of the State authorized by law to receive and hold the same, a guarantee fund in United States legal-tender notes, including Treasury notes of 1890, equal to 30 per cent. of its outstanding circulating notes; and

(5) That it has promptly redeemed its notes at par on demand at its principal office, or at one or more of its branch offices, if it has branches.

SEC. 11. That the Secretary of the Treasury may, under proper rules and regulations to be established by him, permit State banks to procure and use in the preparation of their notes the distinctive paper used in printing United States securities; but no State bank shall print or engrave its notes in similitude of a United States note, or certificate, or national bank note.

The Carlisle bill was entitled "An Act to amend the laws relating to national banking associations, to exempt the notes of State banks from taxation upon certain conditions, and for other purposes." In explanation of the measure, Mr. Springer said:

"The Comptroller of the Currency, in his report to Congress, dated Dec. 3, 1894, on page 27, submits a table showing the number of depositors in national, State, and private banks, loan and trust companies, and savings banks in the United States on Oct. 31 last. This statement shows that there were 8,143,000 persons in the United States who kept accounts in all our banks. The same statement also shows that the deposits made by these persons amounted to \$4,220,000,000.

"On page 12 of the Comptroller's report is given a statement of the capital stock of the national and State banks in the United States, which aggregates \$1,069,000,000. The total banking funds of all the banks in the United States, embracing capital stock, surplus, undivided profits, and deposits in national and other banks amounted to \$6,407,000,000.

"These statements, Mr. Chairman, will serve to illustrate the great importance and the universal interest manifested in the subject now before this committee.

"The Committee on Banking and Currency, which has recommended the passage of the pending bill and has asked for its immediate consideration by this committee and by this House, has been giving the question careful consideration ever since the appointment of the committee by the Speaker of this House in August, 1893. It is not a sudden and unconsidered conclusion to which we have arrived, therefore, but the most careful deliberation has been given to this great subject.

"Since the message of the President of the United States and the report of the Secretary of the Treasury to this Congress at its present session the committee have had hearings and invited before them prominent bankers and financiers from every part of the country. The statements of these gentlemen are printed and before the members of this House. We have deemed it best to report a bill for the consideration of the House, and we ask this committee to enter upon its consideration soberly, candidly, and with the sole view to the promotion of the best interests of our common country.

"This bill does not represent the individual views of any member of the committee, or perhaps of any member of this House, in its entirety.



It is a compromise bill, a measure which, as it is believed, comes nearer to representing the average of sentiment on this subject than any other that has been proposed, and we ask its consideration, not because each member of the committee would have prepared it exactly in that way, but because we believe that is the best we can do under the circumstances, and we believe it is a step, and a great step, in the right direction, a step toward better conditions and toward a reform in our financial system that will give greater stability and greater confidence in this country and throughout the world.

"The present national banking law requires that banks desiring to take out circulation shall deposit with the Treasurer of the United States bonds of the United States, and currency may be issued upon these bonds to 90 per cent. of the par value of the bonds. Our bonds are now worth a premium of 17. If the banks are required to pay \$117 for the bonds, and only get \$90 in return in the shape of currency, the conditions are now such that the issuance of national bank currency is no longer profitable, and there is a continual shrinkage in the national bank currency, which has been going on for a number of years. On the 1st day of November, 1894, the amount of national bank notes in circulation was only \$202,000,000.

"At that time, I may state, the total circulating medium of the United States outside of the Treasury, including gold coin and standard silver dollars, was \$1,672,000,000. The experience of other countries and the best judgment in this country has now reached the conclusion that a bond security is no longer necessary in order to secure bank circulation. At the last session I introduced a bill which provided for receiving deposits of State, county, and municipal bonds, as well as national bonds. But there was this objection to that measure, that nearly all such bonds were held in the East or abroad, and that they were not available in localities where currency was scarce as security for bank circulation.

"The pending bill does not require a deposit of United States bonds nor any other interest-bearing obligation in order to make proper security for the circulating notes.

"It is conceded on all hands, and your committee have taken this subject under the most careful consideration, that there should be no circulating medium issuing from the banks of the country that is not absolutely safe, not only safe in times when everything is flourishing and prosperous, but safe at all times; in time of panics, in time of commercial disaster, at every hour of the day; that the bill shall be paid upon presentation at its face value.

"A great many United States bonds are held in trust capacities and can not be reached for the purpose of being used as a deposit to secure circulation.

"In lieu of the security heretofore required for circulating notes your committee have recommended the following provisions:

First. A guarantee fund consisting of Treasury notes, including the notes issued under the act of Congress approved July 14, 1890, equal to 30 per cent. of the circulating notes applied for.

Second. A safety fund, which will amount when it

reaches its maximum to 5 per cent. upon the total amount of national bank notes outstanding.

Third. A first lien upon all the assets of the association issuing the same.

In case the guarantee and safety funds and the assets of the failed bank are not sufficient to redeem the notes of such bank, a *pro rata* assessment upon all the other banking associations, according to the amount of their outstanding circulation, is to be made by the Treasury Department, and the banks so assessed shall have a first lien upon the assets of each failed bank for the amount properly chargeable to such bank on account of the redemption of its circulation.

"In addition to this the stockholders, as now provided by law, are liable to an amount equal to the value of the amount of the stock which they hold in the bank. Out of the assets of the bank, out of the amount received from the personal-liability clause, from the safety fund and the guarantee fund the notes of any failed bank can be paid.

"I desire to call attention to a few facts which will show conclusively that this provision is ample for securing the notes of the banks under all conditions. The bill limits the amount of notes which any bank may take out at 75 per cent. of the capital stock of the bank. The whole amount of the capital stock of all the national banks at this time is \$672,000,000; and if all the banks in the United States should take out all the currency to which they are entitled under this bill the whole circulating bank currency would amount to \$504,000,000.

"The 5-per-cent. safety fund upon this circulation would amount to \$25,000,000, and the guarantee fund which is required to be deposited in the Treasury of the United States by each bank, amounting to 30 per cent. upon the circulation applied for, would amount to \$151,000,000. The resources of all the national banks, which are ultimately and remotely responsible for the circulation of every bank that fails, amounted on Oct. 31 to \$3,473,000,000. Upon a possible circulation of \$504,000,000 there would be an available guarantee fund in the Treasury of \$151,000,000, a safety fund of \$25,000,000, and an ultimate fund out of which the notes of any failed bank could be paid amounting to \$3,473,000,000.

"During the financial crisis of 1893 158 national banks suspended, having a capital stock of \$30,000,000. If at that time all of the national banks in the United States had taken out all the circulation to which they would be entitled under this bill if it had then been in force, and if all the banks that suspended had also taken out the full amount of circulation to which they would have been entitled, their circulation would have amounted to \$22,762,000. The 30 per cent. which the banks that suspended would have deposited would have been first applied to the payment of these notes. This would have left \$13,934,000 of circulating notes to be paid out of the safety fund, which, as before stated, would have amounted to \$25,000,000.

"These facts show conclusively that if the proposed bill had been in force during the crisis of 1893, and if all the banks had then taken out circulation to the maximum allowed by the law and if the suspended banks had also taken out their maximum amount of circulation, the guarantee and safety fund would have been ample

for the payment of the entire outstanding notes of the suspended banks, and there would have been a surplus of over \$11,000,000 still in the safety fund.

"But of the 158 banks that suspended 86 resumed payment within a short period, and there was no loss in those cases either to the bill holders or to the depositors. There were only 65 national banks that went into the hands of receivers during that crisis, and they had a capital stock of \$10,935,000. If we assume that the notes of those 65 banks only were to be paid out of the guarantee and safety fund, then there would have been only \$8,200,000 of outstanding notes of all the banks which passed into the hands of receivers even if they had all taken out their maximum amounts. The 30-per-cent. guarantee fund would have paid \$2,460,000 of those notes, which would have left only \$4,100,000 to be paid out of the 5-per-cent. safety fund.

"But all of those banks had available assets, and the stockholders were individually liable to amounts equal to their stock, so that here was an additional fund out of which the notes could have been paid. The unavailable assets could have been realized on in the end, and that, with the liability of the stockholders, would have yielded a considerable additional sum. If it should be assumed that all the national banks which were in existence on Oct. 31 last were organized under the proposed law, and that all of them in a great financial crisis had failed, and if it should be assumed that all of them had taken out, under the pending bill, the entire circulation to which they would have been entitled, the condition would have been as follows: The circulation would have amounted to \$504,000,000. The guarantee and safety fund would have amounted to \$176,000,000. That would leave \$328,000,000 of circulating notes the payment of which would be secured and paid by a *pro rata* assessment from the resources of all the national banks in the United States.

"These resources, as I have before stated, amounted on Oct. 1 last to \$3,473,000,000. The amount of the notes, it will be seen, would not equal 10 per cent. of the fund out of which they could be paid. This does not include the fund which would be derived from the personal liability of the stockholders. In view of these facts it seems to me conclusive that under the proposed bill, even in a great crisis such as that which swept over the country in 1893, there could be no possible loss to any person who had in his possession a bill issued by a national bank under the provisions of this proposed law.

"Objection has been made in some quarters to the provision of the bill requiring the Secretary of the Treasury to levy a *pro rata* assessment upon all the banks in the system for the purpose of making good any deficit that there may be in the available assets of the bank and in the guarantee and safety funds for the payment of the notes of a failed bank. It has been stated that the national banks of the United States will not take out circulation under this provision. I do not believe it. The national bankers met in convention in Baltimore last October and formulated a bill which carried out their wishes in regard to a national-bank system.

"The bill formulated by that convention is known as the Baltimore plan, and it differs from the plan submitted by your committee in requiring that the Government of the United States, if the safety fund and the available assets of a failed bank should be insufficient to pay the notes of that bank, shall pay the difference out of the Treasury. But I want to call the attention of gentlemen to the fact that there is a provision in the Baltimore plan which authorizes the Government immediately to levy a tax upon the banks for the purpose of making good the funds advanced by the Government for such purpose and for the purpose of making good the safety fund; so that in practical operation the Baltimore plan subjects the banks in this respect to practically the same responsibility as the bill which your committee reports.

"I desire to call attention to another feature of the Baltimore plan. That plan provides first that the redemption fund now required by law shall be deposited in the Treasury, amounting to 5 per cent. of the circulation in each bank. That fund belongs to the bank and is a part of its assets. In addition to that redemption fund, which is to be used for the redemption of the notes of the failed banks—for the purpose of current redemption at the Treasury—there is what is called a guarantee fund provided in the sixth section of this Baltimore plan through the deposit by each bank of 2 per cent. upon the amount of the circulation received by it the first year.

Thereafter impose a tax of one half of 1 per cent. upon the average amount of outstanding circulation, the same to be paid into this fund until it shall equal 5 per cent. of the entire circulation outstanding, when the collection of such tax shall be suspended, to be resumed whenever the Comptroller of the Currency shall deem it necessary.

"This one half of 1 per cent. per annum may be imposed whenever necessary to restore this fund.

The notes of insolvent banks shall be redeemed by the Treasurer of the United States out of the guarantee fund if it shall be sufficient—

"And it is provided previously that the redemption fund shall also be applied for that purpose

if it shall be sufficient, and if not sufficient, then out of any money in the Treasury, the same to be reimbursed to the Treasury out of the "guarantee fund" when replenished either from the assets of the failed banks or from the tax aforesaid.

"There is precisely in effect the same provision in the Baltimore plan for the ultimate liability of all the banks for the notes of any failed bank in the entire system."

Dec. 21, Mr. Springer submitted a substitute for the Carlisle bill. Among the changes of importance was one in section 2, allowing currency certificates issued under section 5193 of the Revised Statutes to be deposited as part of the 30-per-cent. guarantee fund. The closing part of section 5 was amended so as to read as follows:

When a national banking association becomes insolvent its guarantee fund held on deposit shall be transferred to the safety fund herein provided for, and applied to the redemption of its outstanding notes; and in case the said last-mentioned fund should at



any time be impaired by the redemption of the notes of failed national banks, and the immediately available assets of said banks are not sufficient to reimburse it, the collection of said tax of one fourth of 1 per cent. for each half year shall be resumed and continued until the said fund is restored to an amount equal to 5 per cent. upon the total circulation outstanding. All circulating notes of failed national banks not redeemed on presentation to the Treasurer of the United States, or an assistant treasurer of the United States, shall bear interest at the rate of 6 per cent. per annum from the date of the suspension of the bank until thirty days after public notice has been given that funds are on hand for their redemption, and such notes shall constitute a first lien upon all moneys thereafter received into the safety fund.

Section 7 was changed altogether so as to read :

SEC. 7. That every national banking association heretofore organized and having bonds on deposit to secure circulation may withdraw such bonds upon the deposit of lawful money of the United States, as now provided by law, and thereafter such association may take out circulation under this act and be entitled to all the rights, privileges, and immunities herein conferred.

In section 8 only so much of the Act of July 12, 1882, as directs deposits of gold and the issue of certificates thereon, was declared repealed. In section 9, the limitation of United States notes and Treasury notes to denominations of \$10 and multiples of that amount was extended to national bank notes. To section 10 the following clause was added :

Whenever the Secretary of the Treasury and the Comptroller of the Currency shall be satisfied that any banking corporation duly organized under the laws of any State, and which transacts no other than a banking business as provided in this section, has been incorporated under the laws of the State in which it is located and that such laws require that its stockholders shall be individually liable for the redemption of its circulating notes to an amount equal to the par value of the capital stock owned by them, and that such laws require that the circulating notes thereof shall constitute a first lien upon all the assets of the bank, and also that such laws require such bank to keep on deposit at all times with an official of the State authorized by law to receive and hold the same a guarantee fund as required in the fourth paragraph of this section, they shall issue to said bank a certificate to that effect. Thereupon said bank may issue its notes as provided in this act, and thereafter the tax of 10 per cent. heretofore imposed by law upon the circulation of the notes of State banks shall not be assessed or collected upon the notes of such bank unless it appears that said bank has issued circulating notes in excess of 75 per cent. of its paid-up and unimpaired capital, or that its capital is impaired and has remained so for thirty days, or that the bank has not kept on deposit with the State official authorized by law to receive and hold the same a guarantee fund as required in the fourth paragraph of this section, or that said bank has not promptly redeemed its notes in lawful money at par on demand at its principal office, or at one or more of its branch offices, if it has branch offices ; and that no person or corporation other than the bank issuing such notes in violation of the provisions of this act, shall be liable to the tax of 10 per cent. upon the circulating notes of State banks as now provided by law.

And section 11 was altered as follows :

SEC. 11. That any banking association organized under the laws of any State may deposit with the Treasurer of the United States legal-tender notes and receive certificates therefor, in the manner provided

in section 5193 of the Revised Statutes of the United States, and the Secretary of the Treasury may, under proper rules and regulations to be established by him, permit such banks to procure and use in the preparation of their notes the distinctive paper used in printing United States securities ; but no State bank shall print or engrave its notes in similitude of a United States note, or certificate, or national bank note.

Mr. Dingley, of Maine, represented in his discussion of the measure the reasons for Republican opposition. He dwelt on the fact that the source of the financial embarrassment of the Government was lack of revenue, and insisted that no mere currency legislation would meet that difficulty. His main point of criticism, however, was the fact that the bill would revive State banks as banks of issue. He said :

"I now come, Mr. Chairman, to the overshadowing objection to this bill, and this is that it revives State banks as banks of issue. It is to me a matter of surprise that after this House, only six months ago, declared by 70 majority against the rehabilitation of State banks as banks of issue, the Secretary of the Treasury should formulate and the majority of the Committee on Banking and Currency should report a banking bill whose central feature provides for exactly that which the House so recently and so emphatically declared it would not tolerate.

"And the excuse given by the chairman of the Banking Committee for this right-about-face, viz., that this bill provides for the rehabilitation of State banks as banks of issue only on conditions which he thinks are entirely satisfactory, only serves to increase my surprise. For if there was one argument against State banks of issue made by him and by others more prominent than any other in the discussion of this question at the last session, it was that after our experience of the great advantages of one uniform national banking system, under national control and national supervision, over two score different State systems, under the divided and discordant control and supervision of as many different States, the country never would consent to go back.

"If the conditions under which the pending bill proposes to rehabilitate State banks as banks of issue make them practically national so far as note issues are concerned, as the gentleman would have us infer, then certainly it would be not only a waste of time, but unwise from any point of view, to attempt to maintain State banks of issue in name when in reality the limitations, restrictions, control, and supervisions of their chief function are to be national. If this were to be the case in fact I am sure that every supporter of the State-bank system would say : 'Better avoid confusion, uncertainty, and conflict of jurisdiction by not undertaking to establish a double-headed system with a State annex in form, when it must be national in reality.'

"But, Mr. Chairman, it is because the conditions proposed are only shadow and not substance that gentlemen who cling to State banks of issue as if they recognized something of State-rights ideas accept them as a realization of their dreams of State sovereignty. Do these conditions contemplate, as to issue functions, national control and national supervision ? Nothing of the kind ; but, on the contrary, the control and

supervision of 45 States. If it be said that in four respects, viz., the maximum limit of issue, the deposit of a guarantee fund, personal liability of shareholders, and first lien on assets, it is proposed to require that State banks of issue shall conform to the status of national banks as a condition of exemption from the 10-per-cent. tax, I reply that, in the first place, these are only a part of the requirements for national banks, and that, even if they were all, the failure to provide for effective national supervision would make the requirements practically nugatory.

"Practically it would be found impossible to exercise any effective national control over State banks of issue under such legislation as is proposed, as State banks receive their franchises from the several States and are subject to State control and supervision; and even the right of the national Comptroller of the Currency to investigate from time to time the condition of a State bank to ascertain whether the four national conditions of issue have been complied with is left purposely to an uncertain implication, rather than positive provision, of law. Certainly, gentlemen who take the ground, as many friends of State banks do, that the National Government has no right to interfere with State banks of issue, will not be likely to provide hereafter any serious Federal restrictions on the issues of such banks.

"The fact must not be overlooked that the conditions proposed practically offer a premium for even existing national banks to change to State banks of issue, by exempting State banks of issue, not only from the essential but exacting Government supervision, but also from the payment of the general tax of half of 1 per cent. per annum, and also the payment of the special safety-fund tax of the same amount. When it is borne in mind that banking is a business, pursued because of the expectation of profit like other kinds of business, it will be seen that if this bill should become a law there would be serious danger that under the guise of extending the national banking system it would prove to be a potent inducement for its destruction and for the substitution of 45 State-bank systems.

"I do not propose at this time to recall at length the arguments for 1 national- rather than 45 State-bank systems which led this House at the last session by 70 majority to declare against the rehabilitation of State banks as banks of issue in any form. I merely indicate some of the points of these arguments.

"The four essentials of a good bank currency are, first, ultimate safety or payment of issues; second, immediate convertibility into coin or its equivalent; third, uniformity, convenience, and economy; and fourth, elasticity of issue—that is, response of issue to the demands of business.

"The first three of these essentials have been found in the circulation of our national banks as they never have been and never can be found in the circulating notes of 45 different State-bank systems.

"As to ultimate safety, contrast the fact that in thirty years' experience with State systems before the war, according to the Comptroller of the Currency, the losses through the notes of the failed banks averaged one fifth of the aggre-

gate circulation; while not one dollar has been lost by holders of notes of national banks in the thirty years since the national banking system became general.

"As to convertibility, contrast the fact that the notes of State banks were constantly from one half of 1 per cent. to 5 per cent. discount, where they were received at all, outside of the States of issue, with the fact that during the thirty years in which we have had the national system the notes of national banks in Texas or Oregon have been as current at par in Maine or New York as in the States where issued.

"As to uniformity, convenience, and economy, contrast the fact that in the years of our different State systems before the war the diversity of circulating notes made counterfeiting easy, promoted distrust, and limited the usefulness of notes of issue, and the absence of a common control and common regulations and a common tie increased the friction and cost of exchanges; while in the thirty years since the war, under the national system, counterfeiting has been made difficult and the detection of counterfeiters easy—it has been unnecessary for the traveler or business man to consider for a moment whether the national notes which he carried were issued in Vermont or Montana or Mississippi, and has so promoted and economized exchanges that the Comptroller of the Currency estimates a saving of at least \$120,000,000 per annum on bills of exchange alone in the conduct of the business of the country.

"In directions affecting elasticity of issue alone the national system needs amendment to adapt it to changed conditions. When established it was reasonably elastic as to issue, because United States bonds were abundant and obtainable at or below par, so that a profit could be made on note issues which could be loaned. But in progress of time such bonds have become scarce and command a premium, and this, coupled with the fact that the law still permits an issue of only 90 per cent. of the par value of the bonds, has made the issue of circulating notes on such bond security unprofitable, and in making it unprofitable has made it unresponsive to business demands.

"If, instead of devising a bill to rehabilitate State banks of issue, the Committee on Banking and Currency had assumed, what they should have assumed, that any legislation dealing with banks of issue must be on the lines of a uniform national system, under the sole control and constant supervision of the nation, and had proceeded to make such changes in the national system as would have provided reasonable security on the one hand and reasonable elasticity of issue on the other hand, they would have done themselves more credit and the country a real service, even if their work had not resulted in legislation at this session.

"But in bringing into the House a hastily framed bill, which has not even had the benefit of the criticisms and amendments of the members of that committee in the committee room, whose central idea is the rehabilitation of State banks as banks of issue, they have failed to strike the keynote of the legislation which the country expects.

"I can not understand, Mr. Chairman, why it



is that so many of our Southern friends look so favorably upon State banks of issue. If it is because they find the national system requires so excessive security for the issue of circulating notes as to fail to adapt itself to their wants, then I ask, Why not join those who believe in the national system in so modifying the security requirements enacted under different conditions as to make them conform to the present situation? For it must be apparent to every student of finance that a national system in which each bank must receive at par the notes of every other bank in payment of debts due to it—which would be impossible with the notes of State banks—requires less security to make circulating notes safe and convertible than would be necessary under disunited State systems.

"It ought to be evident, as the Comptroller of the Currency so clearly shows in his last report, that for this reason, as well as for the reason that there is greater confidence in the intelligence, efficacy, and courage of national supervision than State supervision of bank issues, there is more confidence, not only among the people, but also among capitalists, in national banking institutions than in State banks. Inasmuch as the Southern people rightly regard it as of the greatest importance to them that Northern capital should be attracted to their States, not only for banking purposes, but also for industrial development, it is certainly surprising that their Representatives in Congress should for a moment fall into the error of regarding State banks as more desirable than national banking institutions for that part of the Union, for capital would be much more likely to be attracted to a national than to a State bank.

"If it is because it is thought that State-bank notes will stay at home and not tend, at certain seasons when payments are to be made for supplies and when there is little demand for home loans, to move to commercial centers, then I call attention to the fact that there can be no difference in this respect between a good currency issued by State banks, or by national banks, or even by the nation itself, for the unwritten laws of trade are supreme. The only way that I know of to keep currency at home when there is no demand for it for home business, and when it is required to make payments at the commercial centers, is to make it so poor that nobody outside will take it except at a discount. It is the added eggs, not the good eggs, that stay at home. If there be any provisions in the laws regulating our national system which improperly act as an inducement for country banks to deposit in reserve cities loanable funds needed at home, as sometimes charged, such provisions may be easily modified. A little reflection ought to satisfy every one that any currency which will not pass beyond the State lines where issued, except at a discount, entails a loss on the people of such State proportioned to the discount to which it is subjected when purchases are to be made outside of State limits.

"I have heard some of our Southern friends say that they wanted a home currency—a currency in which their own people were interested, but I can not understand why a dozen citizens of Georgia, for example, who organize a State bank are any more interested in their people than

when they organize a national bank, or why the issues of a national bank in Charleston are any the less a home currency than the issues of a State bank in the same city.

"Mr. Chairman, the regulation of the currency is a function essentially national, and no State has any more business with it than with the regulation of postal affairs or the regulation of interstate and foreign commerce. Whatever possesses the circulating quality, that is, the quality which causes it to pass on delivery from hand to hand in exchange for valuables—a quality entirely distinct from that possessed by a check or bill of exchange—is money, and as such should be issued under national laws alone and subject alone to national control and supervision. And in saying this, I only repeat what the people of this country have settled beyond recall; and whatever party or whatever men or set of men undertake to settle our currency problem may as well understand first as last that it must be settled on national and not on State lines."

Mr. Bland, of Missouri, protested against the measure in behalf of a portion of the Democracy:

"All your makeshifts are but a fraud and a sham. I believe that the American people will after a while understand this, if they do not now. It may take a few years more of hard times, of grinding poverty, a few more bank failures, to teach them this lesson. And the men who have heretofore enjoyed the profits of this increased value of their securities are to-day becoming very much alarmed on account of the shrinkage of value of the property or wealth on which these securities are resting. Take your railroad securities. Half of your railroads are to-day in the hands of receivers. I do not like to allude to this railroad question just now, and will not do so for the purpose of giving offense to any members of this House.

"You undertook recently to save the railroad monopolies from the effects of the single gold standard by permitting them to pool, to go into trusts. Why was that done? Simply because the shrinkage of the value of their earnings and their securities was bankrupting those corporations, and they came here for relief. All the banking and railroad monopolies and their trusts come here to be saved. The tariff barons and all of them come, each and every one seeking, by means of legislation at the hands of Congress, to escape the crash that is coming in the future, by being made the preferred pets of Congress.

"Mr. Chairman, in the name of an outraged Democracy I protest against the whole proceeding. I have been a Democrat all my life, and expect to live and die one, battling for the principles of that great party. I believe them to be essential to the perpetuity of the republic. I have seen them trampled upon here day by day and month by month. But this House is not the Democratic party. Neither is this Administration the Democratic party. I will appeal from this presence to that vast yeomanry of this country, the great masses of the people, and I hope that there will be a sufficiency of the Democratic party to rally around the great principles of Democracy, therefore, in the coming days and reorganize the party on the principles of Jefferson and Jackson, and go back to the ancient days and landmarks on which the party has

grown and prospered and made this country great and happy.

"I have no sympathy with all of these schemes of monopoly, national banks, and trust monopolies. They do not belong to our system of government. I have no sympathy with the legislation which has been inaugurated in their behalf—railroad pooling, trusts, and monopolies of all kinds. It is true that the House has conformed in a great many ways to the demands of the people. It has passed a great many very important bills on the lines of Democracy; and, so far as we are concerned, we have conformed in the tariff as nearly as we could to our promises and pledges. We passed the seigniorage bill and repealed the Federal election law, and enacted a great many measures of importance to the people of this country; and yet on this money question we have not conformed to our principles or to our pledges. And we, Mr. Chairman, who believe in the principles—the great principles of Democracy—will insist that neither now nor in the future shall there be any compromise on this subject that does not look to the restoration of the money of the Constitution and bringing the Democratic party back on the lines of Democratic principles."

An attempt was made to rush the measure through the House of Representatives; and Jan. 7, 1895, a Democratic caucus was held, at which it was decided by a vote of 81 to 59 to call upon the House Committee on Rules to report a resolution, providing for the consideration of the Springer substitute for the Carlisle bill, in general debate, for one day, then for its discussion under the five-minute rule, and finally for a vote on its passage before the close of the week. On Wednesday, Jan. 9, the following resolution for immediate consideration was reported from the Committee on Rules by Mr. Outhwaite, of Ohio, who called for the previous question on it:

*Resolved*, That, immediately upon the adoption of this order, the House shall resolve itself into the Committee of the Whole for the further consideration of H. R. 8149; that general debate thereon be then closed. That H. R. No. 8410 (which is substantially the substitute bill submitted by the chairman of the Committee on Banking and Currency on the 21st day of December last) be substituted for said bill, and considered by said Committee of the Whole as an original bill, under the five-minute rule, this and each succeeding day after the morning hour (unless sooner disposed of) until 4.50 p. m. on Friday, the 11th instant, when the same shall be reported to the House, with pending amendments, and the previous question shall then be considered as ordered on said amendments and on the bill to its passage. On Saturday, the 12th instant, immediately after the first morning hour, without intervening motions, the vote shall be taken on said bill and amendments until the same has been fully disposed of.

It was understood that a refusal to sustain the demand for the previous question would kill the measure; and it failed by the following vote:

YEAS—Abbott, Alderson, Alexander, Allen, Bankhead, Barnes, Barwig, Beckner, Bell of Texas, Berry, Black of Georgia, Boatner, Bower of North Carolina, Bretz, Brickner, Brookshire, Cabaniss, Cadmus, Campbell, Cannon of California, Caruth, Catchings, Causey, Claney, Clarke of Alabama, Cobb of Alabama, Coombs, Cornish, Covert, Cox, Crawford, Culberson,

Davey, Denson, Dinsmore, Dockery, Durborrow, English of California, Epes, Erdman, Fielder, Fithian, Geary, Geissenhainer, Goodnight, Grady, Gresham, Griffin of Michigan, Hall of Minnesota, Hall of Missouri, Hammond, Hare, Harrison, Henderson of North Carolina, Henry, Hines, Holman, Hutcheson, Izlar, Kilgore, Kyle, Lapham, Lawson, Lester, Livingston, Lockwood, Lynch, Maddox, Mallory, Martin of Indiana, McCreary of Kentucky, McCulloch, McDearmon, McGann, McKaig, McMillin, Meredith, Meyer, Montgomery, Moses, O'Neil of Massachusetts, Outhwaite, Page, Paschal, Patterson, Pearson, Pendleton of Texas, Pendleton of West Virginia, Pigott, Richards of Ohio, Richardson of Tennessee, Ritchie, Robbins, Rusk, Russell of Georgia, Ryan, Sayers, Schermerhorn, Sipe, Sperry, Springer, Stallings, Stevens, Stone of Kentucky, Straus, Swanson, Talbott of Maryland, Tate, Taylor of Indiana, Tracey, Tucker, Turner of Georgia, Tyler, Warner, Washington, Weadcock, Wells, Wheeler of Alabama, Williams of Illinois, Williams of Mississippi, Wilson of West Virginia, Wise, Wolverton, Woodard—124.

NAYS—Adams of Pennsylvania, Aldrich, Arnold, Avery, Bailey, Baker of Kansas, Baker of New Hampshire, Bartholdt, Bell of Colorado, Beltzhoover, Bland, Boen, Bowers of California, Broderick, Bromwell, Brosius, Bryan, Bundy, Cannon of Illinois, Capehart, Chickering, Clark of Missouri, Cockrell, Coffeen of Wyoming, Coffin of Maryland, Conn, Cooper of Texas, Cooper of Wisconsin, Cousins, Curtis of Kansas, Curtis of New York, Dalzell, Daniels, Davis, De Armond, Dingley, Dolliver, Doolittle, Draper, Edmunds, Ellis of Kentucky, Ellis of Oregon, Gardner, Gillet of New York, Gillett of Massachusetts, Griffin of Wisconsin, Grout, Grow, Hager, Hainer of Nebraska, Haines, Harmer, Harris, Hartman, Hatch, Haugen, Henderson of Iowa, Hepburn, Hermann, Hicks, Hitt, Hooker of Mississippi, Hopkins of Illinois, Hopkins of Pennsylvania, Hunter, Ikert, Johnson of North Dakota, Jones, Keim, Kiefer, Lacey, Latimer, Little, Loud, Loudenslager, Magner, Mahon, McCall, McDowell, McEtrick, McLaurin, McRae, Meiklejohn, Money, Moore, Morgan, Morse, Neill, Northway, Ogden, Pence, Perkins, Phillips, Pickler, Powers, Quigg, Randall, Ray, Reed, Reyburn, Richardson of Michigan, Robertson of Louisiana, Robinson of Pennsylvania, Russell of Connecticut, Scranton, Shell, Sibley, Simpson, Smith, Snodgrass, C. W. Stone, W. A. Stone, Storer, Strait, Strong, Talbert of South Carolina, Terry, Thomas, Updegraff, Van Voorhis of New York, Van Voorhis of Ohio, Wadsworth, Walker, Wanger, Waugh, White, Whiting, Wilson of Ohio, Woomey, Wright—130.

NOT VOTING—Adams of Kentucky, Aitken, Apsley, Babcock, Baldwin, Bartlett, Belden, Bingham, Black of Illinois, Blair, Boutelle, Branch, Breckinridge, Brown, Bunn, Burnes, Burrows, Bynum, Caminetti, Childs, Cobb of Missouri, Cockran, Cogswell, Cooper of Florida, Cooper of Indiana, Crain, De Forest, Donovan, Dunn, Dunphy, English of New Jersey, Enloe, Everett, Fletcher, Forman, Funk, Fyan, Gear, Goldzier, Gorman, Graham, Grosvenor, Harter, Hayes, Heard, Heiner of Pennsylvania, Henderson of Illinois, Hendrix, Hooker of New York, Houk, Hudson, Hulick, Hull, Johnson of Indiana, Johnson of Ohio, Kribbs, Lane, Layton, Lefever, Linton, Lucas, Maguire, Marsh, Marshall, Marvin of New York, McAleer, McCleary of Minnesota, McDannold, McKeighan, McNagny, Mercer, Milliken, Moon, Murray, Mutchler, Newlands, O'Neill of Missouri, Payne, Price, Rayner, Reilly, Settle, Sherman, Sickles, Somers, Sorg, Stephenson, Stockdale, Sweet, Tarsney, Tawney, Taylor of Tennessee, Turner of Virginia, Turpin, Wever, Wheeler of Illinois, Wilson of Washington—97.

**The Bond Question.**—At the beginning of the year there were heavy drafts made on the Treasury for gold; and the gold reserve, which had been advanced to \$108,888,432 by the sale of



the second bond issue of \$50,000,000, Nov. 26, 1894, fell to \$52,463,173 on Jan. 28, 1895. On that day the President sent to the Congress a message, in which he said that a crisis had come demanding other legislation than the currency measure proposed in his annual message of the previous month, and urged the issue of bonds, payable in gold, instead of in coin, to replenish the gold reserve and redeem for cancellation the legal-tender notes of the Government:

*To the Senate and House of Representatives:*

In my last annual message I commended to the serious consideration of Congress the condition of our national finances, and in connection with the subject indorsed a plan of currency legislation which at that time seemed to furnish protection against impending danger. This plan has not been approved by the Congress. In the meantime the situation has so changed, and the emergency now appears so threatening, that I deem it my duty to ask at the hands of the legislative branch of the Government such prompt and effective action as will restore confidence in our financial soundness and avert business disaster and universal distress among our people.

Whatever may be the merits of the plan outlined in my annual message as a remedy for ills then existing, and as a safeguard against the depletion of the gold reserve then in the Treasury, I am now convinced that its reception by the Congress and our present advanced stage of financial perplexity necessitate additional or different legislation.

With natural resources unlimited in variety and productive strength, and with a people whose activity and enterprise seek only a fair opportunity to achieve national success and greatness, our progress should not be checked by a false financial policy and a heedless disregard of sound monetary laws, nor should the timidity and fear which they engender stand in the way of our prosperity.

It is hardly disputed that this predicament confronts us to-day. Therefore, no one in any degree responsible for the making and execution of our laws should fail to see a patriotic duty in honestly and sincerely attempting to relieve the situation. Manifestly this effort will not succeed unless it is made untrammelled by the prejudice of partisanship and with a steadfast determination to resist the temptation to accomplish party advantage. We may well remember that if we are threatened with financial difficulties all our people in every station of life are concerned; and surely those who suffer will not receive the promotion of party interests as an excuse for permitting our present troubles to advance to a disastrous conclusion. It is also of the utmost importance that we approach the study of the problems presented as free as possible from the tyranny of preconceived opinions, to the end that in a common danger we may be able to seek with unclouded vision a safe and reasonable protection.

The real trouble which confronts us consists in a lack of confidence, widespread and constantly increasing, in the continuing ability or disposition of the Government to pay its obligations in gold. This lack of confidence grows to some extent out of the palpable and apparent embarrassment attending the efforts of the Government under existing laws to procure gold, and to a greater extent out of the impossibility of either keeping it in the Treasury or canceling obligations by its expenditure after it is obtained.

The only way left open to the Government for procuring gold is by the issue and sale of its bonds. The only bonds that can be so issued were authorized nearly twenty-five years ago, and are not well calculated to meet our present needs. Among other disadvantages, they are made payable in coin, instead of specifically in gold, which, in existing conditions, detracts largely and in an increasing ratio from their desirability as investments. It is by no means certain that bonds of this description can much longer

be disposed of at a price creditable to the financial character of our Government.

The most dangerous and irritating feature of the situation, however, remains to be mentioned. It is found in the means by which the Treasury is despoiled of the gold thus obtained without canceling a single Government obligation and solely for the benefit of those who find profit in shipping it abroad, or whose fears induce them to hoard it at home. We have outstanding about \$500,000,000 of currency notes of the Government for which gold may be demanded, and, curiously enough, the law requires that when presented and, in fact, redeemed and paid in gold, they shall be reissued. Thus the same notes may do duty many times in drawing gold from the Treasury; nor can the process be arrested as long as private parties, for profit or otherwise, see an advantage in repeating the operation. More than \$300,000,000 in these notes have already been redeemed in gold, and notwithstanding such redemption they are all still outstanding.

Since the 17th day of January, 1894, our bonded interest-bearing debt has been increased \$100,000,000 for the purpose of obtaining gold to replenish our coin reserve. Two issues were made amounting to \$50,000,000 each—one in January and the other in November. As a result of the first issue there was realized something more than \$58,000,000 in gold. Between that issue and the succeeding one in November, comprising a period of about ten months, nearly \$103,000,000 in gold were drawn from the Treasury. This made the second issue necessary, and upon that more than \$58,000,000 in gold was again realized. Between the date of this second issue and the present time, covering a period of only about two months, more than \$69,000,000 in gold have been drawn from the Treasury. These large sums of gold were expended without any cancellation of Government obligations or in any permanent way benefiting our people or improving our pecuniary situation.

The financial events of the past year suggest facts and conditions which should certainly arrest attention.

More than \$172,000,000 in gold have been drawn out of the Treasury during the year for the purpose of shipment abroad or hoarding at home.

While nearly \$103,000,000 of this amount was drawn out during the first ten months of the year, a sum aggregating more than two thirds of that amount, being about \$69,000,000, was drawn out during the following two months, thus indicating a marked acceleration of the depleting process with the lapse of time.

The obligations upon which this gold has been drawn from the Treasury are still outstanding and are available for use in repeating the exhausting operation with shorter intervals as our perplexities accumulate.

Conditions are certainly supervening tending to make the bonds which may be issued to replenish our gold less useful for that purpose.

An adequate gold reserve is in all circumstances absolutely essential to the upholding of our public credit and to the maintenance of our high national character.

Our gold reserve has again reached such a stage of diminution as to require its speedy re-enforcement.

The aggravations that must inevitably follow present conditions and methods will certainly lead to misfortune and loss, not only to our national credit and prosperity and to financial enterprise, but to those of our people who seek employment as a means of livelihood, and to those whose only capital is their daily labor.

It will hardly do to say that a simple increase of revenue will cure our troubles. The apprehension now existing and constantly increasing as to our financial ability does not rest upon a calculation of our revenue. The time has passed when the eyes of investors abroad and our people at home were fixed upon the revenues of the Government. Changed



conditions have attracted their attention to the gold of the Government. There need be no fear that we can not pay our current expenses with such money as we have. There is now in the Treasury a comfortable surplus of more than \$63,000,000, but it is not in gold, and therefore does not meet our difficulty.

I can not see that differences of opinion concerning the extent to which silver ought to be coined or used in our currency should interfere with the counsels of those whose duty it is to rectify evils now apparent in our financial situation. They have to consider the question of national credit, and the consequences that will follow from its collapse. Whatever ideas may be insisted upon as to silver or bimetalism, a proper solution of the question now pressing upon us only requires a recognition of gold as well as silver, and a concession of its importance, rightfully or wrongfully acquired, as a basis of national credit, a necessity in the honorable discharge of our obligations payable in gold, and a badge of solvency. I do not understand that the real friends of silver desire a condition that might follow inaction or neglect to appreciate the meaning of the present exigency, if it should result in the entire banishment of gold from our financial and currency arrangements.

Besides the Treasury notes, which certainly should be paid in gold, amounting to nearly \$500,000,000, there will fall due in 1904 \$100,000,000 of bonds issued during the last year, for which we have received gold, and in 1907 nearly 600,000,000 of 4-per-cent. bonds issued in 1877. Shall the payment of these obligations in gold be repudiated? If they are to be paid in such a manner as the preservation of our national honor and national solvency demands, we should not destroy or even imperil our ability to supply ourselves with gold for that purpose.

While I am not unfriendly to silver, and while I desire to see it recognized to such an extent as is consistent with financial safety and the preservation of national honor and credit, I am not willing to see gold entirely banished from our currency and finances. To avert such a consequence I believe thorough and radical remedial legislation should be promptly passed. I therefore beg the Congress to give the subject immediate attention.

In my opinion the Secretary of the Treasury should be authorized to issue bonds of the Government for the purpose of procuring and maintaining a sufficient gold reserve and the redemption and cancellation of the United States legal-tender notes and the Treasury notes issued for the purchase of silver under the law of July 14, 1890. We should be relieved from the humiliating process of issuing bonds to procure gold to be immediately and repeatedly drawn out on these obligations for purposes not related to the benefit of our Government or our people. The principal and interest of these bonds should be payable on their face in gold, because they should be sold only for gold or its representative, and because there would now probably be difficulty in favorably disposing of bonds not containing this stipulation. I suggest that the bonds be issued in denominations of \$20 and \$50 and their multiples and that they bear interest at a rate not exceeding 3 per cent. per annum. I do not see why they should not be payable fifty years from their date. We of the present generation have large amounts to pay if we meet our obligations, and long bonds are most salable. The Secretary of the Treasury might well be permitted, at his discretion, to receive on the sale of bonds the legal-tender and Treasury notes to be retired, and of course when they are thus retired or redeemed in gold they should be canceled.

These bonds under existing laws could be deposited by national banks as security for circulation; and such banks should be allowed to issue circulation up to the face value of these or any other bonds so deposited, except bonds outstanding bearing only 2 per cent. interest, and which sell in the market at less than par. National banks should not be allowed to take out circulating notes of a less denomination than

\$10, and when such as are now outstanding reach the Treasury, except for redemption and retirement, they should be canceled and notes of the denomination of \$10 and upward issued in their stead. Silver certificates of the denomination of \$10 and upward should be replaced by certificates of denominations under \$10.

As a constant means for the maintenance of a reasonable supply of gold in the Treasury, our duties on imports should be paid in gold, allowing all other dues to the Government to be paid in any other form of money.

I believe all the provisions I have suggested should be embodied in our laws if we are to enjoy a complete reinstatement of a sound financial condition. They need not interfere with any currency scheme providing for the increase of the circulating medium through the agency of national or State banks that may commend itself to the Congress, since they can easily be adjusted to such a scheme. Objection has been made to the issuance of interest-bearing obligations for the purpose of retiring the noninterest-bearing legal-tender notes. In point of fact, however, these notes have burdened us with a large load of interest, and it is still accumulating. The aggregate interest on the original issue of bonds, the proceeds of which in gold constituted the reserve for the payment of these notes, amounted to \$70,326,250 on Jan. 1, 1895, and the annual charge for interest on these bonds and those issued for the same purpose during the last year will be \$9,145,000, dating from Jan. 1, 1895.

While the cancellation of these notes would not relieve us from the obligations already incurred on their account, these figures are given by way of suggesting that their existence has not been free from interest charges and that the longer they are outstanding, judging from the experience of the last year, the more expensive they will become.

In conclusion, I desire to frankly confess my reluctance to issuing more bonds in present circumstances and with no better results than have lately followed that course. I can not, however, refrain from adding to an assurance of my anxiety to co-operate with the present Congress in any reasonable measure of relief, an expression of my determination to leave nothing undone which furnishes a hope for improving the situation or checking a suspicion of our disinclination or disability to meet with the strictest honor every national obligation.

GROVER CLEVELAND.

EXECUTIVE MANSION, Jan. 28, 1895.

On the same day Mr. Springer, of Illinois, introduced the following bill designed to carry out the President's recommendations.

A bill to authorize the Secretary of the Treasury to issue bonds to maintain a sufficient gold reserve and to redeem and retire United States notes, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That in order to enable the Secretary of the Treasury to procure and maintain a sufficient gold reserve and to redeem and retire United States legal-tender notes and Treasury notes issued under the act of July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," he is hereby authorized to issue and sell, at not less than par, in gold, except as provided in section 2 of this act, United States registered or coupon bonds, in denominations of \$20 and \$50, and multiples of said sums, respectively, payable fifty years after date in gold coin of the United States of the present weight and fineness, and bearing interest at a rate not exceeding 3 per cent. per annum, payable quarterly in like coin; and such bonds and the interest thereon shall have like qualities, privileges, and exemptions as the bonds issued under the act approved July 14, 1870, entitled "An Act to authorize the refunding of the national debt." Such bonds may be sold and delivered in the United States, or elsewhere, as may be



deemed most advantageous to the interests of the Government.

SEC. 2. That whenever any United States legal-tender notes or Treasury notes shall be redeemed in gold, they shall be canceled and not reissued; and the Secretary of the Treasury is hereby authorized, in his discretion, to receive United States legal-tender notes and Treasury notes issued under the aforesaid act of July 14, 1890, in payment for any of the bonds issued under the preceding section of this act, and the notes so received shall be canceled and not reissued.

SEC. 3. That hereafter national banking associations may take out circulating notes in the manner now provided by law to an amount equal to the par value of the bonds deposited to secure the same; but this provision shall not apply to any bonds now outstanding bearing interest at the rate of 2 per cent. only.

SEC. 4. That hereafter no national bank notes of a less denomination than \$10 shall be issued, and as rapidly as such notes of denominations less than \$10 shall be received into the Treasury, otherwise than for redemption and retirement, they shall be canceled, and an equal amount of notes of like character, but in denominations of \$10 and multiples thereof, shall be issued in their places. All silver certificates now outstanding, in denominations larger than \$10, shall, when received into the Treasury of the United States, be retired and canceled, and silver certificates in denominations less than \$10 shall be issued in their stead.

SEC. 5. That from and after the 1st day of July, 1895, all duties on imports shall be paid in gold coin only, and all taxes, debts, and demands, other than duties on imports, accruing or becoming due to the United States shall be paid in gold and silver coin, Treasury notes, United States notes, silver certificates, or notes of national banks.

SEC. 6. That all laws and parts of laws inconsistent with the provisions of the preceding sections be, and they are hereby, repealed; and a sum sufficient to carry the provisions of this act into effect be, and the same is hereby, appropriated out of any money in the Treasury not otherwise appropriated.

Feb. 1, this measure, which had been referred to the Committee on Banking and Currency, was reported back with this proviso covering a difference of opinion in the committee: "The extraordinary condition to which the President has referred in his message, and the necessity for immediate action in view of the early adjournment of this Congress, have constrained your committee to concur in reporting the bill with the proposed amendments to the House for its consideration, each member reserving to himself the right to file his separate views thereon and have them printed with the report of the committee, and vote on the proposed amendments and other amendments which may be offered in the House and on the final passage of the bill as he may determine."

On Monday, Feb. 4, the following rule, making the measure a special order, was reported from the Committee on Rules and adopted:

*Resolved*, That on Tuesday, the 5th instant, immediately after the call of committees for reports, the House shall resolve itself into Committee of the Whole for the consideration of H. R. 8705; that general debate shall be allowed during that day; that on Wednesday, the 6th, after the call of committees for reports, the House shall again resolve itself into Committee of the Whole for the consideration of said bill, and at the hour of 2 o'clock P. M., unless sooner terminated, general debate shall be closed, and the consideration of said bill shall continue under the five-minute rule, with this modification: It shall be in order, immediately after general debate is closed, to offer an

amendment to any section of the bill, and two substitutes for the whole bill (provided that no more amendments shall be pending at one time than are permitted by the rules of the House), and no more than thirty minutes' debate (fifteen minutes on a side) shall be permitted on any amendment before the vote shall be taken thereon; that on Thursday, the 7th instant, after the call of committees for reports, the House shall again go into Committee of the Whole for the consideration of said bill under the five-minute rule, with the modification mentioned herein, and consideration thereof shall continue until 3.30 P. M. of said day, when the committee shall rise and report said bill to the House, together with any amendments that may have been agreed to, or may be pending, in the committee, when the previous question shall be considered as ordered on said amendments and on the bill to its passage, whereupon, without intervening motion, votes shall be taken on said bill until the same shall have been fully disposed of.

The debate on the subject went over ground frequently traversed, and there were few speeches of interest or ability. Mr. Brosius, of Pennsylvania, put the plea for urgency as follows:

"Mr. Chairman, the mischief works while we wait; the difficulties deepen while we dally with our duty; promptitude is of the essence of our obligation to act, and therefore I believe that any union of minds and voices in this chamber that will bring succor to the country and spare us national disgrace will be an honorable and patriotic alliance.

"That action might be unimpeded by the delays of controversy and the peril of final disagreement, I have sought in my humble way to have the bill as free as possible from causes of division among us, for I have believed it would promote the passage of a measure to limit its scope to the very mischief to be remedied. A bill, short, sharp, and decisive, that goes directly to the purpose in view, without circumlocution, without the baggage of incidental and unnecessary meddling with other and different matters of legislation, will be much more likely to pass this House than one containing a variety of unrelated provisions which multiply the points of controversy and invite contention and disagreement over matters in which one and another sees a service to some special interest.

"There is hope of agreement only in minimizing the grounds of controversy, and hence I have tried to keep out of the bill provisions looking to the reorganization of our financial system, which undertaking is not, in my judgment, suitable to the circumstances of our situation, and can be wisely deferred to a more appropriate season instead of engaging our minds when they are already taxed to the limit of their capacity in finding a way to strengthen the Treasury and insure the solvency of the Government.

"What, then, Mr. Chairman, stands in the way? Are we kept from agreement by an unworthy pride that is ashamed to yield or an equally censurable obstinacy that delights to contend?

"It is not patriotic nor wise to waste time and further embarrass the situation by hypercriticism and captious and carping complaints of the details of the proposed measure as long as it is in substance calculated to answer the end proposed. If it bridges the chasm it ought to pass in one form or another.

"In one of the trying hours of Mr. Lincoln's

experience during the war, when he keenly felt the unkindness of those who carped and caviled at his conduct, when he bent and swayed under the mighty responsibilities of the war, he illustrated the situation in this striking manner. He said: 'If all your property was in gold, and you had put it in the hands of Blondin to carry across Niagara on a rope, would you shake the cable or keep shouting at him, "Stand straighter! Walk faster! Walk slower! Lean north or south!"? No; you would hold your breath and your tongue as well.'

"The administration is trying to keep the gold in the Treasury to save the honor of the United States, and it is unpatriotic to catch at unconsidered trifles to impede the consummation of the undertaking. Or is it mere partisan politics that hinders us? Perish the thought! The representatives of the people must be patriots before they are partisans. Will any member dispute the proposition that in the situation which invites our consideration, with a crisis looming, huge and hideous, in the twilight future, we ought to see nothing but the best interests of the country?"

"The member of this House who in the supreme exigency suffers his vision to be obscured, his judgment to be warped, and his conclusions to be vitiated by prejudice, passion, or partisanship discredits himself in the eyes of his country and will be held to strict accountability by his constituents. There is but one word that can express the inspiring and controlling influence of this hour, and that word is "patriotism." There is but one word that can denote the action which that overruling inspiration commands, and that word is "duty." He who is insensible to the one or disobedient to the other is not a safe custodian of his country's interests, and was misdirected when he was sent to this body.

"I indulge the hope that no member of this House entertains views of public duty which constrain him in determining his action upon this measure to ask who initiated it, but only is it wise legislation? not which side of this Chamber is advocating or opposing it, but only is it calculated to meet the need of the hour and mitigate the afflictions we are suffering by restoring the confidence of our people in the money of the country?"

"I am profoundly moved by the conviction that this is the time and this the occasion (if I may be pardoned for using an illustration a second time in this presence) for us to emulate the generous sentiment expressed by Philip of France in the Crusades, when he said to Richard of England: 'Let the only strife between the lions of England and the lilies of France be which shall carry them farthest into the ranks of the infidels.' So I pray you, let the only strife between the parties represented in this Chamber to day, in the presence of this impending crisis, be which shall carry the banner of honorable, patriotic, and effective relief farthest into the ranks of the opposition."

Mr. Reed, of Maine, made this argument in introducing a substitute for the Springer bill:

"In order to ascertain what remedy we ought to apply to the present condition of things our first duty is to ascertain what is the condition of

things. The United States Government has issued at different times \$346,000,000 of what are known as legal-tender notes, and \$150,000,000 more which are known as Treasury notes of 1890, making in all \$496,000,000 of paper obligations of the Government which the Government may be called upon to pay under our present system of finance.

"For a country like the United States this is a sum not worth talking about from any point of view of the ability of the Government to pay and to pay promptly. Therefore there must have been something done which created any distrust that now exists.

"What was done? The first thing that was done—the main thing that was done—which caused the present condition of affairs, was the passage of financial measures which have resulted in a deficit of \$107,000,000 up to the present date, and which seem to indicate in their operation a further deficiency, whether permanent or temporary. This caused a peculiar condition of things in the United States Treasury. The United States Treasury keeps practically two accounts: First, the account of the United States as a banker, which has issued its notes and announced its readiness to redeem those notes whenever the holders or possessors may demand the same. For a period of sixteen years the United States has been a banker, without question as to its ability to pay. Within the last year doubts have been thrown about that ability. But there is another department of the United States Treasury, which is the department of the United States as a business establishment. That business establishment has been running astern \$107,000,000 up to this time, with more deficits in prospect.

"Unfortunately for the Government those two operations, those two departments of the Government have been mingled together in such fashion that the misfortunes of the business department have been devolved in the popular mind on the banking department. The United States has redeemed, as it has agreed to redeem, thus far every note which has been presented. But unfortunately the exigencies of its business department have compelled it to put out \$107,000,000, more or less, in order to meet the necessities of that business department.

"Now, the business department, instead of borrowing money on its own hook, has taken the money of the banking department and reissued it; and the result is what is known in popular phrase as the "endless chain," whereby the United States has been made the furnisher of gold to the rest of the world, a condition of things never contemplated by our system of finance, a condition of things which never need to have occurred; but it has occurred, and the President of the United States has appealed not merely to his own party associates, who are in a great majority in this House, but to the gentlemen upon the other side for assistance.

"I could have wished that there had been some consideration for the views of gentlemen on the other side, and that we had not been appealed to to forget the tyranny of preconceived opinions when those preconceived opinions were supposed to be our own merely and not the preconceived opinions of others. However, we are



face to face with the situation, and while as a party man I may not be melancholy about the condition of the Democratic party, as a citizen of the United States I am ready at all times to assist the country in which I live. But it must be done according to my opinions and those who think with me—according to our opinions of what is just and right, having reference to its practicability and reasonableness, without bigotry, in good faith and honesty.

"In order, in my judgment, to reach the present crisis, it is not necessary to go into general financial and currency legislation. General financial and currency legislation can not be had in this country at the dictates of any one man. I do not now refer to the Executive in any way whatever when I make that assertion. I am only laying down a general proposition when I say it can not be done at the dictation of any one man. It has got to be done by the consensus of the people of the United States after a full and fair discussion.

"Such a discussion is not liable to be had or even possible on the eve of a session. But perhaps I may be able to dispose of the whole matter by appealing to every man of this audience as to the truth of my statement that, whatever bill passes this House there is no possibility of its going further, and therefore it ceases to be a practical measure. It does seem to me a practical measure could be presented, however, to Congress, one we could be able to vote for without adding to the one question others upon which other gentlemen have difficulties which are not so easy to get over.

"Our situation is this: We were redeeming greenbacks when they were presented. If the revenue was equal to the expenditures whenever a greenback was redeemed it would stay in the Treasury, and this notwithstanding the fact the Secretary is authorized to reissue; for it is not either the authorization nor even the demand of the law that they shall be reissued that causes the trouble. It is the fact that they are reissued. It is the fact that their reissuance causes this continued depletion of the Treasury. Now, I will fortify my own statement by a recurrence to the Treasury figures themselves.

"In March, 1893, the demand notes of the Government which were in the Treasury were \$36,000,000 in amount. To-day the amount is \$124,000,000, nearly \$125,000,000. In other words, we have redeemed \$88,000,000 of the United States demand notes which up to date stay redeemed. We had in gold when this Administration entered into power \$107,000,000. We have borrowed \$117,000,000, which makes \$224,000,000. We have on hand \$42,000,000; showing that we have paid out \$182,000,000. Of this \$105,000,000 has indirectly gone to pay for the deficiency in the revenue, and that leaves \$77,000,000 which ought to have been the amount of our redemption of the greenbacks; but in reality we have redeemed \$88,000,000, and added \$11,000,000 more out of other funds than this greenback redemption fund called upon us to redeem. I say that is not a bad showing in the present unfortunate condition of affairs. It is not a bad showing for the working of the system under this tremendous disadvantage. Now, let us see what is our situation and our future liabilities.

"As I have already stated, we had originally \$496,000,000 of demand notes. We have \$124,000,000 of those notes in the Treasury of the United States. That leaves us as demandable \$372,000,000. We have \$42,000,000 in gold, which leaves the demand for which there is no gold in the Treasury to meet \$332,000,000. In other words, the United States stands face to face with an emergency of \$332,000,000. That is not vast when you think what we have met and conquered in the way of finance. It seems strange that \$332,000,000 should stagger us; and the only reason why it does stagger us is because in the popular mind this drain of \$107,000,000, which was for the United States deficiency, is attributed to an eager rush by the people to have the greenbacks redeemed.

"Now, what is the remedy? Why, the remedy is plainly to separate these two transactions; to let the people of the United States see precisely what is going on and the people of the world see what is going on. When the Government negotiates the next \$100,000,000, which, if rumor be correct, is already negotiated, we shall then only have \$232,000,000 outstanding, with ample authority on the part of the Government to raise every dollar of that. Now, what is the condition in which a favorable state of affairs will exist? It is that condition which we shall have when we keep separate from our banking department our business department. How shall we meet the business in our business department?—because that is partially involved in the problem. We would meet it on our side, perhaps, by proposing to make the revenue equal to the expenditures; but there are difficulties in the way of that just as there are difficulties in the way of this original bill.

"These difficulties in the way of raising revenue arise from a pride, if I can call it pride, in the present advantageous tariff bill. A proposition to raise revenue would be, in a certain sense, a confession, and confession would perhaps be suicide. Then again we are bound in our transactions here to pay some attention to the constituted authorities, and the constituted authorities for the next two years, for this purpose, are the present Secretary of the Treasury and the President of the United States. Now, the Secretary of the Treasury, with a prescience whose accuracy I wish for the sake of a simple world had not been so complete—the present Secretary says that at the end of this year there will be a surplus of \$22,563,023.

"I do not desire in any way to throw doubt upon this calculation. I hope it is correct. At any rate, we are bound to treat it as being so. But the present condition undoubtedly is temporarily—even if the Secretary be right—that of a monthly deficiency.

"Now, that deficiency ought not to run into our gold account. It ought to be separate. It ought to be kept by itself. How will you do that? The remedy is perfectly simple. If the Secretary will not have revenue, and declares that he is face to face with a surplus, we must treat the case upon that basis. Otherwise we arouse party feeling and come to no arrangement on the subject. How shall we do this? It seems to me that we should require the Secretary of the Treasury, as long as this deficiency

continues to exist, even though it exists only temporarily, to issue certificates of indebtedness bearing such rates of interest, not exceeding 3 per cent., as he deems suitable and proper, so as to pay off this deficiency just as fast as it accrues, and leave untouched the greenback redeeming resources of the country.

"Let the people of the United States then see whether those who have greenbacks do not want them, and if they are all returned it may be a guide to the people to know what to do with those greenbacks. If they do not choose at some future time to destroy them; if, when the times become as they have been during the past sixteen years, the people prefer to use them, we owe debts enough to employ them, and perhaps they may be used to redeem these very bonds which produce the gold.

"So, also, when we come to the surplus which Mr. Carlisle thinks is in sight. When we come to that, if we issue certificates of indebtedness for the deficit, certificates running two years—I would not care if the time was even shorter, but say two years—redeemable at the pleasure of the Government, then the surplus can be used to wipe out that deficit, and we shall stand free from that part of our debt.

"In addition to that, these certificates offer an advantage to the country over the present system. Under the present system the deficiency must be met by a long-time gold bond, and when we get ready to purchase those bonds, that is just the time that they will get ready to go up, and we shall pay a pretty penny before we get them back; but if we issue short-time certificates of indebtedness, temporary on their face, we supply the place of these long gold bonds, which will otherwise have to be paid.

"Now, why is not that the solution of our problem without raising vexed questions which we know can not be solved? Why is it not a practical solution of our trouble? Why is it not suitable in every way?"

The substitute proposed by Reed was as follows:

A bill to provide for a temporary deficiency of revenue.

*Be it enacted, etc.,* That to enable the Secretary of the Treasury to provide for and maintain the redemption of United States notes according to the provisions of the act approved Jan. 14, 1875, entitled "An Act to provide for the resumption of specie payments," he is authorized, in addition to the power he now has under said act, from time to time, at his discretion, to issue, sell, and dispose of, at not less than par in coin, either of the description of bonds authorized in said act, or coupon or registered bonds of the United States, to an amount sufficient for the objects herein stated, bearing not to exceed 3 per cent. interest per annum, payable semiannually, and redeemable, at the pleasure of the United States, in coin, after five years from their date, with like qualities, privileges, and exemptions provided in said act for the bonds therein authorized. And the Secretary of the Treasury shall use the proceeds thereof for the purposes herein provided for, and none other.

SEC. 2. That to enable the Secretary to pay the current expenses of the Government so long as the current revenues shall be deficient he is authorized and required from time to time, in his discretion, to issue, sell, and dispose of, at not less than par, such an amount of certificates of indebtedness of the denomination of \$25, \$50, and \$100, or any multiple thereof, as may be needed for that purpose, bearing not to ex-

ceed 3 per cent. interest per annum, payable semiannually, and redeemable at the pleasure of the Government, in coin, after two years from their date, with like qualities, privileges, and exemptions provided in the act approved Jan. 14, 1875. The Secretary may at his discretion sell and dispose of the same for not less than an equal amount of lawful money of the United States, at designated depositories of the United States, and at such post offices as he may select, and the Secretary shall use the proceeds thereof for the purpose provided for in this section, and for none other.

Mr. Swanson, of Virginia, urged the arguments of the Democratic opponents of the measure:

"Let us examine the propositions of the pending bill. Let us divest them of all the misconceptions with which gentlemen who advocate them have sought to envelop them, so that the country may see them in their nakedness. Let the farming, producing, mercantile classes clearly understand what is here proposed and its effects. The first section of the bill provides for the sale of \$500,000,000, of 3-per-cent. bonds payable in gold alone. These bonds are to run for fifty years. They are nontaxable. It means an opportunity for that amount of wealth, possessed by the rich, to escape all city, county, State, and Federal taxation by being invested in these bonds. It means an annual interest charge upon the Treasury of \$15,000,000 in gold. It means a payment of \$750,000,000 in gold as interest on these bonds by the people before they become due. It means, before the bonds are retired, a payment to the holders of \$1,250,000,000 in gold.

"With the present deficiency in the Treasury this additional charge of \$15,000,000 in annual interest would necessitate increased tariff taxes. So it means higher food, clothing, and necessities of life to the people. It means a perpetuation of the national-bank system and no return to State banks for years. It means the complete establishment of the gold basis in this country. It sanctions, for the first time with governmental approval, the making of gold contracts. It will be followed by all the contracts and obligations of the people being made payable in gold. It is useless for you gentlemen who advocate this bill to deny that you intend to make all private obligations ultimately payable in gold. All your arguments tend to that. The Government has power now to sell bonds payable in coin, which means either gold or silver. You say that European capital will have confidence restored in us if we sell bonds payable in gold alone. It will, you say, be proof to them that all money invested in the United States will be payable in gold. This means, if it means anything, the payment of all private obligations ultimately in gold. With about \$16,000,000,000 of private indebtedness and only about \$500,000,000 of gold with which to pay it, it means to the people bankruptcy and a frightful fall in the price of labor, land, and produce with which to acquire the gold. Convinced of this, I can not vote for a gold bond.

"To what purposes is the money derived by the sale of these bonds to be devoted? You would imagine that money obtained by such extraordinary methods and marking so great and far-reaching a departure would be needed for the purposes of national defense or to avert some frightful disaster.



"The second section of this bill provides that the money thus obtained shall be used to redeem the \$500,000,000 of greenbacks and Sherman Treasury notes, which, when redeemed, shall be canceled and destroyed. The money thus obtained shall be used for the purposes of contraction. It shall be used for the purposes of making money searier to the people. When the Republican party had passed legislation providing for the retirement of the greenbacks, it was the Democratic party which passed the present statute which prohibits their cancellation and destruction.

"It was the Democratic party which saved this vast amount of currency to the people. I am unwilling at this time to reverse this policy, unite with the Republican party, and destroy by one act one third of the legal-tender money of this country. I am one of those who believe that, with our increasing population, wealth, business, and commerce, we need an increase and not a contraction of the currency. But the gentlemen who preceded me in advocacy of this bill pretend it will not result in a contraction of the currency, as there is a proviso that these greenbacks and Treasury notes shall only be canceled to the amount of the aggregate of additional national bank notes taken out after the passage of this bill. But this declaration is not true. That provision is simply inserted to deceive this House and the country, and to justify the pretended claim, frequently heard, that this bill does not mean contraction. But I shall expose the falsity of this claim and prove that this bill is adroitly devised not only to destroy the greenbacks and Treasury notes, but also to enable the national banks, when they desire, to suddenly and absolutely retire the currency they now have out.

"Under this bill the national banks can purchase these bonds, issue \$500,000,000 of national bank notes in February, have the Treasury notes and greenbacks canceled and destroyed by this bill, then in March retire the national bank currency issued, and leave the country absolutely divested of greenbacks, Treasury notes, and national bank notes. To do this existing law must be changed. By present statute all the national banks can not retire currency in excess of \$3,000,000 a month. This law was passed to prevent sudden contractions of the currency by national banks.

"The banks had used their power of contraction fearfully and disastrously. This law prevented it. The fifth section of this bill provides for the repeal of this limitation upon national banks in withdrawing currency, and permits them to withdraw their currency without limit. If this bill should become law the national banks would have the power in one day of retiring their entire notes and produce a frightful contraction of the currency. If these banks do not contemplate in the near future retiring and contracting their currency, why do their friends insert in this bill the repeal of the only restriction against their power of retirement and contraction? The safeguard inserted in the second section is absolutely destroyed by the provisions of the fifth section. I see before me and listening to me prominent gentlemen who advocate this bill, and I call upon

you now to deny if these statements and facts are not true, and if this bill does not permit what I have described. It can not be denied. So the intention of the bill is not only to destroy the greenbacks and Treasury notes, but also to make the way easy to retire the national bank notes.

"But the ultimate and covert aims of this bill do not stop here. It is the commencement of the effort to retire and destroy about \$400,000,000 of silver we have in our currency. If this bill passes you will witness a further depreciation in the value of silver. It sanctions gold contracts by the Government. It repudiates our silver dollars in the payment of our obligations. It stamps with disfavor silver dollars as money. If they can not be used by the Government in its payments to the bondholders, it will be said, why should they be used in payments to others, and by others? If this bill should pass and times get worse and harder, as they surely would, the same parties and the same influences which to-day are behind this bill would come and say that 'the trouble was caused by a lack of confidence in our currency, produced by the infusion of \$400,000,000 of silver therein,' and clamor for the retirement and destruction of that. That design can be seen in section 4 of the bill.

"That section provides that the lawful reserves required of national banks on account of their deposits shall be kept in coin, one half of which at least shall be gold. Now, this section, like the entire bill, conceals its ultimate design. To a thoughtless person this section would appear all right, as requiring one half of the reserve to be in gold and one half in silver, thus maintaining the parity of the two. It was intended to leave the House and country under that impression. But it is the very reverse, and will have the contrary effect. It makes it imperative upon the banks to keep their reserve in coin. With the present deposits of the banks it would require the banks to have \$417,000,000 of coin for a lawful reserve. It requires half of this at least should be in gold. It makes no requirement as to silver. The section adroitly leaves it optional with the banks to have any silver, but makes it compulsory that it should be kept in coin. Who can doubt that the banks will keep the reserve in gold?

"The Government having discarded silver and sanctioned gold contracts, the banks will not take it up. So the banks will obtain \$417,000,000 of gold for their reserve. If you gentlemen honestly intend to keep up the parity of gold and silver, why not insert in this bill a clear, honest provision, requiring half of the reserve of banks to be kept in silver. This would give use for \$208,000,000 of silver. It would make it to the interest of the entire banking power to keep this silver at parity with gold. It would be a guarantee that there will be no war on this silver in the future. But this provision will result in accumulating all the gold in this country in the hands of the banks and a few bondholders, and thus unite the moneyed power of this country in its efforts to retire the present silver dollars. The passage of this bill would mean the destruction of both greenbacks, Treasury notes, and silver. It would leave us ultimately nothing as

currency except gold and such money as the national banks saw proper to furnish.

"The national bank notes would be redeemable in gold. Thus we would be absolutely upon a gold basis. Our currency would then be in the perfect condition desired by the influences behind this bill. This bill is a decisive step, taken for the complete establishment of the gold basis. Its result will be to put the entire currency and business and property of this country at the mercy of the bondholder. We will have a public debt of \$1,200,000,000, payable in gold. We have only about \$500,000,000 of gold with which to make payments. Thus the bondholders will be the absolute owners of this gold. For the taxing power of the Government, overriding everything else, must sacrifice the property of the citizens at any price to gather in this gold for the bondholders. National bank notes, also, being based on bonds, our money, our currency, our property, will be absolutely at the dictation of the bondholder.

"Money with us will be cheap or dear, scarce or plentiful, as the interest of the bondholder may dictate. I can and will never consent to the creation of such a condition of affairs. It will result only in further poverty, further distress, among the great toiling and producing masses of our citizens. This bill gives contraction, while the increasing population, business, and commerce of the country demand expansion. This bill creates absolutely a single gold standard, while the country to-day is suffering from a lack of bimetallism. To my mind it can only bring to the country less money, lower prices, greater wretchedness, and poverty. I am delighted to see that over three fourths of the Democrats in this House are opposed to its passage.

"The claim that such a bill as this is needed to protect the gold reserve is all pretense and nonsense. The President has ample authority under existing law to sell bonds to replenish the gold reserve. Under present law he can sell bonds and get gold until he has redeemed the last Treasury note. When once redeemed they will not be reissued, unless to meet current expenses of the Government. The President has ample authority to protect and redeem the greenbacks and Treasury notes, and hence the present distress and depression do not come from any lack of confidence in them or the ability of this Government to meet its obligations. The causes lie much deeper. This bill would be but an increase, an aggravation of existing evils. It would be another step into darkness, which we would have to retrace to reach light. Present low prices for produce and labor, present depression and stagnation in business and enterprise, result from the demonetization of silver and the destroying of half the money of ultimate redemption of the world.

"Since that time each year the world over we have witnessed lower wages, lower prices for produce, land, and property. The problem of existence each year becomes harder and harder to the mass of the people. No one can tell that we have yet reached the bottom of the abyss into which we were plunged. No one can tell that prices have yet reached their bottom, so that society can readily adjust itself and credit and confidence in the solvency and abil-

ity of the producing classes be restored. Two years ago I was in Texas and cotton was selling at 7 cents a pound and everybody thought it had reached its bottom, being lower than ever before. Now it has fallen to 5 cents a pound. No one can say but that it will yet go lower. Land with increasing demand and no increase in supply presents the same spectacle of continual fall in prices. No one can say where falling prices will cease. We have no experience in the past history of mankind like the present to furnish us material upon which to reach a conclusion. Never before in the history of the world has it endeavored to do its business with gold alone. Prior to 1873, since the earliest dawn of civilization both gold and silver were used as money.

"Since 1873 gold alone has been the money of the world. Since that time we have been blindly staggering in the dark, not knowing where this great change would lead us. It is a new experiment in the history of the world, and no one can know how much lower it will reduce wages and prices. We only know that it permits debt to remain the same, while each year lowering labor, produce, and property, with which debt is paid. It seems to me, we have gone far enough in this night of darkness, wretchedness, and distress. We should reverse our steps and not go further, as this bill provides. If we can not safely make the entire return in one day, let us at least turn our faces toward the brightness we left and journey back to it as fast as safety and our circumstances will permit. I, for one, will not be allured by promises nor driven by fears further into this unknown and untried darkness.

"Mr. Chairman, what we need more than all else in our currency is money of ultimate redemption. What we need in our currency is not to make the silver dollar redeemable in gold, but to make silver money of ultimate redemption. We should broaden the foundations upon which we rear the superstructure of our currency. Gold is too narrow a basis upon which to build. The whole theory of this bill is to curtail and contract our currency until it is suited to rest upon a narrow gold basis. My belief is that we should broaden the basis of our currency by making silver money of ultimate redemption, and thence enable us to make larger and more perfect the superstructure we should rear.

"Mr. Chairman, my limited time will not permit me to enter into a discussion of the reforms I think needed in our financial system. As I have previously said, the Carlisle bill was a great and beneficial reform which recommended itself to me strongly. I never entertained much hopes of its passage. It brought too many benefits to the people and carried relief and hope too far to suit some. It was indirectly antagonized by those in this House who now seek the passage of this bill. It gave no aid to those who sought the establishment of the gold basis. They always wanted a measure like the pending bill. Whenever you find all the members of a certain section standing by a bill, regardless of party lines, you may be sure that the bill is a step in the direction of a gold basis.

"Why, these people remind me very much of a Southerner who was once in Central Park,



New York, when he heard the band play. When there was a pause he called out for 'Dixie.' 'Dixie' was promptly played for him. When it was concluded he enthusiastically shouted, 'Give me "Dixie" again!' It was played for him once more. When the band stopped, more enthusiastic than ever, he shouted, 'Give me "Dixie" again!' The leader of the band turned to him and said, 'Old man, I reckon when Gabriel blows his trumpet you will call for "Dixie."' 'Yes,' replied the old man, 'and if he don't play "Dixie" I won't rise either.' So it is with certain gentlemen here. I never see them rise to speak or vote unless in aid of the gold standard. Why, sir, I believe that my friend from New York in front of me, if the angel Gabriel on the day of judgment does not blow with a golden trumpet, will refuse to rise on account of 'a want of confidence in the call and trumpet.'

The vote deciding the fate of the measure was taken Feb. 7, after the Reed substitute had been rejected by a vote of 107 yeas to 189 nays and the elaborate substitute of Mr. Cox, of Tennessee, had been rejected by a vote of 55 yeas to 184 nays. The question was on the engrossment and third reading of the bill; which was defeated by the following vote:

YEAS—Adams of Pennsylvania, Aldrich, Babcock, Baldwin, Barnes, Bartlett, Barwig, Beckner, Beltzhoover, Berry, Bingham, Boutelle, Brickner, Brosius, Bynum, Cadmus, Caminetti, Campbell, Caruth, Causey, Chickering, Clancy, Clarke of Alabama, Cobb of Missouri, Coffin of Maryland, Coombs, Cooper of Florida, Cooper of Indiana, Cornish, Covert, Crain, Dalzell, Daniels, Davey, De Forest, Dingley, Draper, Dunphy, Durbin, English of California, Erdman, Everett, Fielder, Fletcher, Forman, Gardner, Geary, Geissenhainer, Gillett of Massachusetts, Goldzier, Gorman, Gresham, Griffin of Michigan, Griffin of Wisconsin, Grout, Haines, Hall of Minnesota, Hammond, Harmer, Harrison, Haugen, Hayes, Hendrix, Henry, Hicks, Hines, Hooker of New York, Kiefer, Kribbs, Lapham, Lefever, Loekwood, Lynch, Mahon, Marvin of New York, McAleer, McDannold, McGann, McKaig, Meyer, Montgomery, Mutchler, O'Neil of Massachusetts, O'Neill of Missouri, Outhwaite, Page, Paschal, Patterson, Payne, Pearson, Pendleton of West Virginia, Pigott, Powers, Quigg, Randall, Ray, Reed, Reilly, Reyburn, Richards, Ritchie, Russell of Connecticut, Ryan, Schermerhorn, Seranton, Sickles, Sipe, Smith, Somers, Sorg, Sperry, Stevens, C. W. Stone, W. A. Stone, Stone of Kentucky, Storer, Straus, Talbot of Maryland, Tarsney, Traey, Turner of Georgia, Turner of Virginia, Turpin, Updegraff, Van Voorhis of New York, Wadsworth, Wanger, Warner, Washington, Wells, Wilson of West Virginia, Wise, Wolverton, Woomer, Wright—135.

NAYS—Adams of Kentucky, Aitken, Alderson, Alexander, Arnold, Avery, Baker of Kansas, Baker of New Hampshire, Bankhead, Bell of Colorado, Black of Georgia, Blair, Bland, Boatner, Boen, Bower of North Carolina, Bowers of California, Branch, Breckinridge, Bretz, Broderick, Bromwell, Brookshire, Brown, Bryan, Bundy, Cabaniss, Cannon of California, Cannou of Illinois, Childs, Clark of Missouri, Cobb of Alabama, Cockrell, Coffeen of Wyoming, Conn, Cooper of Wisconsin, Cousins, Cox, Crawford, Curtis of Kansas, Davis, De Armond, Denson, Dinsmore, Dockery, Dooliver, Donovan, Doolittle, Ellis of Kentucky, Ellis of Oregon, Enloe, Epes, Fithian, Fyan, Goodnight, Grady, Grosvenor, Grow, Hager, Hainer of Nebraska, Hall of Missouri, Harris, Hartman, Hatch, Heard, Henderson of Illinois, Henderson of Iowa, Henderson of North Carolina, Hepburn, Hermann, Hitt, Holman, Hooker of Mississippi, Hopkins of Illinois, Hopkins of Pennsylvania, Hudson,

Huliek, Hull, Hunter, Hutcheson, Ikert, Izlar, Johnson of North Dakota, Kem, Kyle, Lacey, Lane, Latimer, Lawson, Layton, Lester, Little, Livingston, Loud, Loudenslager, Lucas, Maddox, Maguire, Malory, Marsh, Marshall, McCleary of Minnesota, McCleary of Kentucky, McCulloch, McDowell, McKeighan, McLaurin, McMillin, McNagly, McKae, Meiklejohn, Mercer, Meredith, Money, Moon, Moore, Morgan, Moses, Neill, Newlands, Northway, Ogden, Pendleton of Texas, Perkins, Pickler, Richardson of Michigan, Richardson of Tennessee, Robbins, Robertson of Louisiana, Russell of Georgia, Sayers, Settle, Shell, Sibley, Simpson, Snodgrass, Springer, Stallings, Stephenson, Stockdale, Strait, Strong, Swanson, Talbert of South Carolina, Tate, Tawney, Taylor of Indiana, Taylor of Tennessee, Terry, Thomas, Tyler, Van Voorhis of Ohio, Walker, Waugh, Wheeler of Alabama, Wheeler of Illinois, White, Whiting, Williams of Illinois, Williams of Mississippi, Wilson of Ohio, Woodard—162.

ANSWERED "PRESENT"—Bailey, Edmunds, Jones, Kilgore—4.

NOT VOTING—Abbott, Allen, Apsley, Bartholdt, Belden, Bell of Texas, Bunn, Burnes, Capehart, Catchings, Cockran, Cogswell, Cooper of Texas, Culberson, Curtis of New York, Dunn, English of New Jersey, Funk, Gear, Gillet of New York, Graham, Hare, Harter, Heiner of Pennsylvania, Houk, Johnson of Indiana, Johnson of Ohio, Linton, Magner, Martin of Indiana, McCall, McDearmon, McEttreik, Milliken, Morse, Murray, Pence, Phillips, Price, Rayner, Robinson of Pennsylvania, Rusk, Sherman, Sweet, Tucker, Weadock, Wever, Wilson of Washington—48.

Mr. Springer, of Illinois, moved to reconsider the vote and Mr. Hatch, of Missouri, moved to lay the motion to reconsider on the table. The motion to table was carried by a vote of 135 yeas to 124 nays.

On the next day the President sent to the Congress this message announcing the third sale of bonds:

*To the Congress of the United States:*

Since my recent communication to the Congress, calling attention to our financial condition and suggesting legislation which I deemed essential to our national welfare and credit, the anxiety and apprehension then existing in business circles have continued.

As a precaution, therefore, against the failure of timely legislative aid through congressional action, cautious preparations have been pending to employ to the best possible advantage, in default of better means, such executive authority as may, without additional legislation, be exercised for the purpose of re-enforcing and maintaining in our Treasury an adequate and safe gold reserve.

In the judgment of those especially charged with this responsibility, the business situation is so critical and the legislative situation is so unpromising, with the omission thus far on the part of Congress to beneficially enlarge the powers of the Secretary of the Treasury in the premises, as to enjoin immediate executive action with the facilities now at hand.

Therefore, in pursuance of section 3700 of the Revised Statutes, the details of an arrangement have this day been concluded with parties abundantly able to fulfill their undertaking, whereby bonds of the United States, authorized under the act of July 14, 1875, payable in coin thirty years after their date, with interest at the rate of 4 per cent. per annum, to the amount of a little less than \$62,400,000, are to be issued for the purchase of gold coin, amounting to a sum slightly in excess of \$65,000,000, to be delivered to the Treasury of the United States, which sum, added to the gold now held in our reserve, will so restore such reserve as to make it amount to something more than \$100,000,000. Such a premium is to

be allowed to the Government upon the bonds as to fix the rate of interest upon the amount of gold realized at 3½ per cent. per annum. At least one half of the gold to be obtained is to be supplied from abroad, which is a very important and favorable feature of the transaction.

The privilege is especially reserved to the Government to substitute at par within ten days from this date, in lieu of the 4-per-cent. coin bonds, other bonds in terms payable in gold and bearing only 3 per cent. interest, if the interest of the same should in the meantime be authorized by the Congress.

The arrangement thus completed, which, after careful inquiry, appears in present circumstances and considering all the objects desired to be the best attainable, develops such a difference in the estimation of investors between bonds made payable in coin and those specifically made payable in gold in favor of the latter as is represented by three fourths of a cent in annual interest. In the agreement just concluded the annual saving in interest to the Government, if 3-per-cent. gold bonds should be substituted for 4-per-cent. coin bonds under the privilege reserved, would be \$539,159, amounting in thirty years, or at the maturity of the coin bonds, to \$16,174,770.

Of course there never should be a doubt in any quarter as to the redemption in gold of the bonds of the Government which are made payable in coin. Therefore, the discrimination, in the judgment of investors, between our bond obligations payable in coin and those specifically made payable in gold is very significant. It is hardly necessary to suggest that, whatever may be our views on the subject, the sentiments or preferences of those with whom we must negotiate in disposing of our bonds for gold are not subject to our dictation.

I have only to add that in my opinion the transaction herein detailed for the information of the Congress promises better results than the efforts previously made in the direction of effectively adding to our gold reserve through the sale of bonds; and I believe it will tend, as far as such action can in present circumstances, to meet the determination expressed in the law repealing the silver-purchasing clause of the act of July 14, 1890, and that, in the language of such repealing act, the arrangement made will aid our efforts to "insure the maintenance of the parity in value of the coins of the two metals and the equal power of every dollar at all times in the markets and in the payment of debts."

GROVER CLEVELAND.

EXECUTIVE MANSION, Feb. 8, 1895.

On Feb. 13 the Committee of Ways and Means made a report to the House which contained the contract with the bond syndicate:

This agreement entered into this 8th day of February, 1895, between the Secretary of the Treasury of the United States, of the first part, and Messrs. August Belmont & Co., of New York, on behalf of Messrs. N. M. Rothschild & Sons, of London, England, and themselves, and Messrs. J. P. Morgan & Co., of New York, on behalf of Messrs. J. S. Morgan & Co., of London, and themselves, parties of the second part,

Witnesseth: Whereas it is provided by the Revised Statutes of the United States (section 3700) that the Secretary of the Treasury may purchase coin with any of the bonds or notes of the United States authorized by law, at such rates and upon such terms as he may deem most advantageous to the public interests; and the Secretary of the Treasury now deems that an emergency exists in which the public interests require that, as hereinafter provided, coin shall be purchased with the bonds of the United States, of the description hereinafter mentioned, authorized to be issued under the act entitled "An Act to provide for the resumption of specie payments," approved Jan. 14, 1875, being bonds of the United States described

in an act of Congress approved July 14, 1870, entitled "An Act to authorize the refunding of the national debt."

Now, therefore, the said parties of the second part hereby agree to sell and deliver to the United States 3,500,000 ounces of standard gold coin of the United States, at the rate of \$17.80441 per ounce, payable in United States 4-per-cent. thirty-year coupon or registered bonds, said bonds to be dated Feb. 1, 1895, and payable at the pleasure of the United States after thirty years from date, issued under the acts of Congress of July 14, 1870, Jan. 20, 1871, and Jan. 14, 1875, bearing interest at the rate of 4 per cent. per annum, payable quarterly.

First. Such purchase and sale of gold coin being made on the following conditions:

1. At least one half of all coin deliverable hereinunder shall be obtained in and shipped from Europe, but the shipments shall not be required to exceed 300,000 ounces per month, unless the parties of the second part shall consent thereto.

2. All deliveries shall be made at any of the sub-treasuries or at any other legal depository of the United States.

3. All gold coins delivered shall be received on the basis of 25.8 grains of standard gold per dollar, if within limit of tolerance.

4. Bonds delivered under this contract are to be delivered free of accrued interest, which is to be assumed and paid by the parties of the second part at the time of their delivery to them.

Second. Should the Secretary of the Treasury desire to offer to sell any bonds of the United States on or before the 1st day of October, 1895, he shall first offer the same to the parties of the second part; but thereafter he shall be free from every such obligation to the parties of the second part.

Third. The Secretary of the Treasury hereby reserves the right, within ten days from the date hereof, in case he shall receive authority from Congress therefor, to substitute any bonds of the United States, bearing 3 per cent. interest, of which the principal and interest shall be specifically payable in United States gold coin of the present weight and fineness for the bonds herein alluded to; such 3-per-cent. bonds to be accepted by the parties of the second part at par, i. e., at \$18.60465 per ounce of standard gold.

Fourth. No bonds shall be delivered to the parties of the second part, or either of them, except in payment for coin from time to time received hereunder; whereupon the Secretary of the Treasury of the United States shall and will deliver the bonds as herein provided, at such places as shall be designated by the parties of the second part. Any expense of delivery out of the United States shall be assumed and paid by the parties of the second part.

Fifth. In consideration of the purchase of such coin, the parties of the second part, and their associates hereunder, assume and will bear all the expense and inevitable loss of bringing gold from Europe hereunder; and, as far as lies in their power, will exert all financial influence and will make all legitimate efforts to protect the Treasury of the United States against the withdrawals of gold pending the complete performance of this contract.

In witness whereof the parties hereto have hereunto set their hands in five parts this 8th day of February, 1895.

J. G. CARLISLE,  
*Secretary of the Treasury.*

AUGUST BELMONT & Co.,  
*On behalf of Messrs. N. M. Rothschild & Sons, London, and themselves.*

J. P. MORGAN & Co.,  
*On behalf of Messrs. J. S. Morgan & Co., London, and themselves.*

Attest:

W. E. CURTIS.  
FRANCIS LYNDE STETSON.



The report recommended that the suggestion of the President in favor of bonds payable "in gold" instead of "in coin" be adopted and the following joint resolution was submitted:

A joint resolution (H. Res. 275) authorizing the issue of \$65,116,275 of gold 3-per-cent bonds.

*Resolved, etc.,* That the Secretary of the Treasury be, and he is hereby, authorized to issue and dispose of at not less than par in gold coin, bonds of the United States, with the qualities, privileges, and exemptions of bonds issued under the act approved July 14, 1870, entitled "An Act authorizing the refunding of the national debt," to an amount not exceeding \$65,116,275, bearing interest at a rate not exceeding 3 per cent. per annum, principal and interest payable in gold coin of the present standard of weight and fineness, said bonds to be made payable not more than thirty years after date: *Provided, however,* That no part of the proceeds of the sale of such bonds nor of the notes redeemed with such proceeds shall be available for the payment of the current expenses of the Government.

Mr. Wilson, of West Virginia, led in the debate in behalf of the resolution. He said:

"Mr. Speaker, it is important that in the beginning of this discussion the House should clearly understand the single issue presented in the resolution reported from the Committee on Ways and Means. Unless the debate can be held strictly to that issue and kept free from the larger and perplexing questions that naturally beset every financial discussion in this House, it may be impossible for the members to vote intelligently on the issue presented.

"The question is simply this: An emergency has arisen which, in the opinion of the Secretary of the Treasury, has made it incumbent on him to exercise the authority conferred upon him by law to purchase gold in order to re-enforce and maintain the traditional and legal gold reserve in the Treasury. He has exercised that authority through a contract made with certain responsible parties, under which he has purchased from them 3,500,000 ounces of gold of standard United States coin, for which he is to issue to them 4-per-cent. thirty-year coin bonds of the United States at such rate as to make the premium upon the bonds about  $4\frac{1}{2}$  per cent., and the right is reserved in the contract that should Congress authorize him to do so he may substitute for the bonds of the contract 3-per-cent. bonds at par specifically payable, principal and interest, in gold. The question is, will the House give him the authority to substitute such bonds for those he may issue under existing law?

"Now, Mr. Speaker, it is important, perhaps, that in laying the foundation for this discussion I should call the attention of the House to the emergency in the Treasury which has compelled the Secretary to make this contract.

"Any one who examines the Treasury statement this morning will find that so far as paying public expenditures is concerned the Treasury is in a very easy condition. There is an available cash balance of over \$141,000,000, and there is in the hands of the disbursing officers, which is really in the hands of the Treasury—for the money in the hands of the disbursing officers is but the till money of the Treasury—there is in the hands of disbursing officers \$24,000,000 available for current payments. So that

this morning's report shows an available cash balance of over \$165,000,000. Compare that condition with the condition of the Treasury time and again in recent years, when there was no excitement or apprehension in the public mind, and it will be found that so far as its assets are concerned it is in a very easy condition.

"I have here a statement of the condition of the Treasury on the 31st day of May, 1892. I find on that day an available cash balance, including the gold reserve, of only \$126,000,000, whereas we have to-day \$141,428,000. There was then in the hands of disbursing officers only \$3,739,000, whereas we have to-day in their hands \$24,094,000, making an available cash balance in the Treasury to-day of \$165,000,000, as against \$129,000,000 on the 31st day of May, 1892.

"I might refer to other dates in the past few years when the Treasury was in much greater stress. This is, however, sufficient to satisfy the House, and ought to be sufficient to satisfy any man in the country, that there is no emergency so far as the Treasury itself is concerned. But when I come to examine this morning's statement of what is called the gold reserve in the Treasury, I find it to be only \$42,217,000. The Treasury as a bank of issue is in distress; the Treasury as a bank of issue has been for a year or more in distress, and because of its distress as a bank of issue it has been compelled to do that which any other safe and sound bank would do under like circumstances—that is, go out into the market to replenish the reserve which it keeps for the purpose of redeeming its current notes.

"Now, the condition of the gold reserve or the amount of that gold reserve has from time to time varied in the history of our fiscal and banking operations.

"So perfect was the confidence of the country when the Treasury resumed specie payments in 1879 that between the 1st day of January, 1879, and the 1st day of November there were presented for redemption less than \$12,000,000 of the notes of the Government; and during the entire twelve months that followed, from Nov. 1, 1879, to Nov. 1, 1880, there were presented for redemption under the resumption law but a little over \$700,000 of the notes of the United States: and during all that time, instead of gold being drawn out of the Treasury, there was a steady flow of gold into the Treasury under the inevitable operation of that law of trade that where paper is known to be as good as gold business men always insist on having the paper instead of the gold.

"There have been times, as I have said, when this gold reserve ran down. A very critical time came in the panic of 1890, when, according to Secretary Windom, in the speech which he made in the city of New York the night he died, there was during the previous November (November, 1890) a run on the gold reserve to the amount of \$24,000,000. I may state also that he called attention in his annual report of 1890 to the fact that during the crisis of the panic of 1890 the Treasury was virtually reduced, so far as available cash assets for the payment of its debts were concerned, to the \$54,000,000 of the banking trust fund, which,

under the operation of the Sherman law of the previous July, had been passed to the cash of the Treasury.

"It thus being by law, Mr. Speaker, and by the policy of the Treasury Department ever since the resumption of specie payments began, the recognized safe and sound practice to maintain in the Treasury of the United States at least \$100,000,000 of gold, or a sufficient amount of gold to maintain the redemption of the obligations of the Government that are redeemable in gold, it has three times within the last thirteen months become necessary for the Treasury of the United States to go into the market and purchase gold, as any other banker would have to do, to maintain its reserve. Twice in twelve months it has issued and sold in this country \$50,000,000 of 5-per-cent. coin obligations of the Government, getting into the Treasury for them something over \$117,000,000. But that experiment, as every one can now see, was only a makeshift, and a very brief and futile makeshift in itself.

"The gold acquired last January was taken out of the Treasury before November. The gold bought last November has been taken out of the Treasury in two months, so that any one can see that these previous bond issues have simply resulted in exchanging our gold for our own bonds. Under these circumstances it became necessary for the Secretary of the Treasury, in order to maintain the gold reserve at the sum required by law, in order to maintain a ready and instantaneous redemption of the legal-tender-note obligations of the Government, in order to carry out the pledge contained in the Sherman law and in the law that repealed the Sherman law, to maintain at a parity all the coin circulation of this country, I say it became necessary for the Secretary of the Treasury to seek some other supply of gold than that he could obtain in this country. Under these circumstances Secretary Carlisle has done just what Secretary Sherman did, time and again, when he was refunding the public debt; just what he did when he was gathering the gold to make up this reserve in the Treasury; he has sought to purchase gold from other markets than our own.

"Now, Mr. Speaker, there is one point, perhaps, which I can state appropriately here, though not directly in the line of my remarks. I have said that Secretary Sherman kept a gold reserve of 40 per cent., and declared in successive reports that he believed 40 per cent. was the necessary and safe reserve. When that \$100,000,000 was set apart; when the \$100,000,000, by what seemed to be the instruction of Congress in 1882 was set apart, it was a gold reserve fund for the redemption of the greenbacks outstanding, \$346,000,000, and for the support of \$200,000,000 or more of standard silver dollars then in circulation.

"But to-day \$100,000,000 gold in the Treasury would be a reserve fund, first, for the redemption of \$500,000,000 of outstanding legal-tender notes of the Government; then, of \$500,000,000 outstanding overvalued silver coins; and in addition to that, under the operation of the present national banking law, of all the notes of all the national banks of the country. If 40 per

cent. was a proper and sufficient banking reserve in 1879 and 1880, no man can complain that, with these added charges and these additions to the redeemable notes of the Government, \$100,000,000 is now more than a very modest reserve.

"There is a contract made under which gold to-day is being put into the subtreasuries, a contract under which gold is to-day being loaded on shipboard to come to this country, a contract which is complete in itself and can not be set aside, because made under ample authority of existing law. The only question is whether we shall exercise our option to substitute for a thirty-year 4-per-cent. coin bond a thirty-year, or less, 3-per-cent. gold bond. And the effect of that is simply this: That as every coin contract made in this country since the resumption of specie payments is in truth a gold contract, we are saving half a million dollars a year without any additional burden or liability on the Government.

"Mr. Speaker, I repeat that this is simply a question of saving a half million of dollars a year in interest to the people of the United States. The gold dollar has been the standard of payment in this country by operation of law for twenty-five years. There is not a contract made by a member of Congress for the payment of money, there is not a contract in this country to-day, where the money is not actually specified, that is not a gold contract. Gold is the standard—the legal standard—by which all contracts are paid in this country, whether the payment be in gold or not, and gentlemen constantly confuse in their discussions on this floor a very important distinction between the standard of payment and the currency of payment."

Mr. Hopkins, of Illinois, led in opposition to the measure. He said:

"Mr. Speaker, the gentleman from West Virginia who has just addressed the House in favor of this proposition that is pending under the special rule adopted to-day devoted considerable time in justification of the Administration in issuing bonds and replenishing the Treasury thereby. I shall take no time in attempting to answer him on that proposition. That, as I understand it, is not the question presented to the House to pass upon.

"We have been informed by the President of the United States, in a special message to Congress which was read here a few days ago, that a contract has been already made for the issuance of bonds; and the question submitted to us is not whether a new loan shall be negotiated and new bonds issued, but whether this Congress will authorize the President to change the policy of the Government and issue a gold bond.

"I am opposed to this resolution because I am opposed to this Government at this late day in our financial transactions changing its policy with reference to the issuance of bonds; and in view of my opposition I desire the attention of the House for a brief period only to give some of the reasons that impel me to hold that position.

"During the long period the Republican party controlled this country, commencing, as it did, in the early days of secession, during all the dark and stormy period of war and up to a few years ago, it was enabled to enact laws and adopt



measures to replenish the Treasury and furnish the necessary means to pay the expenses of the Government without a resort to the extraordinary methods that have been adopted by President Cleveland and his Secretary of the Treasury in the contract that is before us to-day.

"For more than thirty-five years the settled policy of this Government has been to issue our Government bonds payable in coin. The bonds that have been heretofore issued are not payable in gold or silver, or greenbacks, but are payable in coin. Now, the gentleman who has just addressed the House says that the established construction of those bonds is that 'coin' means 'gold,' and that it is just as well to put the word 'gold' in there as it is to put in the word 'coin.' If that be true, and President Cleveland and his Secretary of the Treasury understood that when they were negotiating this loan of \$65,000,000 with this syndicate, why did they not call the attention of the syndicate to this fact and let them understand that the Government would not deviate from its settled policy, but that the bonds would be paid in gold, as the gentleman says.

"It seems to me that the time to urge this argument is not here upon the members of the House and Senate and the country, but was with these foreign capitalists when the negotiation for the bonds was pending. They should have been informed that the Government of the United States has a settled policy on this bond question, and that the people of this country have never repudiated their obligations.

"I desire, Mr. Speaker, to call the attention of members of this House to the fact that the Republican party in negotiating loans reduced rates of interest year after year during the whole history of bond issues. When Judge Folger, of New York, was the Secretary of the Treasury in 1882 he extended \$300,000,000 of our obligations for 3 per cent. on a coin bond at a time when the condition of our country was not as good as it is to-day, at a time when we did not have as vast industries, as great wealth, as we have stored away in the vaults of private individuals and corporations and in the great banks of the country. That vast sum of \$300,000,000 was negotiated, not with a foreign syndicate, not by a private contract with the law partner of the President as legal adviser of the syndicate making the loan, but it was negotiated in the open sunlight, and with the American people, at a rate of only 3 per cent. interest.

"Mr. Speaker, I am opposed to this change in the condition of the bonds because, in my judgment, it will destroy the credit of the United States. The President, in his message to Congress, has said that by adopting this resolution and approving of this gold contract more than \$16,000,000 will be saved to the Government in thirty years that the bonds are stipulated to run. I say, Mr. Speaker, in my humble judgment, instead of being a saving to the Government of the United States, that in the years to come it would cost more than \$100,000,000 to change the character of our Government obligations.

"This country is in many respects like an individual engaged in business, young, energetic, and aggressive. Such a business man must be a debtor, and must have any number of creditors. If he is a good business man he issues the same

kind of an obligation to all of his creditors, and simply issues an evidence of indebtedness to all the people from whom he borrows money or with whom he deals or enters into obligations. But, sir, if this business man should happen on a fatal day to walk into a broker's shop and ask for a loan and should agree to give a mortgage upon his property as security, that moment his credit would be destroyed. No other creditor would allow him money or credit without his giving as good security as the broker exacted, and the creditors that already existed, instead of extending their obligations and giving him time, would insist upon the payment of their money, and the result would be that by the change of his policy the prosperous business man would be made a bankrupt.

"Now, the same thing would occur to the Government of the United States. No new loan could be made in other than gold bonds, while the holders of the coin bonds now out would insist that their bonds must be changed to gold ones. Under the policy that we have adopted the holders of these coin bonds are directly interested in maintaining the integrity of our financial system. They know that while the coin bonds have always been paid in gold under Republican administrations and under the present Administration, yet that there is still a strong party in this country which believes that those obligations could be paid in silver and the letter of the bonds be kept. Hence, the holders of the Government coin bonds are interested in maintaining the parity of the two metals. They are interested in seeing that the money of the Government—greenbacks, silver, and gold—shall be of like value.

"But, sir, if you should adopt the recommendations of the President in this message, and give him the power of issuing a gold bond, you would destroy this principle that operates to control the bondholder to-day and you would make him a bear upon the market. The bondholder whose bond reads 'payable in gold' is directly interested in driving this Government upon a silver basis.

"Why do I say that? Because if he can drive gold to a premium and drive this Government upon a silver basis he enhances the value of the bond that is payable in gold. The moment that this \$62,000,000 mentioned in the President's message were issued in gold bonds you would have August Belmont & Co. and J. S. Morgan & Co. and the Rothschilds and their financial agents in London directly interested in looting the Treasury of the United States of its gold, in destroying the financial stability of our Government, and in driving us upon a silver basis, because they thereby could double the value of their bonds.

"What a remarkable attitude the President and his Secretary of the Treasury are in! They are stating to the public that this loan is to replenish the Treasury so as to maintain the parity of the metals, gold and silver, and to do this are trying to induce Congress to authorize them to issue a gold bond.

"It seems to me, Mr. Speaker, that these considerations are sufficient to show that the paltry sum of \$16,000,000 that has been suggested in the President's message ought not to have any

weight with the members of this House in determining their vote upon this question. Certainly it ought not to have any weight with the Republican members of this House, when they know from the earliest history of the Republican party we have had but one policy upon this question, and that policy has carried this country on in a course of prosperity and financial and industrial success that has been the marvel of the world.

"Now, Mr. Speaker, I have suggested these few considerations in a general way for the reason of my opposition to this measure. When we come to consider the character of the contract that has been entered into by the Secretary of the Treasury, we find reasons that are too numerous to mention why we should not give it our sanction by an affirmative vote in this House. Why, Mr. Speaker, it is one of the most remarkable contracts that was ever entered into by this Government with any private corporation, either foreign or domestic. What is it? It is a contract, in the first place, that has been made in private. Heretofore the obligations of the Government had been entered into in the open market, with the entire American public taken into the confidence of the Administration. Even the loans that have been previously made by this Administration have been of that character.

"The gentleman from West Virginia has stated that \$117,000,000 has been placed in the Treasury of the United States by the two loans that have been made within less than a year by this Administration. Those loans were not made in secret with a foreign syndicate. They were made with the American people in the light of day, with every American citizen having the privilege of sending his bid to the Treasury of the United States and adding his sum of money to replenish the Treasury of the United States. Mr. Speaker, what has been the result of this policy? The result is that loans have been made for less than 3 per cent. on ten-year bonds; for less than 3 per cent. on coin ten-year bonds; and here we have a contract entered into secretly between a banking concern in New York and one in London, not for a ten-year bond, not for a fifteen-year bond, but for a thirty-year bond, and one that may, under its terms, run for a hundred years; a bond, Mr. Speaker, that requires the Government of the United States to pay  $3\frac{3}{4}$  per cent. interest, and that interest is to be paid quarterly.

"On the very day that this contract was signed, on the very day that the President of the United States sent his message to Congress, holding up this bribe of \$16,000,000 to the House and the Senate for their approval, like bonds were selling in the open market, with only twelve years to run, at 110 $\frac{1}{2}$ . This syndicate bought them at 104 $\frac{1}{2}$ , payable thirty years after their date.

"Mr. Carlyle admitted, when he was before the Committee on Ways and Means, that on the same basis, with thirty years to run, the market value of these bonds at the time when he made this contract with this foreign syndicate was 119 $\frac{3}{4}$ . In other words, the President and his Secretary sold these bonds for \$9,500,000, in round numbers, less than they were selling for in the open market. Then he gave a rate of interest on the bonds higher than any civilized

country in the world is paying to-day for its new obligations. Even bankrupt Egypt has negotiated her loans for less than the figures that the President and his Secretary have given to this syndicate of brokers. The richest, the grandest, and the proudest country in the world under the rule of Democracy has been reduced to this low estate.

"They have given a higher rate of interest than little Norway, Belgium, France, or England pay on their obligations. They have given a higher rate of interest than the British provinces are compelled to pay; and yet they come in here, after having negotiated this secret loan, and ask the American Congress to confirm them in this contract with these concessions to Belmont & Co., of New York, and Rothschild & Co., of London. When President Cleveland penned that message and sent it to Congress it was not for patriotic, but political purposes.

"He wanted to throw the responsibility upon Congress of approving an indefensible contract with this syndicate that was represented in the negotiations by his former law partner.

"Now, let us see what this syndicate will make by this contract, negotiated in the manner I have indicated. They make \$9,500,000, in round numbers, when the contract is signed. The President says they will make over \$16,000,000 at the expiration of the period the bonds run."

On Feb. 14 the motion for the engrossment and third reading of the joint resolution was defeated by the following vote:

YEAS—Adams of Pennsylvania, Aldrich, Apsley, Babcock, Baldwin, Barnes, Bartholdt, Barwig, Beckner, Beltzhoover, Berry, Breckinridge, Brickner, Brosius, Bynum, Cadmus, Campbell, Caruth, Catehings, Causey, Chickering, Clancy, Clarke of Alabama, Cobb of Missouri, Coombs, Cooper of Florida, Cooper of Indiana, Cornish, Covert, Crain, Curtis of New York, Daniels, Davey, De Forest, Dingley, Draper, Dunn, Durborow, English of California, Erdman, Everett, Fielder, Forman, Geary, Geissenhainer, Gillet of New York, Gillett of Massachusetts, Goldzier, Gorman, Graham, Gresham, Griffin of Michigan, Grout, Haines, Hall of Minnesota, Hammond, Harrison, Hayes, Hendrix, Henry, Kribbs, Lapham, Lefever, Lockwood, Lyneh, Martin of Indiana, Marvin of New York, McCreary of Kentucky, McGann, McKaig, Meyer, Montgomery, Morse, Mutchler, O'Neil of Massachusetts, O'Neill of Missouri, Page, Pasehal, Patterson, Payne, Pearson, Pendleton of West Virginia, Pigott, Powers, Priece, Quigg, Ray, Reed, Reilly, Reyburn, Richards, Robinson of Pennsylvania, Russell of Connecticut, Ryan, Sehermerhorn, Siekles, Sorg, Sperry, Springer, Stevens, C. W. Stone, W. A. Stone, Stone of Kentucky, Storer, Straus, Tarsney, Traeey, Turner of Georgia, Turpin, Updegraff, Wadsworth, Wanger, Warner, Washington, Wells, Wilson of West Virginia, Wise, Wolverton, Woomer, Wright—120.

NAYS—Adams of Kentucky, Aitken, Alderson, Alexander, Allen, Arnold, Avery, Bailey, Baker of Kansas, Baker of New Hampshire, Bankhead, Bell of Colorado, Bell of Texas, Black, Blair, Bland, Boatner, Boen, Bowers of California, Bretz, Broderick, Bromwell, Brookshire, Brown, Bryan, Bundy, Bunn, Caminetti, Cannon of California, Cannon of Illinois, Capehart, Clark of Missouri, Cobb of Alabama, Cockrell, Coffeen of Wyoming, Coffin of Maryland, Cooper of Wisconsin, Cox, Crawford, Curtis of Kansas, Davis, De Armond, Denson, Dinsmore, Doekery, Dolliver, Donovan, Doolittle, Edmunds, Ellis of Kentucky, Ellis of Oregon, Enloe, Epes,



Fletcher, Funk, Fyan, Goodnight, Grady, Griffin of Wisconsin, Grosvenor, Grow, Hager, Hainer, Hall of Missouri, Hare, Harris, Hartman, Hatch, Haugen, Heard, Henderson of Illinois, Henderson of Iowa, Hepburn, Hermann, Hitt, Hooker of Mississippi, Hopkins of Illinois, Hopkins of Pennsylvania, Hudson, Hulick, Hull, Hunter, Hutcheson, Ikirt, Izlar, Johnson of North Dakota, Kem, Kiefer, Kyle, Lacey, Lane, Latimer, Lawson, Layton, Lester, Lintou, Little, Livingston, Loud, Loudenslager, Lucas, Maddox, Maguire, Mahon, Mallory, Marsh, McCleary of Minnesota, McCulloch, McDearmon, McKeighan, McLaurin, McMillin, McNaghy, McRae, Meiklejohn, Mercer, Meredith, Money, Moore, Morgan, Moses, Neill, Northway, Ogden, Pence, Peudleton of Texas, Perkins, Pickler, Randall, Richardson of Michigan, Richardson of Tennessee, Ritchie, Robbins, Robertson of Louisiana, Russell of Georgia, Sayers, Settle, Shell, Sibley, Simpson, Smith, Snodgrass, Stallings, Stephenson, Stockdale, Strait, Strong, Swanson, Talbert of South Carolina, Tate, Tawney, Taylor of Indiana, Terry, Thomas, Tyler, Van Voorhis of New York, Van Voorhis of Ohio, Walker, Waugh, Weedock, Wheeler of Alabama, Wheeler of Illinois, Whiting, Williams of Illinois, Williams of Mississippi, Wilson of Ohio, Wilson of Washington—167.

ANSWERED "PRESENT"—Henderson of North Carolina, Kilgore—2.

NOT VOTING—Abbott, Bartlett, Belden, Bingham, Boutelle, Bowers of North Carolina, Branch, Burnes, Cabaniss, Childs, Cockran, Cogswell, Conn, Cooper of Texas, Cousins, Culberson, Dalzell, Dunphy, English of New Jersey, Fithian, Gardner, Gear, Harner, Harter, Heiner, Hicks, Hines, Holman, Hooker of New York, Houk, Johnson of Indiana, Johnson of Ohio, Jones, Magner, Marshall, McAleer, McCall, McDannold, McDowell, McEttrick, Milliken, Moon, Murray, Newlands, Outhwaite, Phillips, Rayner, Rusk, Scranton, Sherman, Sipe, Somers, Sweet, Talbot of Maryland, Taylor of Tennessee, Tucker, Turner of Virginia, Wever, White, Woodard—60.

Mr. Bland, of Missouri, moved to reconsider the vote, and then moved to lay the motion to reconsider on the table. The motion to table was carried, and the joint resolution put beyond resurrection.

**Silver Coinage.**—Jan. 23, 1895, Mr. Jones, of Arkansas, introduced in the Senate a bill "providing for the issue of bonds, the coinage of silver, and other purposes," which was referred to the Committee on Finance, and reported with amendments Feb. 12. The new measure was entitled "a bill providing for the unrestricted coinage of silver, and for other purposes"; and was as follows:

That from and after the passage of this act the Secretary of the Treasury is hereby authorized and directed to receive at any United States mint, from any citizen of the United States, silver bullion of standard fineness, and coin the same into silver dollars of 412½ grains each. The seigniorage on the said bullion shall belong to the United States, and shall be the difference between the coinage value thereof and the market price of the bullion in New York on the day the deposit is made, and all expenditures for coinage done under the provisions of this act shall be paid out of said seigniorage; and the Secretary of the Treasury shall deliver to the depositors of such bullion standard silver dollars equal in amount to the price thereof as aforesaid; and whenever the said coins herein provided for shall be received into the Treasury, certificates may be issued thereon, in the manner now provided by law.

The advocates of the measure made a strong effort in its behalf, and after a great deal of skirmishing, it was taken up for consideration Feb. 18, by the following vote:

YEAS—Allen, Bate, Berry, Blackburn, Butler, Call, Cameron, Clark, Daniel, Dubois, Mansbrough, Harris, Hinton, Jones of Arkansas, Jones of Nevada, Kyle, McLaurin, Mantle, Morgan, Peffer, Perkins, Pettigrew, Pugh, Squire, Stewart, Teller, Turpie, Voorhees, Walsh, White—30.

NAYS—Allison, Brice, Camden, Carey, Chandler, Davis, Dixon, Frye, Gallinger, George, Gibson, Gray, Hale, Hawley, Hill, Hoar, McMillan, McPherson, Manderson, Mitchell of Wisconsin, Palmer, Pasco, Platt, Proctor, Quay, Ransom, Vilas—27.

NOT VOTING—Aldrich, Blanchard, Burrows, Caffery, Cockrell, Coke, Cullom, Dolph, Faulkner, Gordon, Gorman, Higgins, Irby, Lindsay, Lodge, Martin, Mills, Mitchell of Oregon, Morrill, Murphy, Power, Pritchard, Roach, Sherman, Shoup, Smith, Vest, Washburn, Wilson, Wolcott—30.

On the same motion the next day the vote was yeas 36, nays 27; but the session, though continued until 9 o'clock at night, brought about no result, as the opponents of the measure resorted to filibustering tactics. Feb. 20, Mr. Jones gave up all idea of passing the bill, and laid it aside to make way for the appropriation bills.

**Japanese Matters.**—The President transmitted to the Senate Dec. 6, 1894, a new treaty with Japan negotiated on Nov. 22, and the Senate approved of it with the proviso for its abrogation on one year's notice by either party.

The preamble declares that, in order to preserve the good understanding and increase the intercourse between the countries, a revision of the treaties hitherto adopted should be made on the basis of the principles of equity and mutual benefit.

Article I provides that the citizens or subjects of each of the contracting parties shall be free to enter, travel, or reside in any part of the territories of the other, and shall enjoy perfect protection for their persons and property; that they shall have free access to the courts of justice in pursuit or defense of their rights, on the same footing as native citizens or subjects; that in the rights of residence, travel, possession of goods, succession or transmission of personal estate, they shall enjoy without discrimination the privileges, rights, and liberties of native citizens or subjects, or those of the most favored nation; that they shall enjoy liberty of conscience under the law, public or private exercise of worship, and the right of burial according to their religious customs; that they shall not pay any discriminating charges or taxes whatsoever on any pretext; and that they shall be exempt from all compulsory military services, forced loans, or military exactions or contributions.

Article II provides for reciprocal freedom of commerce and navigation between the territories of the high contracting parties, making specific statements covering the method and means of such commerce, and only exempting from these stipulations "the law or ordinances with regard to trade, the immigration of laborers, police, and public security which are in force or which may be hereafter enacted in either by the two countries."

Article III provides for the immunity of the dwellings, manufactories, warehouses, and shops of the citizens or subjects of either party within the territories of the other, except under the conditions and forms of law in force for native citizens or subjects.

Article IV provides that there shall be no dis-

criminating import duties; but its terms are not applicable to sanitary and other prohibitions necessary for the protection of persons, of cattle, or of plants useful in agriculture.

Article V provides that there shall be no discriminating export duties; and Article VI provides that there shall be exemption from transit duties and equal rights with native citizens or subjects in all that relates to warehousing, bounties, facilities, and drawbacks.

Article VII gives United States vessels the right to carry into Japanese ports all articles that Japanese vessels may lawfully carry, on like conditions, and the privilege is reciprocal. The same equality is established as to the export trade.

Articles VIII and IX provide against discriminating duties, tonnage, harbor, pilotage, light-house, quarantine, or other similar charges; and against discrimination in the stationing, loading, and unloading of vessels in ports, basins, docks, roadsteads, harbors, or rivers.

Article X provides that each country exempts its coasting trade from these stipulations, but agrees to grant to the other the rights granted to the citizens or subjects of any other country. Vessels of the United States, however, may carry cargoes between the open ports of Japan during the existence of the present treaty, Osaka, Nigata, and Ebesumato being excepted.

Article XI makes equitable and beneficent provisions in regard to the refitting of vessels, wrecks, and salvage.

Article XII defines United States and Japanese vessels; Article XIII directs that consuls shall receive from local authorities whatever help can be lawfully given in recovering deserters from vessels; Article XIV provides that each of the high contracting parties shall concede to the government, ships, citizens, or subjects of the other any privilege, favor, or immunity, in commerce or navigation, hitherto given or hereafter given to the government, ships, citizens, or subjects of any other nation, the aim of each being to place the other on the footing of the most favored nation; and Article XV provides for the appointment of consuls and consular agents in all ports, cities, and places, except those where it may not be convenient to recognize such officers, but such exceptions when made shall apply to all other nations, and the consuls and consular agents of each of the high contracting parties shall enjoy all the privileges, exemptions, and immunities granted to the consular agents of the most favored nation.

Article XVI provides that the citizens or subjects of each of the high contracting parties shall enjoy in the territories of the other the same protection as native citizens or subjects in regard to patents, trademarks, and designs upon the fulfillment of the formalities prescribed by law.

Article XVII provides that all foreign settlements in Japan shall be merged into Japanese communities from the date on which the treaty goes into force, and form part of the municipal system of Japan, subject to competent Japanese authorities; leases held in such settlements in perpetuity to be continued on existing terms; and lands granted by the Japanese Government for public purposes free of rent being reserved free of all taxes and charges for such purposes.

Article XVIII declares that this treaty, from the day on which it goes into force, shall be substituted for all previous treaties, each one of which is specifically described: "And from the same date such treaties, conventions, arrangements, and agreements shall cease to be binding, and, in consequence, the jurisdiction then exercised by the courts of the United States in Japan and all the exceptional privileges, exemptions, and immunities there enjoyed by citizens of the United States as a part of or appurtenant to such jurisdiction shall absolutely and without notice cease and determine, and thereafter all such jurisdiction shall be assumed and exercised by Japanese courts.

Article XIX provides that the treaty shall go into effect July 17, 1899, continue for twelve years, and cease and determine at that period on notice given by either party after the expiration of the eleventh year.

A protocol was added which provided that the existing tariff in Japan on American goods shall cease to be binding one month after the ratification of the treaty, and that the tariff regulations of the treaty of March 31, 1854, be made applicable, nothing in the protocol, however, to be construed as limiting the right of the Japanese Government to prohibit any importations that may threaten moral or sanitary security. It regulates also the terms on which citizens of the United States may visit interior points in Japan, pending the opening of the country to them in accordance with the treaty.

Dec. 5, 1894, Mr. Lodge, of Massachusetts, introduced in the Senate the following resolution:

*Resolved*, That the President be requested, if not incompatible with the public interest, to transmit to the Senate all correspondence or other papers relating to the delivery by the United States consul at Shanghai of two Japanese citizens to the Chinese authorities, and also to inform the Senate whether the said Japanese were put to death after being tortured; and whether there was any understanding with the Chinese Government that officers of the United States should aid, assist, and give safe conduct to any Japanese citizen desiring to leave China; and, further, to inform the Senate whether the United States consul at Hankow was reprimanded by Chinese officials for aiding Japanese citizens to leave the country, and whether all information was refused to the United States consul at Nangpo when he made inquiries as to the charges against certain Japanese citizens arrested there.

The resolution was referred to the Committee on Foreign Relations after a brief discussion, reported back, and passed; and in due time the correspondence was submitted.

**Armenian Massacres.**—Dec. 11, 1894, in response to a resolution of the Senate asking for information as to the massacres in Armenia, the President sent the following message:

*To the Senate of the United States:*

I have received a copy of the following resolution of the Senate passed on 3d instant:

*"Resolved*, That the President be requested, if in his judgment it be not incompatible with the public interest, to communicate to the Senate any information he may have received in regard to alleged cruelties committed upon Armenians in Turkey, and especially whether any such cruelties have been committed upon citizens who have declared their intention to become naturalized in this country, or upon persons because of their being Christians.

"And further, to inform the Senate whether any



expostulations have been addressed by this Government to the Government of Turkey in regard to such matters, or any proposals made by or to this Government to act in concert with other Christian powers regarding the same."

In response to said resolution I beg leave to inform the Senate that I have no information concerning cruelties committed upon Armenians in Turkey or upon persons because of their being Christians, except such information as has been derived from newspapers and statements emanating from the Turkish Government denying such cruelties, and two telegraphic reports from our minister at Constantinople.

One of these reports, dated Nov. 28, 1894, is in answer to an inquiry by the State Department touching reports in the press alleging the killing of Armenians, and is as follows:

"Reports in American papers of Turkish atrocities at Sassoun are sensational and exaggerated. The killing was in a conflict between armed Armenians and Turkish soldiers. The grand vizier says it was necessary to suppress insurrection, and that about 50 Turks were killed; between 300 and 400 Armenian guns were picked up after the fight, and reports that about that number of Armenians were killed. I give credit to his statement."

The other dispatch referred to is dated Dec. 2, 1894, and is as follows:

"Information from British ambassador indicates far more loss of lives in Armenia attended with atrocities than stated in my telegram of 28th."

I have received absolutely no information concerning any cruelties committed "upon citizens who have declared their intention to become naturalized in this country," or upon any persons who had a right to claim or have claimed for any reason the protection of the United States Government.

In the absence of such authentic detailed knowledge on the subject as would justify our interference, no "expostulations have been addressed by this Government to the Government of Turkey in regard to such matters."

The last inquiry contained in the resolution of the Senate touching these alleged cruelties seeks information concerning "any proposals made by or to this Government to act in concert with other Christian powers regarding the same."

The first proposal of the kind referred to was made by the Turkish Government through our minister on the 30th day of November, when the Sultan then expressed a desire that a consul of the United States be sent with a Turkish commission to investigate these alleged atrocities on Armenians. This was construed as an invitation on the part of the Turkish Government to actually take part with a Turkish commission in an investigation of these affairs and any report to be made thereon, and the proposition came before our minister's second dispatch was received and at a time when the best information in the possession of our Government was derived from his first report, indicating that the statements made in the press were sensational and exaggerated and that the atrocities alleged really did not exist. This condition very much weakened any motive for an interference based on considerations of humanity, and permitted us without embarrassment to pursue a course plainly marked out by other controlling incidents.

By a treaty entered into at Berlin in the year 1878 between Turkey and various other governments, Turkey undertook to guarantee protection to the Armenians, and agreed that it would "periodically make known the steps taken to this effect to the powers, who will superintend their application."

Our Government was not a party to this treaty, and it is entirely obvious that in the face of the provisions of such treaty above recited our interference in the proposed investigation, especially without the invitation of any of the powers which had assumed by treaty obligations to secure the protection of these Armenians, might have been exceedingly embarrass-

ing, if not entirely beyond the limits of justification or propriety.

The Turkish invitation to join the investigation set on foot by that Government was therefore on the 2d day of December declined. On the same day, and after this declination had been sent, our minister at Constantinople forwarded his second dispatch, tending to modify his former report as to the extent and character of Armenian slaughter. At the same time the request of the Sultan for our participation in the investigation was repeated, and Great Britain, one of the powers which joined in the Treaty of Berlin, made a like request.

In view of changed conditions and upon reconsideration of the subject, it was determined to send Mr. Jewett, our consul at Sivas, to the scene of the alleged outrages, not for the purpose of joining with any other government in an investigation and report, but to the end that he might be able to inform this Government as to the exact truth.

Instructions to this effect were sent to Mr. Jewett, and it is supposed he has already entered upon the duty assigned him.

I submit with this communication copies of all correspondence and dispatches in the State Department on this subject, and the report to me of the Secretary of State thereon.

GROVER CLEVELAND.

EXECUTIVE MANSION, Dec. 11, 1894.

**Great Britain and Venezuela.**—Touching the British-Venezuela boundary dispute, the Congress passed the following resolution:

*Resolved by the Senate and House of Representatives, etc.,* That the President's suggestion, made in his last annual message to this body—namely, that Great Britain and Venezuela refer their dispute as to the boundaries to friendly arbitration—be earnestly recommended to the favorable consideration of both parties in interest.

**Hawaii.**—The affairs of Hawaii occupied a great share of congressional attention; and the Senate discussed a resolution of inquiry as to the withdrawal of the United States war ships, a resolution relative to the government of the islands, a resolution favoring annexation, a resolution expressing regret at the attempt to restore the deposed queen, and a resolution favoring a station of the United States war ships. The President sent to the Senate the following message in regard to a grant to an English cable company:

*To the Senate and House of Representatives:*

I submit herewith certain dispatches from our minister at Hawaii and the documents which accompanied the same.

They disclose the fact that the Hawaiian Government desires to lease to Great Britain one of the uninhabited islands belonging to Hawaii as a station for a submarine telegraph cable, to be laid from Canada to Australia, with a connection between the island leased and Honolulu.

Both the Hawaiian Government and the representatives of Great Britain in this negotiation concede that the proposed lease can not be effected without the consent of the United States, for the reason that in our reciprocity treaty with the King of Hawaii he agreed that as long as said treaty remained in force he would not "lease or otherwise dispose of or create any lien upon any port, harbor, or other territory in his dominion or grant any special privilege or right of use therein to any other power, state, or government."

At the request of the Hawaiian Government this subject is laid before the Congress for its determination upon the question of so modifying the treaty agreement above recited as to permit the proposed lease.

It will be seen that the correspondence which is

submitted between the Hawaiian and British negotiators negatives the existence on the part of Hawaii of any suspicion of British unfriendliness or the fear of British aggression.

The attention of the Congress is directed to the following statement contained in a communication addressed to the Hawaiian Government by the representatives of Great Britain:

"We propose to inform the British Government of your inquiry whether they would accept the sovereignty of Nicker island or some other uninhabited island on condition that no subsidy is required from you. As we explained, we have not felt at liberty to entertain that question ourselves, as we were definitely instructed not to ask for the sovereignty of any island, but only for a lease simply for the purpose of the cable."

Some of the dispatches from our minister, which are submitted, not only refer to the project for leasing an uninhabited island belonging to Hawaii, but contain interesting information concerning recent occurrences in that country and its political and social condition. This information is valuable because it is based upon the observation and knowledge necessarily within the scope of the diplomatic duties which are intrusted solely to the charge of this intelligent diplomatic officer representing the United States Government at Hawaii.

I hope the Congress will see fit to grant the request of the Hawaiian Government, and that our consent to the proposed lease will be promptly accorded. It seems to me we ought not by a refusal of this request to stand in the way of the advantages to be gained by isolated Hawaii through telegraphic communication with the rest of the world, especially in view of the fact that our own communication with that country would thereby be greatly improved without apparent detriment to any legitimate American interest.

GROVER CLEVELAND.

EXECUTIVE MANSION, Jan. 9, 1895.

The Senate did not act on this suggestion further than to add to an appropriation bill a provision for an American cable line to Hawaii.

**The Seal Question.**—The Bering Sea question was discussed under various forms; but there was a test vote on the payment of damages "to the Government of Great Britain under the agreement reached by exchange of notes of Aug. 21, 1894, in full satisfaction of all demands for damages against the United States growing out of the controversy between the two governments as to the fur seals in Bering Sea under the award and findings of the tribunal of arbitration at Paris, \$425,000.

Mr. Breckinridge, of Kentucky, moved to include that item in the general deficiency appropriation bill, and said in regard to the claims made by the owners of sealing vessels:

"These vessels sailed under the British flag and were seized outside of the 3-mile limit, which covered the jurisdiction of the American Government. It was, however, expressly understood that the citizenship of the owners of the vessels and the actual damage done should be left open for litigation and settlement between the two contracting powers. So that the only question left by the arbitrators is the assessment of damages.

"I believe that I have stated the general case exactly. If not, I will gladly be corrected. The British minister filed claims amounting to \$542,000, reserving the privilege of filing additional claims, and proposed to have them settled by a convention of arbitrators. Of these claims, it is alleged that a certain amount, somewhat in

doubt, but I believe somewhere about \$300,000, was for what is called consequential damages.

"Upon none of these claims has interest been added. So that we were in this condition: There was a judgment against us, with nothing left but the assessment of damages. There were claims of \$542,000, with interest from 1886 and various other dates, up to 1889, I believe none later than 1890, so that the average time would be about the beginning of January, 1888, and the right to file additional claims of any amount.

"Among these claims were many for false imprisonment, and these are still open to additional claims. The sum that was agreed upon is \$425,000. If we admit that this \$300,000 is a disputed claim, and that there are no new claims to be added, it would stand that we owe about \$227,000, practically undisputed, on which we have to calculate interest for seven years at 4 or 6 per cent.; and when to the amount so found we add the half of the amount in dispute, it makes it, either at 4 or at 6 per cent., a larger sum than the sum agreed upon.

"If judgment is obtained against us, under what seems to me to be a rule we can not well escape, it will be, with interest, over \$750,000, for if we admitted through Mr. Blaine that it is a proper rule by which damages should be assessed, a rule that we then admitted, and, representing a great Government desiring to do justice and not to higggle upon small matters, I do not see now how we can raise that question over again. We admitted, through the Secretary of State and the President of the United States, that this was the rule when we had a chance to win. It will hardly be becoming in us, now that we have lost, to say that was not the proper rule; that 'it was a good rule when we thought we were going to win and you were to pay us money, but it is a bad rule when we have lost and we are to pay you the money.'

"This will be a humiliating position in which to put our Government, and for one I will not assume the responsibility of putting my country in such a position, nor will I be a party thereto. Let others do this if they so please, and to have such judgment made by arbitrators, and having arbitrators, will cost us not less than \$150,000, perhaps more, in addition. This Paris arbitration cost us \$224,000, and when we add the items together, the claims that are beyond doubt just against us, a fair compromise as to the part that is in dispute, the interest on the debts due, the expense of the arbitration, we shall get off by this payment by a very much smaller sum than in any other way. And, in addition to that, we settle at once a matter that is a sore.

"It seems to me that it is not a bad bargain. And upon broader grounds, when we come to settle what we owe, when the money is to go to persons who have been wronged by us—because, whatever the law may be in our judgment, we have submitted it to the arbitrament of this tribunal, and that question has been decided, that we have wronged these people—it does not become us to whine about it. It does not become us to go down to the tavern and denounce the judge, as litigants sometimes do who lose and have no appeal. Our duty and our pleasure ought to be in a spirit of international courtesy



and general fairness, having reached a conclusion that is not in itself a very bad one, to settle this matter and wipe it off the books and remove it as a matter of disagreement between Great Britain and this nation." That seems to me to be the best solution of the question."

Mr. Hitt made this exposure of the character of the great mass of the claims:

"Mr. Chairman, the appropriation asked for here, of \$425,000 for damages to British subjects who were prevented from catching seals in Bering Sea, to be paid to Great Britain, and by that Government to be paid over to claimants, is in part for grossly exaggerated claims, in part for a mass of fiction, pure fiction of imaginary seal catches added to these exaggerated claims, and in part for outright frauds, pretended claims of British subjects, but really belonging to American citizens, who should be punished for violating their country's laws, not paid. That is in brief the nature of these claims. The whole amount of the claims added together is \$542,000. The President has proposed to pay \$425,000 to settle them in a lump sum, without examination. That would give every claimant four fifths of all his claim—a vast sum to pay for fictions and frauds! The men who were conducting these Bering Sea seal-fishing ventures, instead of being, as both gentlemen who have advocated this amendment have stated, 'engaged in a lawful occupation' were, in fact, as to more than half these claims, American citizens unlawfully engaged in transgressing an act of Congress which prohibited sealing in Bering Sea—a law absolutely binding upon them. We may be liable for actual damages to a British subject since the decision of the Paris tribunal of arbitration that we have no jurisdiction outside of the 3-mile limit, if we seize or warn him off from sealing there; but not so with Americans, for they are subject to our law, and we had a law forbidding sealing in those waters. Instead of being entitled to money they should have been arrested and fined. They are only entitled to punishment. They should go, not to the Treasury, but to jail.

"What are these claims? There were 18 ships that went to catch seals in Bering Sea, which it is agreed on both sides were seized or warned off by the United States cruisers. They are all claimed to have been owned by British subjects. Claims for two other ships have been added since, making 20 in all. As a matter of truth, 10 of these ships were owned by Americans. The real owners knew if they sent those ships into Bering Sea it was a violation of the laws of Congress, forbidding seal fishing there, and these laws were the laws of their country, from whose penalties they could not escape if known. So these owners put forward Canadians, British subjects, to conduct the work. How did they do it? Take one, the first one, Boscowitz. A man named Joseph Boscowitz, a rich man, an American citizen, as he stated to our consul, Myers, at Victoria and Mr. T. T. Williams in San Francisco, made a partnership with a Capt. Warren, a British subject, who was skilled in this business or craft, and lent him money to pay for his half of the vessels and ventures. So that Warren, who had no capital, was only nominally in-

terested as half owner. The loans were secured to Boscowitz by mortgage on the vessels.

"He lent Warren money at such a high rate of interest that it took all the profits, leaving Warren nothing for the work. Then Warren became insolvent, and Boscowitz closed down on him with his mortgages. But Boscowitz did not want the ships back in his own name. What then happened? They got a blacksmith named Thomas H. Cooper, a British subject living in San Francisco, a brother-in-law of Warren, to go up to Victoria, and when the sheriff sold off the whole fleet on the mortgages, this blacksmith bought it all in for \$1, and immediately executed mortgages on the ships at high figures to Boscowitz, and he has thus been the real owner. Boscowitz and Warren were there when this man Cooper bought the ships. The man did not even know the number or names of the ships when he gave his testimony.

"He testified that he did not pay the dollar, but told Warren to pay it for him; and he signed all the papers and mortgages presented to him by Boscowitz.

"Now, then, this man, Thomas H. Cooper, appears among the claimants as an injured British subject, demanding \$225,000 damages for the seizure of these ships which really belonged to Boscowitz. That is the way our Government is proposed to be plundered for a law-breaking American citizen. When you vote this and it is handed over to Sir Julian Pauncefote, whose action is purely ministerial and functional, is it to go, to the amount of four fifths of \$225,000, to Thomas H. Cooper, the British subject who served as the man of straw in this fraud, and who testifies that he has no interest whatever in it?"

The House refused, by a vote of 143 nays to 112 yeas, to include the item in the appropriation bill.

**Copyright.**—March 2 the House of Representatives suspended the rules and passed "a bill to amend section 4965, chapter 3, Title LX, of the Revised Statutes of the United States relating to copyrights":

*Be it enacted, etc.,* That section 4965, chapter 3, Title LX, of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4965. If any person, after the recording of the title of any map, chart, dramatic or musical composition, print, cut, engraving, or photograph, or chromo, or the description of any painting, drawing, statue, statuary or model or design intended to be perfected and executed as a work of the fine arts, as provided by this act, shall, within the term limited, contrary to the provisions of this act, and without the consent of the proprietor of the copyright first obtained in writing, signed in presence of two or more witnesses, engrave, etch, work, copy, print, publish, dramatize, translate, or import, either in whole or in part, or by varying the main design with intent to evade the law, or, knowing the same to be so printed, published, dramatized, translated, or imported, shall sell or expose to sale any copy of such map or other article as aforesaid, he shall forfeit to the proprietor all the plates on which the same shall be copied, and every sheet thereof, either copied or printed, and shall further forfeit \$1 for every sheet of the same found in his possession, either printing, printed, copied, published, imported, or exposed for sale; and in case of a painting, statue, or statuary, he shall forfeit \$10 for every copy of the same in his possession, or by him sold or exposed for sale: *Provided, however,*

That in the case of any such infringement by a newspaper or news periodical the total sum to be recovered in any action brought under the provisions of this section shall not for any one infringement exceed double the market value of the copyright infringed upon. One half of all the foregoing penalties shall go to the proprietors of the copyright and the other half to the use of the United States."

"*Provided, however,* In the case of any such infringement of the copyright of a photograph made from any object not a work of fine arts, the sum to be recovered in any action brought under the provisions of this section shall be not less than \$100 nor more than \$5,000: *And provided further,* In case of any such infringement of the copyright of a painting, drawing, statue, engraving, etching, print, or model, or design not a work of fine arts, or of a photograph of the work of the fine arts, the sum to be recovered in any action brought through the provisions of this section shall not be less than \$250 and not more than \$10,000."

Mr. Covert, of New York, said in explanation of the measure:

"Mr. Speaker, the objects and purposes of this measure may be very concisely stated. It is intended to remedy a gross evil which has grown up under the existing statute, the provisions of which have brought about results which I am very sure were not contemplated when the copyright law was enacted some years ago. The chiefest injury inflicted in the enforcement of the statute as it stands has been and is suffered by the newspaper press of every section of the country. Under conditions as they exist to-day, if any newspaper shall, through oversight or otherwise, publish in its columns any copyrighted photograph, the newspaper may be made not only to forfeit the plates of such copy, but the sum of \$1 for every copy in its possession.

"And just here comes in the unanticipated wrong and injury inflicted upon the newspaper press under the existing law. I call attention to the phraseology of the statute establishing penalties for 'copies found in possession.' Without question the intention was to have this provision apply solely to lithographic prints and to other prints of that character where the issue or production was comparatively limited. The courts, however, have placed their own construction upon this provision of the statute. They have held that newspapers are liable to the penalty named, limited only in extent by the circulation reached by them; that is to say, that the phraseology, 'copies found in possession,' means the copies of the newspapers printed and circulated.

"I have no criticism to make, Mr. Speaker, upon this construction of the statute. I am inclined to believe that it is the only construction that can properly be given to it. But it is here that the wrong comes in, and it is the purpose of this measure to remedy the wrong by a modification of the extreme penalties established. I may add in this connection that the courts have further held that the penalties may be exacted even when the fact that the picture has been copyrighted does not appear on the original from which the copy is published.

"It can very readily be seen how, under conditions like these, it is more than hazardous for a newspaper to produce illustrations as a part of news articles concerning every-day events. It is the freshness, the early publication of illustrated news articles, which give them value and importance. It matters little how conscientious a

newspaper publisher may be, or how careful may be his methods in this regard. Time is the essence of the matter in his case. In the hurry of the preparation and publication of an illustrated news article violations of the existing statute may be made by the most careful and reputable of publishers. Penalties aggregating, under the construction of the statute I have mentioned, very much more than was contemplated when the present law was enacted may be sued for and recovered.

"Any number of instances may be cited in support of this statement. One of these instances may suffice as an illustration and an object lesson. One of the leading metropolitan journals, through an oversight on the part of one of its employees, printed a picture of a pleasure yacht from a copyrighted photograph, the regular price of which, including the license to print, was only \$1. Suit has been brought and is now pending to recover from the proprietors of the newspaper \$817,000, the penalties accruing upon the total number of the editions of the paper in which the picture appeared. Nothing need be added, it seems to me, to establish the existence of the wrong here sought to be corrected.

"The measure now before the House makes no change in the existing law except to moderate the rigor of its penalties. The purpose is not by any means to free infringers of copyright from substantial and proper penalties for their wrongful acts. It provides that in case of any infringement of the copyright of a photograph made from any object not a work of the fine arts, the sum to be recovered in any action shall be not less than \$100 nor more than \$5,000. In the case of a painting, statue, print, or design for a work of the fine arts, or an infringement of the copyright of a work of the fine arts, the penalty shall be not less than \$250 and not more than \$10,000.

"I beg to say, in conclusion, Mr. Speaker, that this measure has the strong indorsement of the American Publishers' Association, which earnestly asks its enactment. The American Copyright League and the Authors' Association join in the concession that the modification I have outlined should be made, and this amendment meets their entire approval.

"With the absolute assurance that this measure is in every way a conservative and proper modification of the existing statute, I earnestly ask that it may be enacted into law."

The Senate passed the measure on the same day and it was approved by the President.

**Suppression of Lottery Traffic.**—March 1, 1895, the House of Representatives suspended the rules and passed, with amendments, the Senate bill for the suppression of lottery traffic through national and interstate commerce and the postal service, subject to the jurisdiction and laws of the United States:

*Be it enacted, etc.,* That any person who shall cause to be brought within the United States from abroad for the purpose of disposing of the same, or deposited in or carried by the mails of the United States, or carried from one State to another in the United States, any paper, certificate, or instrument purporting to be or representing a ticket, chance, share, or interest in or dependent upon the event of a lottery, so-called gift concert, or similar enterprise, offering prizes de-



pendent upon lot or chance, or shall cause any advertisement of such lottery, so-called gift concert, or similar enterprise, offering prizes dependent upon lot or chance, to be brought into the United States, or deposited in or carried by the mails of the United States, or transferred from one State to another in the same, shall be punishable in the first offense by imprisonment for not more than two years or by a fine of not more than \$1,000, or both, and in the second and after offenses by such imprisonment only.

SEC. 2. That the provisions of sections 3929 and 4041 of the United States Revised Statutes as amended, respectively, and the provisions of sections 2491 and 2492 of the United States Revised Statutes, and of sections 11, 12, and 13 of the act of Congress of Oct. 1, 1890, entitled "chapter 1244. An Act to reduce the revenue and equalize duties on imports, and for other purposes," and all other provisions of law for the suppression of traffic in or circulation of any such tickets, chances, shares, or interests in or other matter relating to lotteries, or for the suppression of traffic in or circulation of obscene books or articles of any kind, shall apply in support, aid, and furtherance of the enforcement of this act.

SEC. 3. That nothing herein contained shall be deemed to repeal by implication sections 3894, 3929, or 4041 of the United States Revised Statutes, or any part thereof, nor any provisions of the act of Congress of April 29, 1878, entitled "An Act to prevent the sale of policy or lottery tickets in the District of Columbia," nor any provisions of the act of Congress of Sept. 19, 1890, entitled "An Act to amend certain sections of the Revised Statutes relating to lotteries, and for other purposes," nor any provision of the laws whatsoever against the establishment of lotteries, or games, or other schemes, or prizes, or chances, or the traffic in or circulation of tickets and other such papers or instruments, or the publication of advertisements or notices in anywise relating thereto.

SEC. 4. That the powers conferred upon the Postmaster-General by the statute of 1890, chapter 908, section 2, are hereby extended and made applicable to all letters or other matter sent by mail.

The Senate, March 2, concurred in the House amendments, and the President approved the measure on the same day.

**Registry Bonds.**—Jan. 10, 1895, the House of Representatives passed the following Senate bill:

*Be it enacted, etc.,* That section 4145 of the Revised Statutes, providing for bonds for registry of vessels, is hereby repealed.

SEC. 2. That section 4146 of the Revised Statutes is hereby amended so as to read:

"SEC. 4146. A certificate of registry shall be solely used for the vessel for which it is granted, and shall not be sold, lent, or otherwise disposed of, to any person whomsoever; and in case the vessel so registered shall be lost, or taken by an enemy, burned, or broken up, or shall be otherwise prevented from returning to the port to which she may belong, the certificate, if preserved, shall be delivered up within eight days after the arrival of the master or person having the charge or command of such vessel within any district of the United States, to the collector of such district; and if any foreigner, or any person for the use and benefit of such foreigner, shall purchase or otherwise become entitled to the whole, or any part or share of, or interest in such vessel, the same being within a district of the United States, the certificate shall, within seven days after such purchase, change, or transfer of property, be delivered up to the collector of the district; and if any such purchase, change, or transfer of property shall happen when such vessel shall be at any foreign port or place, or at sea, then the master or person having the charge or command thereof shall, within eight days after his arrival within any district of the United States, deliver up the certificate to the collector of such district. Any

master or owner violating the provisions of this section shall be liable to a penalty of not exceeding \$500, and the certificate of registry shall be thenceforth void. The Secretary of the Treasury shall have the power to remit or mitigate such penalty if in his opinion it was incurred without willful negligence or intention of fraud."

SEC. 3. That section 4320, Revised Statutes, is hereby amended so as to read:

"SEC. 4320.—No licensed vessel shall be employed in any trade whereby the revenue laws of the United States shall be defrauded. The master of every such vessel shall swear that he is a citizen of the United States, and that such license shall not be used for any other vessel or any other employment than that for which it was specially granted, or in any trade or business whereby the revenue of the United States may be defrauded; and if such vessel be less than 20 tons burden, the husband or managing owner shall swear that she is wholly the property of citizens of the United States; whereupon it shall be the duty of the collector of the district comprehending the port whereto such vessel may belong to grant a license."

SEC. 4. That no bond shall be required on the licensing of yachts; no licensed yacht shall engage in any trade, nor in any way violate the revenue laws of the United States; and every such yacht shall comply with the laws in all respects. Section 1 of the act approved March 3, 1893, amending section 4214, Revised Statutes, and so forth, is amended accordingly.

SEC. 5. That any master or owner violating the provisions of this or the preceding section shall be liable to the penalty of \$200, in addition to any other penalty imposed by law. The Secretary of the Treasury shall have power to remit or mitigate any such penalty if in his opinion it was incurred without negligence or intention of fraud.

SEC. 6. That this act shall not invalidate the bonds heretofore given under the requirements of law.

The measure was approved by the President Jan. 15.

**Washington and Lee University.**—On Dec. 6, 1894, the Senate passed the following measure for the relief of Washington and Lee University:

A bill (section 454) for the relief of Washington College (now known as Washington and Lee University), located at Lexington, Va.

*Be it enacted, etc.,* That in order to reimburse to Washington College (now known as Washington and Lee University) for the injury to its buildings, apparatus, libraries, and other property injured or destroyed by troops of the United States during the late war, the Secretary of the Treasury is hereby authorized and directed to pay to the proper authorities of said institution, out of any money in the Treasury not otherwise appropriated, such sum, not exceeding \$17,484, as the accounting officers of the Treasury Department, under direction of the Secretary, may find to be duly proven on account of such injury and destruction.

SEC. 2. That this act shall be in force from its passage.

March 2 the subject was brought up in the House of Representatives, and Mr. Tucker, of Virginia, moved to suspend the rule and pass the bill.

Mr. Powers, of Vermont, said in support of the motion:

"In my judgment this bill is legally, morally, patriotically, and aesthetically right. The President of the United States, Abraham Lincoln, in 1863 issued a proclamation for the guidance of the Union generals, in which he instructed them that institutions of learning, institutions devoted to charitable purposes, works of art, and all things of that sort should be spared from

spoliation by the invading army. In that proclamation he simply reiterated what the law of nations has always maintained, namely, that when hostilities are in progress all institutions of this character should be spared if possible.

"It is true that the exigencies of war may sometimes necessitate the occupation or the destruction of such institutions, but this is not that case. On Hunter's raid his men camped on the grounds of this university, and, under the license which sometimes prevails when soldiers are in camp, contrary to his orders some of his men entered these buildings and destroyed this property.

"Now, sir, it being a legal duty on the part of the Government to compensate such institutions for damages inflicted in this way, it being our legal duty by force of the proclamation of our own President, it being a moral duty on our part to repair, as well as we can, the injury that was done to this institution, it seems to me that we ought as well patriotically to vote this money unanimously. We have done it in the case of William and Mary College, which was a case less deserving than that of this institution.

"This institution was the pet of the Father of his Country. George Washington himself donated to it a fund now equal to the sum of \$50,000, the annual interest of which at 6 per cent. is paid by the State of Virginia to this institution. I hope, sir, there will not be a single vote or voice raised on this floor against this bill, for it is right and proper that we should pass it."

Mr. Reed, of Maine, said in criticism of the measure:

"I do not purpose, Mr. Speaker, to occupy the five minutes which have been given me by the gentleman from Missouri. My only purpose is to state what seems to me to be sound sense in connection with this matter, for from the indications which have already appeared it is evident that this question is to be considered upon sentiment and not upon reason and wisdom.

"The bill for the relief of the William and Mary College passed the last Congress. It was up many years ago. It was then carefully debated and carefully considered; and in a Democratic House the bill had been refused passage on account of its probable consequences. Without discussion, without examination, it was passed by the last Congress and was signed by the President. In my judgment, the passage of that act was a great mistake. In my judgment, also, it never would have passed if there had been that opportunity for discussion which a great question like that really demands, nor would this, even if there is involved in it a sentimental feeling which we might have toward a college bearing the name of the Father of his Country, even if there had been added to it the name of the general who commanded the rebel forces during the war. That sentimental feeling is very natural; but the principle involved, in my judgment, is something that we can not afford to sanction.

"War is a dreadful thing; it is barbarism, and, as a great general has said, can not be refined. But whoever provokes war must be prepared to take the consequences of war, and, among other consequences, even the lawlessness

of the troops who are engaged. And while there may be every effort to save institutions of learning, institutions of charity, libraries, and other things of that sort, nevertheless no nation can afford to adopt the doctrine that all injuries of that class are to be compensated when the war is over, because such injuries spread out in so broad a fashion that no nation ought to think of endeavoring to liquidate claims arising on that account.

"The passage of this bill will be a precedent in addition to that already established and which is now quoted, as I prophesied it would be if the bill passed. This is an additional precedent to be cited for granting compensation for every kind of injury that took place and a great deal of injury that did not take place during the Southern rebellion. We ought not to pass the bill. We ought not to establish the principle. Whenever war is made the consequences of the war must be taken. They are not subjects of recompense."

The rules were suspended, and the measure was passed and duly approved by the President.

**Military Parks.**—The Congress passed and the President approved two measures for military parks. One was for such a park at Shiloh, as follows:

*Be it enacted, etc.,* That in order that the armies of the Southwest which served in the civil war, like their comrades of the Eastern armies at Gettysburg and those of the central West at Chickamauga, may have the history of one of their memorable battles preserved on the ground where they fought, the battlefield of Shiloh, in the State of Tennessee, is hereby declared to be a national military park, whenever title to the same shall have been acquired by the United States and jurisdiction over the lands and roads of the same shall have been granted to the United States by the State of Tennessee; that is to say, the area inclosed by the following lines, or so much thereof as the commissioners of the park may deem necessary, to wit: Beginning at low-water mark on the north bank of Snake creek where it empties into the Tennessee river; thence westwardly in a straight line to the point where the river road to Crumps Landing, Tenn., crosses Snake creek; thence along the channel or Snake creek to Owl creek; thence along the channel of Owl creek to the crossing of the road to Purdy, Tenn.; thence southwardly in a straight line to the intersection of an east and west line drawn from the point where the road to Hamburg, Tenn., crosses Lick creek, near the mouth of the latter; thence eastward along the said east and west line to the point where the Hamburg road crosses Lick creek; thence along the channel of Lick creek to the Tennessee river; thence along low-water mark of the Tennessee river to the point of beginning, containing 3,000 acres, more or less, and the area thus inclosed shall be known as the Shiloh National Military Park.

SEC. 2. That the establishment of the Shiloh National Military Park shall be carried forward under the control and direction of the Secretary of War, who, upon the passage of this act, shall proceed to acquire title to the same either under the act approved Aug. 1, 1888, entitled "An Act to authorize the condemnation of land for sites of public buildings, and for other purposes," or under the act approved Feb. 27, 1867, entitled "An Act to establish and protect national cemeteries," as he may select, and as title is procured to any portion of the lands and roads within the legal boundaries of the park he may proceed with the establishment of the park upon such portions as may thus be acquired.

SEC. 3. That the Secretary of War is hereby au-



thorized to enter into agreements whereby he may lease, upon such terms as he may prescribe, with such present owners or tenants of the lands as may desire to remain upon it, to occupy and cultivate their present holdings upon condition that they will preserve the present buildings and roads and the present outlines of field and forest, and that they only will cut trees or underbrush under such regulations as the Secretary may prescribe, and that they will assist in caring for and protecting all tablets, monuments, or such other artificial works as may from time to time be erected by proper authority.

SEC. 4. That the affairs of the Shiloh National Military Park shall, subject to the supervision and direction of the Secretary of War, be in charge of three commissioners, to be appointed by the Secretary of War, each of whom shall have served at the time of the battle in one of the armies engaged therein, one of whom shall have served in the Army of the Tennessee, commanded by Gen. U. S. Grant, who shall be chairman of the commission; one in the Army of the Ohio, commanded by Gen. D. G. Buell; and one in the Army of the Mississippi, commanded by Gen. A. S. Johnston. The said commissioners shall have an office in the War Department building and while on actual duty shall be paid such compensation out of the appropriations provided by this act as the Secretary of War shall deem reasonable and just; and for the purpose of assisting them in their duties and in ascertaining the lines of battle of all troops engaged and the history of their movements in the battle, the Secretary of War shall have authority to employ, at such compensation as he may deem reasonable, to be paid out of the appropriations made by this act, some person recognized as well informed concerning the history of the several armies engaged at Shiloh, and who shall also act as secretary of the commission.

SEC. 5. That it shall be the duty of the commission named in the preceding section, under the direction of the Secretary of War, to open or repair such roads as may be necessary to the purposes of the park, and to ascertain and mark with historical tablets or otherwise, as the Secretary of War may determine, all lines of battle of the troops engaged in the battle of Shiloh and other historical points of interest pertaining to the battle within the park or its vicinity; and the said commission in establishing this military park shall also have authority, under the direction of the Secretary of War, to employ such labor and services and to obtain such supplies and material as may be necessary to the establishment of said park under such regulations as he may consider best for the interest of the Government, and the Secretary of War shall make and enforce all needed regulations for the care of the park.

SEC. 6. That it shall be lawful for any State that had troops engaged in the battle of Shiloh to enter upon the lands of the Shiloh National Military Park for the purpose of ascertaining and marking the lines of battle of its troops engaged therein: *Provided*, That before any such lines are permanently designated the position of the lines and the proposed methods of marking them by monuments, tablets, or otherwise shall be submitted to and approved by the Secretary of War, and all such lines, designs, and inscriptions for the same shall first receive the written approval of the Secretary, which approval shall be based upon formal written reports, which must be made to him in each case by the commissioners of the park.

SEC. 7. That if any person shall, except by permission of the Secretary of War, destroy, mutilate, deface, injure, or remove any monument, column, statues, memorial structures, or work of art that shall be erected or placed upon the grounds of the park by lawful authority, or shall destroy or remove any fence, railing, inclosure, or other work for the protection or ornament of said park, or any portion thereof, or shall destroy, cut, hack, bark, break down, or otherwise injure any tree, bush, or shrubbery that

may be growing upon said park, or shall cut down or fell or remove any timber, battle relic, tree or trees growing or being upon said park, or hunt within the limits of the park, or shall remove or destroy any breastworks, earthworks, walls, or other defenses or shelter on any part thereof constructed by the armies formerly engaged in the battles on the lands or approaches to the park, any person so offending and found guilty thereof, before any justice of the peace of the county in which the offense may be committed or any court of competent jurisdiction, shall for each and every such offense forfeit and pay a fine, in the discretion of the justice, according to the aggravation of the offense, of not less than \$5 nor more than \$50, one half for the use of the park and the other half to the informer, to be enforced and recovered before such justice in like manner as debts of like nature are now by law recoverable in the several counties where the offense may be committed.

SEC. 8. That to enable the Secretary of War to begin to carry out the purpose of this act, including the condemnation or purchase of the necessary land, marking the boundaries of the park, opening or repairing necessary roads, restoring the field to its condition at the time of the battle, maps and surveys, and the pay and expenses of the commissioners and their assistant, the sum of \$150,000, or such portion thereof as may be necessary, is hereby appropriated, out of any moneys in the Treasury not otherwise appropriated, and disbursements under this act shall require the approval of the Secretary of War, and he shall make annual report of the same to Congress.

The other act was for the establishment of a military park at Gettysburg, as follows:

That the Secretary of War is hereby authorized to receive from the Gettysburg Battlefield Memorial Association, a corporation chartered by the State of Pennsylvania, a deed of conveyance to United States of all the lands belonging to the said association, embracing about 800 acres, more or less, and being a considerable part of the battlefield of Gettysburg, together with all rights of way over avenues through said lands acquired by said association, and all improvements made by it in and upon the same. Upon the due execution and delivery to the Secretary of War of such deed of conveyance, the Secretary of War is authorized to pay to the said Battlefield Memorial Association the sum of \$2,000, or so much thereof as may be necessary to discharge the debts of said association, the amount of such debts to be verified by the officers thereof, and the sum of \$2,000 is hereby appropriated out of any money in the Treasury not otherwise appropriated to meet and defray such charges.

SEC. 2. That as soon as the lands aforesaid shall be conveyed to the United States the Secretary of War shall take possession of the same, and such other lands on the battlefield as the United States have acquired, or shall hereafter acquire, by purchase or condemnation proceedings; and the lands aforesaid shall be designated and known as the "Gettysburg National Park."

SEC. 3. That the Gettysburg National Park shall, subject to the supervision and direction of the Secretary of War, be in charge of the commissioners heretofore appointed by the Secretary of War for the location and acquisition of lands at Gettysburg, and their successors; the said commissioners shall have their office at Gettysburg, and while on duty shall be paid such compensation out of the appropriation provided in this act as the Secretary of War shall deem reasonable and just. And it shall be the duty of the said commissioners, under the direction of the Secretary of War, to superintend the opening of such additional roads as may be necessary for the purposes of the park and for the improvement of the avenues heretofore laid out therein, and to properly mark the boundaries of the said park, and to ascertain and definitely mark the lines of battle of all troops engaged in the battle of Gettysburg, so far as the same shall fall within the limits of the park.



SEC. 4. That the Secretary of War is hereby authorized and directed to acquire, at such times and in such manner as he may deem best calculated to serve the public interest, such lands in the vicinity of Gettysburg, Pa., not exceeding in area the parcels shown on the map prepared by Major-Gen. Daniel E. Sickles, United States army, and now on file in the office of the Secretary of War, which were occupied by the infantry, cavalry, and artillery on the 1st, 2d, and 3d days of July, 1863, and such other adjacent lands as he may deem necessary to preserve the important topographical features of the battlefield: *Provided*, That nothing contained in this act shall be deemed and held to prejudice the rights acquired by any State or by any military organization to the ground on which its monuments or markers are placed, nor the right of way to the same.

SEC. 5. That for the purpose of acquiring the lands designated and described in the foregoing section not already acquired and owned by the United States, and such other adjacent land as may be deemed necessary by the Secretary of War for the preservation and marking of the lines of battle of the Union and Confederate armies at Gettysburg, the Secretary of War is authorized to employ the services of the commissioners heretofore appointed by him for the location, who shall proceed, in conformity with his instructions and subject in all things to his approval, to acquire such lands by purchase, or by condemnation proceedings, to be taken by the Attorney-General in behalf of the United States, in any cases in which it shall be ascertained that the same can not be purchased at prices deemed reasonable and just by the said commissioners and approved by the Secretary of War. And such condemnation proceedings may be taken pursuant to the act of Congress approved Aug. 1, 1888, regulating the condemnation of land for public uses, or the joint resolution authorizing the purchase or condemnation of land in the vicinity of Gettysburg, Pa., approved June 5, 1894.

SEC. 6. That it shall be the duty of the Secretary of War to establish and enforce proper regulations for the custody, preservation, and care of the monuments now erected or which may be hereafter erected within the limits of said national military park; and such rules shall provide for convenient access by visitors to all such monuments within the park, and the ground included therein, on such days and within such hours as may be designated and authorized by the Secretary of War.

SEC. 7. That if any person shall destroy, mutilate, deface, injure, or remove, except by permission of the Secretary of War, any column, statue, memorial structure, or work of art that shall be erected or placed upon the grounds of the park by lawful authority, or shall destroy or remove any fence, railing, inclosure, or other work for the protection or ornament of said park, or any portion thereof, or shall destroy, cut, hack, bark, break down, or otherwise injure any tree, bush, or shrubbery that may be growing upon said park, or shall cut down or fell or remove any timber, battle relic, tree or trees, growing or being upon said park, or hunt within the limits of the park, or shall remove or destroy any breastworks, earthworks, walls, or other defenses or shelter, or any part thereof, constructed by the armies formerly engaged in the battles on the land or approaches to the park, or shall violate any regulation made and published by the Secretary of War for the government of visitors within the limits of said park, any person so offending and found guilty thereof, before any justice of the peace of the county in which the offense may be committed, shall, for each and every such offense, forfeit and pay a fine, in the discretion of the justice, according to the aggravation of the offense, of not less than \$5 nor more than \$500, one half for the use of the park and the other half to the informer, to be enforced and recovered before such justice in like manner as debts of like nature are now by law recoverable in the county where the offense may be committed.

SEC. 8. That the Secretary of War is hereby authorized and directed to cause to be made a suitable bronze tablet, containing on it the address delivered by Abraham Lincoln, President of the United States, at Gettysburg, on the 19th day of November, 1863, on the occasion of the dedication of the national cemetery at that place, and such tablet having on it besides the address a medallion likeness of President Lincoln, shall be erected on the most suitable site within the limits of said park, which said address was in the following words, to wit:

"Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal.

"Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

"But, in a larger sense, we can not dedicate, we can not consecrate, we can not hallow this ground. The brave men, living and dead, who struggled here have consecrated it far above our power to add or detract. The world will little note, nor long remember, what we say here; but it can never forget what they did here. It is for us, the living, rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us; that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion; that we here highly resolve that these dead shall not have died in vain; that this nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth."

And the sum of \$5,000, or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to pay the cost of said tablet and medallion and pedestal.

SEC. 9. That to enable the Secretary of War to carry out the purposes of this act, including the purchase or condemnation of the land described in sections 4 and 5 of this act, opening, improving, and repairing necessary roads and avenues, providing surveys and maps, suitably marking the boundaries of the park, and for the pay and expenses of the commissioners and their assistants, the sum of \$75,000, or so much thereof as may be necessary, is hereby appropriated out of any money in the Treasury not otherwise appropriated; and all disbursements made under this act shall require the approval of the Secretary of War, who shall make annual report of the same to Congress.

**The Nicaragua Canal.**—The bill "to amend the act entitled 'An Act to incorporate the Maritime Canal Company of Nicaragua,' approved Feb. 20, 1889," was a measure of the gravest importance; and though not taken up in the House of Representatives, it was the subject of earnest discussion in that body, where it finally passed. It involved the granting of aid by the United States Government to the project of a canal through Nicaragua, joining the Atlantic and Pacific. The bill as reported by Mr. Morgan, of Alabama, was as follows:

A bill to amend the act entitled "An Act to incorporate the Maritime Canal Company of Nicaragua," approved Feb. 20, 1889:

*Be it enacted, etc.,* That the capital stock of the Maritime Canal Company of Nicaragua shall consist of 1,000,000 shares of \$100 each, and no more.

SEC. 2. That the words "the Nicaragua Canal,"



whenever used in this act, or the act to which this is an amendment, shall be held to include all real and personal property and franchises, railroads, piers, channels, dams, locks, embankments, and other works necessary for or incidental to the construction, equipment, maintenance, and operation of the said interoceanic canal, made or that may be made by the Maritime Canal Company of Nicaragua, or under its authority, by virtue of the said acts and the concessions granted or to be granted by Nicaragua and Costa Rica.

SEC. 3. That in consideration of the provisions of this act, and before any bonds are issued under the provisions thereof, all the stock of the Maritime Canal Company of Nicaragua heretofore subscribed for or issued, except as in this act provided, shall be called in, canceled, and restored to the treasury of the company, so that none shall remain outstanding; all bonds issued by said company and obligations to deliver bonds shall be redeemed and canceled; all outstanding liabilities of said company shall be satisfied, and all contracts and agreements heretofore made, not consistent with the provisions of this act, shall be canceled, to the satisfaction of the Secretary of the Treasury, it being the intent and object of this act to secure the construction of the Nicaragua Canal by the said company, with the aid of the United States and under the general supervision of the Secretary of the Treasury, to the extent herein provided, upon the basis of the concessions of Nicaragua and Costa Rica now owned by said canal company, as far as practicable, at its actual cost.

SEC. 4. That to secure the means to construct and complete said canal, and to meet the expenditures made on account thereof, the said Maritime Canal Company of Nicaragua is hereby authorized to issue either coupon or registered bonds, or both, of the said company, in denominations of not less than \$50 nor more than \$1,000, to an amount not exceeding \$70,000,000, to be dated on the 1st day of January, 1894, to be payable on the 1st day of July, 1924, but redeemable at the pleasure of the United States at any time after the 1st day of July, 1904, with interest at the rate of 3 per cent. per annum, payable quarterly on the 1st day of April, July, October, and January of each year, from the delivery of the bonds to said company by the Secretary of the Treasury from time to time as in this act provided: *Provided*, That prior to the 1st day of July, 1897, no bonds so indorsed shall be issued from the Treasury in excess of \$30,000,000, and on or before said date the President of the United States may at any time suspend the issue of said indorsed bonds until Congress, being informed by him of the reasons for such suspension, shall otherwise direct.

And said bonds shall be secured by a first mortgage on its property and rights of property now existing or hereafter acquired of all kinds and descriptions, real, personal, and mixed; of all franchises and rights of the said company, including its rights and franchise to be a corporation. Such mortgage shall contain a provision for a sinking fund sufficient for the payment of said bonds at maturity. Such mortgage shall be so framed as to be valid as a first lien under the laws of Nicaragua and Costa Rica. The form and sufficiency of such mortgage as the first lien upon the Nicaragua Canal and of the provision for the sinking fund shall, before execution, be approved by the Attorney-General of the United States, and the trustees named in such mortgage shall be approved by the Secretary of the Treasury, and such mortgage shall be duly executed in triplicate by the officers of said company. And such mortgage shall be recorded in the office of the Secretary of the Treasury in Washington, and in the proper offices in Nicaragua and Costa Rica to be designated by the said States.

SEC. 5. That the said mortgage bonds shall be prepared, engraved, and printed at the Bureau of Engraving and Printing in the city of Washington at the expense of said Maritime Canal Company of Ni-

caragua, and, after being duly executed by the officers of said company, shall be deposited in the Treasury of the United States at Washington, and shall be issued by the Secretary of the Treasury from time to time to the said Maritime Canal Company of Nicaragua only as the work on the Nicaragua Canal progresses, as hereinafter provided.

Before the issue of said bonds by the Secretary of the Treasury he shall cause to be engraved and printed and duly executed on each of said bonds the guarantee of the United States, in accordance with such regulations as may be prescribed by the President of the United States, in the words and figures following, to wit:

"The United States of America guarantees to the lawful holder of this bond the payment by the Maritime Canal Company of Nicaragua of the principal of said bonds and the interest accruing thereon, and as it accrues."

And no bonds shall be issued by the said company except as provided for in this act.

And the Secretary of the Treasury is hereby authorized and directed, if the interest on said bonds as it becomes due is not paid into the Treasury of the United States by the Maritime Canal Company of Nicaragua, to pay the same, and the sum required for that purpose is hereby appropriated, out of any money in the Treasury not otherwise appropriated. And all payments of principal of said bonds, or the interest thereon, shall be made through the Treasury of the United States.

The Maritime Canal Company of Nicaragua shall pay the interest on the guaranteed bonds herein provided for as it becomes due into the Treasury of the United States, and the guarantee of the United States shall not be held or construed as lessening the liability of said company as the principal obligor in said bonds. Upon the failure of said company to pay the interest as it becomes due on said bonds, and upon the payment of such interest by the United States, the said company shall be charged with and shall pay to the United States the amounts paid by the United States on such guarantee, with interest annually at 4 per cent., until paid.

SEC. 6. That for all sums that the United States may pay upon the principal or interest of said bonds under their said guarantee, the United States shall be subrogated to all the rights and liens under the said mortgage which the holders of said bonds or any of them would have had in respect thereof if the same had remained unpaid by the Maritime Canal Company of Nicaragua, and had not been paid by the United States under their guarantee; but until the expiration of five years after the said canal shall be put in operation, and so long as, during said five years, the canal shall be in operation and remain under the control of the Maritime Canal Company of Nicaragua, this subrogated lien and right of the United States as aforesaid shall not be enforced by foreclosure or sale: *Provided*, That in case default shall be made by the said company at any time before the said canal shall be put into operation in the payment of interest as it becomes due, or if default shall be made in any other respect, the right of foreclosure and sale under said mortgage shall at once attach in favor of the United States, without the necessity of judicial proceedings, and may be executed upon the written order of the President of the United States, given to the Attorney-General.

SEC. 7. That after the passage of this act, and before any bonds indorsed under its provisions are issued, and after the surrender and return to the treasury of the company of all stock that may have been issued, and after the surrender and cancellation of all bonds, bond scrip, and obligations to issue bonds, the satisfaction of all liabilities of said company and the cancellation and extinguishment of all contracts and agreements of said company with individuals or corporations, except the concessions from Nicaragua and Costa Rica, but including its contract or agreement with the Nicaragua Canal Construction



Company for the construction of the said canal, as is provided for in this act, and after the acceptance of the provisions of this act by a resolution of the stockholders of said company at a meeting duly called and held for this purpose, a distribution and disposition of the capital stock of the said Maritime Canal Company of Nicaragua shall be made by the officers of the company, as follows, to wit:

First. Seventy million dollars of the capital stock of said company at the par value thereof shall be issued to the United States in consideration for its guarantee of the bonds of the company as provided in section 5 of this act, and the said stock so to be issued shall be full paid and nonassessable and shall be deposited in the Treasury of the United States.

Second. That \$6,000,000 of the said capital stock at the par value thereof shall be issued to the Government of the Republic of Nicaragua, and \$1,500,000 of the said stock at the par value thereof shall be issued to the Government of Costa Rica, according to the terms of their respective concessions heretofore made.

Third. The remaining stock of the company, to wit, \$22,500,000, at the par value thereof, shall be disposed of as hereinafter provided.

Sec. 8. That to enable the Maritime Canal Company to take up, cancel, and extinguish all issues of its stock heretofore made, except those made to the governments of Nicaragua and Costa Rica, and all outstanding obligations for stock, bonds, or bond scrip heretofore entered into by said company, the stock of said company, with the approval of the Secretary of the Treasury, shall be issued to the persons or corporations to be designated by said company not to exceed in the aggregate the sum of \$7,000,000 at its par value, which stock shall be nonassessable. The amount of stock so to be issued shall be finally determined by the Secretary of the Treasury, on principles of justice and equity, but shall not exceed \$7,000,000.

Sec. 9. That the proceeds of the remainder of the capital stock, if sold, be applied exclusively to the construction of the said canal, and the company may offer the said stock for subscription and sale at such time or times and at such price or prices as they shall, in their discretion, determine, but in no case shall the said stock or any part thereof be issued or sold except for cash, nor at any price less than its par value.

Sec. 10. That the working capital immediately available for continuing the construction of the canal may be derived from the proceeds of sale of the company's treasury stock, as provided in section 9 of this act, but should the company not be able to dispose of said stock at par within a reasonable time the Secretary of the Treasury shall, upon the application of the board of directors, deliver to the said Maritime Canal Company bonds of said company, guaranteed as aforesaid, amounting at the par value thereof to the sum of \$2,000,000, said bonds to bear interest from the date of the delivery; and the proceeds of said bonds, when sold by order of the company, shall be used as a working capital, and shall be applied exclusively to the construction of said canal and shall be accounted for by said company in the final settlement of its accounts for construction and deducted from the total amount of bonds which it may become entitled to receive under the provisions of this act.

Sec. 11. That the Secretary of the Treasury shall cause an account to be stated with the Maritime Canal Company of Nicaragua, as soon as practicable after the passage of this act, which shall include all necessary and proper expenditures made by said company since the 3d day of June, 1889, in and about the construction of the said canal, or incident thereto, including the railroad and telegraph lines built by said company. For the liquidation of the amount of such expenditures so ascertained, and by him approved, he shall deliver to said Maritime Canal Company the bonds of said company in an equal amount, but not to exceed \$4,500,000, with the guarantee of the United States thereon, as provided in section 5 of this act.

Sec. 12. That the President of the United States is hereby authorized and directed to cause careful and detailed estimates and statements to be made, from time to time, by duly appointed inspectors of his own selection, but not less often than quarterly each year, of the actual cost of all the work done, and of the plant, material, and services supplied on said canal, including reasonable costs of administration during each quarter, or since the last preceding estimate, and upon the filing with the Secretary of the Treasury of said estimate, duly certified by the inspectors, the said Secretary of the Treasury shall deliver to said Maritime Canal Company of Nicaragua the bonds of the said company, guaranteed as aforesaid, to the amount sufficient to pay such cost and also for the amount of the interest to become due upon its outstanding bonds before the next quarterly estimate; but the total amount of such bonds to be delivered shall not exceed the total cost of said canal and its equipment; and the proceeds of all said bonds shall be wholly applied in payment of the cost of the construction, equipment, maintenance, and operation of such canal and of the railroad, telegraph line, and vessels used in the construction thereof, or incidental thereto, and reasonable expenses of administration, and the accrued interest upon the outstanding bonds of the company, and such bonds shall not be sold or disposed of at less than par; and it shall be satisfactorily shown to the Secretary of the Treasury, before delivering any installment of bonds as aforesaid, that the proceeds of prior installments of bonds have been properly applied in the payment of the cost of construction and maintenance as aforesaid and interest on the bonds of the company. A sum or sums necessary to pay the expense of making the inspections and estimates provided for in this section is hereby appropriated, out of any money in the Treasury not otherwise appropriated, but all expenditures so made by the United States shall be refunded and repaid by the said company upon a final accounting.

Sec. 13. That to secure the proper application of the aid to be furnished by the United States by this act, and for the better and more economical execution of the powers conferred by this act and the act to which it is an amendment, section 4 of the act approved Feb. 20, 1889, entitled "An Act to incorporate the Maritime Canal Company of Nicaragua," be, and is, so amended that 10 of the 15 directors of said company shall be appointed by the President of the United States, by and with the advice and consent of the Senate, not more than 5 of whom shall be appointed from one political party; and 5 of whom shall hold office for one year and 5 for two years, as may be designated in their appointments, and their successors shall hold office for two years. And all parts of said act approved Feb. 20, 1889, inconsistent with this act are hereby repealed.

Sec. 14. That all the rights and powers reserved to Congress by section 8 of the act to which this is an amendment are hereby reserved, and shall apply also to this act.

Sec. 15. That in order to make certain of the feasibility, permanence, and cost of the said canal and its accessory works a board of 3 engineers is hereby constituted, the members of which may be selected by the President of the United States, 1 from the Corps of Engineers, United States army, 1 from the engineers of the navy, and 1 from civil life, and if the President, in his discretion, shall so direct, the said board of engineers, under the direction of the Secretary of State, shall visit and carefully inspect the route of the said canal to examine and consider the plans, profiles, sections, prisms, and specifications for its various parts, and report thereupon to the President of the United States.

Sec. 16. That, for the purpose of paying the necessary expenses of the board of engineers created by section 15 of this act, if the President of the United States shall appoint them and call them into service, the sum of \$15,000, or so much thereof as may be necessary, is hereby appropriated, out of any money in



the Treasury not otherwise appropriated : *Provided*, That the compensation of the members of said board of engineers from civil life shall be fixed by the President ; and the Secretary of State, with the approval of the President of the United States, shall make all needful regulations for carrying this and section 15 of act into execution. And the Secretary of the Treasury, with the approval of the President, shall make all needful regulations for carrying into effect all other parts of this act and the act to which it is an amendment.

Mr. Morgan, after an elaborate discussion of the advantages of the Nicaragua Canal route, and the commercial development that would follow the building of the canal, said as to the policy of Government assistance :

"I hold that the national and international powers of the Government of the United States are equal, under our Constitution, to those of any power on earth. I am a Democrat of so strict a sect as to all that relates to the powers that Congress may exert over the States or against the people that I sometimes feel that I may be dropped from the Democratic procession as it moves in an aggressive course against our reserved rights. But I have always supposed that this vital doctrine of the Democratic creed was intended for the protection of the rights of the States and their citizens within the Union, and were not limitations upon the power of the United States to protect and defend the people and to promote their general welfare in our dealings and relations with foreign peoples and governments.

"As to these matters, I repeat, I would very much regret to be compelled to admit that the United States does not possess powers equal to those of any nation in the world.

"In the case of the United States Bank the Government owned a minority of the stock and the majority was owned by private citizens. This was, for this reason, a public corporation, although it engaged in the private business, even secret business, of dealing in exchange, discounting notes, and collecting money on commission.

"It was an instrumentality of Government and was exempt from taxation by the States. This canal is to have a majority of its stock in the ownership of the United States as an asset of the Treasury. It is to have a majority of its directors appointed by the President and confirmed by the Senate. Its business relates to the commerce and navigation of every nation of the earth. It is under the direct regulation of treaties with foreign powers. At its council board of directors the official representatives of three sovereign republics are assembled. In Nicaragua and Costa Rica the Maritime Canal Company has the right to the exclusive steam navigation of the San Juan river. It is the owner of a body of land more than 1,500 square miles in area in the state of Nicaragua. It has the power to levy tolls on the ships of all nations passing through the canal, exemption from local taxation on all its importations for canal purposes, with the right to make and enforce police regulations on and near the line of the canal and near all its works and appurtenances. With all these and other like powers, scarcely less than sovereign, there are still some who sternly persist in calling it a private corporation

and in inveighing against any partnership of the United States with private owners of the stock of such a corporation. The point is not well taken, because it is not true. Even if it were true, it would not be a worse form of interested concern in a private business than is the encouragement and protection given by acts of Congress to the manufacture of whisky in order that revenue may be gathered from its manufacture and its sale under Government license and regulation.

"The ownership of stock in this corporation is the sole method in sight, or in contemplation, by which the United States can exert an influence over the operations of this canal for the protection and benefit of the Government and people of the United States otherwise than by forcible or hostile intervention with the nations or the powers that will control it.

"I assume, upon the basis of experience, as well as that of unassailable logic, that it is necessary for the security of commerce, and, consequently, of the peace of the great maritime powers, that the Suez Canal and the Nicaraguan Canal should be under the care and protection of some great maritime nation. The Suez Canal is under such care from Great Britain, to which the acquisition of the island of Cyprus and the occupation of Egypt are auxiliary supports. The other powers will always see to it that the uses of the canal by neutrals shall be without unfair discrimination. The United States can neither have nor properly desire nor have need for any exclusive power over the international uses of this canal for commercial purposes.

"In time of war the occupation of these gateways of the oceans will be controlled by military forces, so far as the belligerents are concerned. No treaty can prevent that condition or provide against it in advance. In a war with Great Britain all treaty requirements as to the canal at Sault Ste. Marie and the Welland Canal would vanish at the sound of the first gun. But in times of peace the rights of nations are to be preserved in the Nicaraguan Canal by the power of the countries that own it. In this duty the United States will exert its authority with the firm and just impartiality that becomes its character as a great republic, having no entangling alliances with European or Asiatic powers.

"I also assume that this canal will be built only through the assistance of a subvention from some great nation.

"As an investment it is sufficiently attractive to draw the capital needed from private sources. But the canal is so thoroughly within the influence of international politics—diplomacy, in other words—that no private company and no weak power can give to investors the security of the advantage of permanent operations necessary to their prosperity. The obligation of the United States to protect this canal is not increased by the fact that it becomes a stockholder. We send troops to Panama to protect a railroad in which the United States has no property rights.

"It must therefore be built under the fostering support of some strong government. The Suez Canal, though much money was raised from private subscriptions to build it, was projected, conducted, and protected under the direct de-

crees of the Khedive of Egypt, confirmed by the firman of his suzerain, the Sultan of Turkey.

"The original stock subscription was 397,438 shares of 500 francs each. Of this sum the Khedive of Egypt took 176,602 shares, nearly half the entire stock, and gave the right to the company to demand from the Government the labor of the fellahin, or native laborers, at the rate of 1½ to 2 francs per day, with a ration of 1 piaster a day, or 4½ cents in rice, sorgo, dates, and onions. At one time more than 25,000 of these people were at work on the canal.

"The British Government afterward, in November, 1875, bought the shares of the Government of Egypt for £3,976,582, and now has the financial and military control of the entire canal. This canal was built under concessions to De Lesseps and a company he was authorized to form under a decree of the Khedive, similar to that formed under the laws of the United States by the Maritime Canal Company, but not nearly so well guarded nor so just. The Khedive, in the first concession, retained the power to name the director of the company, in the Egyptian Government, chosen as far as possible from those most interested in the undertaking, and he also reserved to the Egyptian Government, yearly, 15 per cent. of the net profits shown in the balance sheet of the company.

"This concession also provided that on the expiration of the concession at the end of ninety-nine years the Government (not the Khedive) was to succeed to the company, enjoy all its rights, and enter into full possession of the canal. The same provision is in the concessions of Nicaragua and Costa Rica, with the option to the canal company to extend the period to another term of ninety-nine years.

"The Egyptian concession also provided that no alterations could be made in the statutes of the company (its by-laws and regulations) without receiving the previous approbation of the viceroy.

"The Suez Canal being entirely within Egyptian territory, it is difficult to conceive of a case of more complete governmental control than was in that case exercised over the canal in all its stages by the Government of Egypt. These facts correct the assertion, sometimes made, that governmental control over such enterprises is not necessary, and has not been exercised in the case of the Suez Canal.

"If the Nicaraguan Canal were built independently of the United States, with private capital alone, the only legal power left to us to control the conduct of the company is the power reserved to amend or repeal the charter. The concessions made by Nicaragua and Costa Rica belong to the Maritime Canal Company, and are not amenable to the power of the United States until the consent of the owner is given. That company can sell these rights to whom they please, except to some government, and the repeal of the charter would only dissociate the United States from all control of the canal, and force the owners to go elsewhere for the corporate authority contemplated in the concessions, which they can now freely do, without any lawful power in Congress to prevent them.

"It is evidently true that unless this canal is built with the aid of a subvention from the

United States we must abandon the hope of opening this water way until we are prepared to acquire from Nicaragua and Costa Rica such dominion in their territories as we refused under the Frelinghuysen-Zavala treaty, for the reason, as I believe, that the Senate was apprehensive that such a footing in Nicaragua as we acquired by that treaty was violative of the provisions of the Clayton-Bulwer treaty.

"So the future is hedged in, the past is irrevocable, and we must act now or abandon the canal to its fate.

"To abandon this canal now, when the door to its success stands so invitingly open, is a responsibility that I am unwilling to assume, and is a dereliction that I fear our people will not forgive. The present situation, that separates our coasts on the Pacific and Atlantic Oceans by 15,000 miles of dangerous navigation, which can be overcome or lessened by two thirds by the investment, at a profit and without danger of loss, of \$70,000,000 of our credit, will become a lasting discredit to this generation if we do not at least attempt to alter it.

"The shortening of our coastwise line of traffic between the Atlantic and Pacific States would alone demand the expenditure of such a sum without the hope or expectation of other advantage to come from it. We have taught the Oriental nations the use of naval power in great steamships of war, and so formidable are they upon the ocean that it becomes us to duplicate our navy in the Pacific Ocean. The trade of that ocean is eagerly sought after by all the great maritime powers, and the completion of the Siberian Railroad, now well advanced by Russia, will make our interests in the West as important as they are in the Eastern waters. We already have more need of fleets in the Pacific than in the Atlantic Ocean. With this canal we could move our ships of war upon short lines with abundant fuel, and concentrate a fleet in three weeks upon our western coast that we could not assemble in three months by doubling Cape Horn.

"In case of war with any transoceanic power we could certainly occupy the canal or the adjacent waters sooner than they could. Our proximity to and interest in the canal would give to us a moral power in this hemisphere that would keep the peace in all America against domestic turbulence and foreign assault. Our just influence in the commerce of the Western Hemisphere would then speedily ripen into richer harvests of profitable trade than all that we now enjoy. New York would then become the commercial clearing house and mart of exchange at least for American merchants, if it did not find that in its march to the west the empire of commerce would establish its throne in that metropolis.

"Here this great subject widens until it seems to comprehend the advancement of every American interest, and to arouse the proud hopes of every American citizen. The general welfare of all America will be advanced with a mighty progress by this canal. With one accord, in every quarter they raise their hands in imploration to Congress, and with united acclaim they demand that we shall work while it is yet day for this great national blessing.



"This subject is so national and so international in its character that it has never been dwarfed to the character of a mere party question. The national conventions of both the great political parties of the country since 1856, and our Presidents and great statesmen long before that time, have been anxious for this work to begin. As our territory has expanded to the westward, it has become the earnest desire of every patriotic and impartial American. The first report upon it, made to the Senate, was unanimous, and the Senators who made it were from Maine, Vermont, Oregon, Louisiana, Alabama, Georgia, New York, and two from Ohio of different political parties. That bill was far less restricted than the bill now before the Senate. Further consideration and stronger pressure upon the owners of the concessions to meet objections that have been urged against the measure as being a means of enriching the promoters of the canal have induced their harsher treatment.

"I will state again that this measure had its origin in no request of the owners of these concessions for Government aid, or for any form of legislation. It originated with a resolution of the Senate, which was addressed to the inquiry whether the canal was being built by the Maritime Canal Company at a cost that would necessitate too heavy a burden, in canal tolls, upon the industries and commerce of the country. The inquiry developed the fact that this apprehension was true; but that it resulted from the fact that no set of individuals could obtain from capitalists so great a sum of money on the credit of the canal company and its property without heavy rates of interest and large issues of bonds, backed by large issues of its stock. All this was the usual course of business in enterprises of such magnitude. No such work could be done without such sacrifices. There was not, and could not be, any dishonesty or reckless speculation in the matter.

"It was obvious to all that the power of Congress to amend or repeal the charter, if exercised in hostility to the Maritime Canal Company, would wreck the company, destroy the enterprise, force the forfeiture of the concessions, and lose to our citizens as much as \$4,000,000 actually expended, besides great personal risks they had incurred on account of the canal and a vast amount of labor performed by many of our first citizens. It was equally obvious that our intervention in the matter would seriously affect the credit and prospects of our own people in this great work unless Congress should agree to substitute the credit of the United States for that of the company and give to the Government the powers of a holder of a majority of the stock and a majority of the directors in the corporation.

"This plan could not be carried out until the company should cancel every outstanding contract and obligation connected with the canal except the concessions.

"This precedent necessity created a difficulty that the Maritime Canal Company found it hard to meet. But they undertook to make provision for it in a way that is highly creditable to their patriotism and in keeping with an honorable ambition to accomplish this grand work, in which our whole people have a just

pride and the hope of great national growth in power."

Mr. Turpie, of Indiana, led in opposition, and took up the various probabilities as to the engineering and commercial success of the enterprise; as to the policy and right of Government aid, he said:

"Mr. President, I am heartily in favor of the construction of a Nicaraguan canal, or of any other navigable highway which shall traverse the American isthmus. I do not think there is a member of any legislative assembly in Christendom who will declare his opposition to that enterprise. The execution of such a design has been for centuries the desire of all nations—long wished for, earnestly expected. An aspiration so deeply founded in the heart of mankind has only been matched by the difficulty of its accomplishment. The successful completion of such a work would rival, it would outvie the magnificent achievement of De Lesseps in Egypt.

"The Suez Canal joins only two seas. A very long and sometimes tempestuous voyage through the Straits of Gibraltar to the Straits of Bab-el-Mandeb is a part of the canal journey. The American canal would unite two oceans which girdle vast spaces in the surface of our planet with their mighty floods. There is a certain grandeur even in the conception of a design so stupendous. It appeals as strongly to the imagination as it does to the judgment of mankind. We may fancy we see the revisiting shade of Columbus standing upon some lofty peak of Darien, looking with calm, earnest eyes upon the shining stream flowing in unbroken course from shore to shore, and exclaiming: 'This, at last, is the way to the Indies, to the pearl-bearing Orient, to the El Dorado of far Cathay!'

"Mr. President, enterprises of such great pith and moment require for their execution means, but I do not refer now in this part of the argument to funds or money. They require ways and means and methods of prosecution and of progress—ways in which the intention and purposes of promoters may find a legalized form, embracing concessions, treaties, legislation, acts of Congress.

"I do not regard the pending bill as furnishing any means for the accomplishment of this enterprise; I do not regard it as tending to promote the prosecution to completion of the isthmian canal. I regard it, whether designed or undesigned, as one of those measures which will assuredly lead to another failure—I think the fifty-first failure—of concessions granted for the building of this canal.

"One of the objections to this form and method—it is only an objection to the scheme of the bill—is that I entertain very great doubts, very grave doubts, with respect to its constitutionality. It is a very childish, puerile, trivial question to ask, 'Is there anything in the Constitution which forbids this?' The proposition in the bill is that the United States shall indorse and guarantee the payment of the principal and interest of certain bonds of a corporation, and it is asked, 'Is there anything in the Constitution of the United States forbidding this?' There is not, sir. But I think the material question should be, Is there anything in the Constitution

of the United States allowing this, or permitting it, or authorizing it?

"No; there is no inhibition in the Constitution of the United States against such a measure as this. There is no inhibition in the Constitution of the United States against the Government indorsement and guarantee of the note of any individual—Mr. Warner Miller or Mr. Menocal. There is just as much authority in the Constitution of the United States to indorse and guarantee an individual note as there is to indorse and guarantee the bonds or notes of any corporation. I do not think there is any power granted in the Constitution, and therefore I do not think there is any authority in Congress, to indorse and guarantee the paper of a corporation, public or private, or of any individual, either in his official or personal capacity. I am certain there is not. There is not any provision even looking to that or contemplating such an indorsement and such a guarantee; and yet, as I have often said, and as I heard a Senator upon the other side of the Chamber say this afternoon this is a Government of limited powers. The silences of the Constitution are as obligatory as its utterances, whether of grant or inhibition, and when the Constitution does neither permit nor allow, nor deny nor disclaim powers such as are named in this bill, when it is altogether silent with respect to such powers, they do not exist. Powers not granted expressly and not necessarily implied have no existence.

"May the Government, then, for any purpose indorse and guarantee the bonds or notes of a corporation? If it may, the Government may then indorse and guarantee the bonds of any State. There would be a great deal less risk, to say the least of it, in indorsing the bonds of any State of this Union than in indorsing those of a private corporation, such as the one named in this bill. How would you institute a comparison between the credit and resources of the great State of New York, of Massachusetts, and of others I might name, and the credit and resources of this corporation, confessedly bankrupt and now in the hands of a receiver?

"Are we looking for investment? I do not know of an instance in which any State in the Union has come to the Government—I know my State did not—and asked what this corporation does, that the United States will indorse and guarantee the payment of its paper. I know the State of Indiana suspended payment once, then resumed, then suspended, then paid again, and continues to the present day in a state of solvency. That large indebtedness was made for the building of a canal, and the State's paper was dishonored for a long time and its credit suspended, but we never thought of coming to Washington to secure a guarantee.

"The learned and honorable Senator from Alabama said the other day that the United States had all the national and international powers of any other nation on the earth. I have no doubt of that. She has all, and no more; she has no greater than Switzerland, no greater than the Republic of Monaco; but what has national and international power to do with this indorsement and guarantee of the Nicaragua Maritime Canal Company's bonds? They have no relation whatever to foreign affairs. It is a most ordinary business transaction; it is just like

this: A merchant in New York, having failed, being embarrassed and in doubtful circumstances, wishing to establish a line of credit in another and new enterprise, gets a merchant in Washington, of full resources and of full credit, to indorse his paper and guarantee the payment of it. It is a plain commercial transaction, and has nothing to do with foreign relations, and nothing to do with national or international powers.

"This bill proposes to make \$70,000,000 of commercial paper, bonds issued by the company named in it, and these are to be indorsed by the Government of the United States and guaranteed by that Government."

The bill was amended in a few trifling details and on Jan. 25, 1895, the Senate passed it by the following vote:

YEAS—Aldrich, Allison, Burrows, Butler, Cameron, Chandler, Cullom, Faulkner, Frye, Gallinger, Gibson, Gorman, Hale, Hoar, Hunton, Lodge, McMillan, Manderson, Mitchell of Oregon, Morgan, Murphy, Platt, Power, Pritchard, Proctor, Pugh, Ransom, Squire, Walsh, White, Wilson—81.

NAYS—Allen, Blackburn, Blanchard, Caffery, Call, Cockrell, Daniel, Davis, George, Gray, Hill, Irby, Jones of Arkansas, Kyle, Mills, Palmer, Peffer, Pettigrew, Turpie, Vilas, Wolcott—21.

NOT VOTING—Bate, Berry, Brice, Camden, Carey, Coke, Dixon, Dolph, Dubois, Gordon, Hansbrough, Harris, Hawley, Higgins, Jones of Nevada, Lindsay, McLaurin, McPherson, Martin, Mitchell of Wisconsin, Morrill, Pasco, Perkins, Quay, Roach, Sherman, Shoup, Smith, Stewart, Teller, Vest, Voorhees, Washburn—33.

The measure was reported to the House of Representatives by the appropriate committee, but never got beyond that point of progress.

The Senate, however, inserted in the sundry civil appropriation bill a grant of \$20,000 for the expenses of a Government commission to examine the canal route and report to the President. The commission was duly appointed after the adjournment of Congress, one member representing the army, another the navy, and a third the American Society of Civil Engineers.

**Miscellaneous.**—The following measures were passed:

To extend the jurisdiction of justices of the peace in the District of Columbia and to regulate proceedings before them.

For the relief of sufferers by the wreck of the United States steamer "Tallapoosa."

Providing for an additional circuit judge in the Ninth Judicial District.

To authorize the appointment of women as school trustees in the District of Columbia.

To provide that all persons employing female help in stores, shops, offices, and manufactories in the District of Columbia shall furnish seats for the same when not actually employed.

For referring outstanding claims against the District of Columbia to the Court of Claims.

In reference to a free zone along the northern frontier of Mexico and adjacent to the United States.

To authorize the Secretary of the Navy to certify for restoration to the public domain lands in Alabama and Mississippi not needed for naval purposes.

To regulate navigation on the Great Lakes and their connecting and tributary waters.

To authorize the appointment of cadets to the Naval Academy.

To provide special rules for the navigation of rivers, harbors, the Great Lakes, and inland waters of the United States, supplementary and amendatory to the act of Aug. 19, 1890, entitled "An Act to adopt regulations for preventing collisions at sea."



To provide for the measurement of vessels.

To amend further section 9 of the act for the relief of certain volunteer and regular soldiers of the late war and the war with Mexico passed March 2, 1889.

To permit the use of the right of way through the public lands for tram roads, canals and reservoirs, and for other purposes.

To provide for the examination and classification of certain mineral lands in Montana and Idaho.

To disapprove the treaty heretofore made with the Southern Ute Indians to be removed to the Territory of Utah, and providing for settling them down in severalty where they may so elect and are qualified, and to settle all those not electing to take lands in severalty on the west 40 miles of present reservation and in portions of New Mexico, and for other purposes.

To amend section 3 of the act entitled "An Act to regulate the laws of judgments and decrees of the courts of the United States" approved Aug. 1, 1888.

To amend the articles for the government of the navy relative to punishment on conviction by court-martial.

To repeal an act entitled "An Act to amend the laws relative to shipping commissioners" approved Aug. 19, 1890.

To amend the articles for the government of the navy.

To amend the act entitled "An Act to establish circuit courts of appeals and to define and regulate in certain cases the jurisdiction or the courts of the United States, and for other purposes," approved March 3, 1891.

For the promotion of anatomical science, and to prevent the desecration of graves in the District of Columbia.

To amend "An Act to amend section 4400 of Title LII of the Revised Statutes of the United States, concerning the regulation of steam vessels," approved Aug. 7, 1882; and also to amend section 4414, Title LII, of the Revised Statutes, "Regulation of steam vessels."

To protect public forest reservations.

To revive the grade of lieutenant general in the United States army—a measure for the appointment of Gen. Schofield.

For the encouragement of education in Mississippi.

**Appropriations.**—The following table gives the appropriations of the Fifty-third Congress, the total for each session, and the total for all sessions:

TITLE.	FIFTY-THIRD CONGRESS.	
	Extra and first regular sessions, 1895.	Third session, 1896.
Agriculture .....	\$3,223,623 06	\$3,303,750 00
Army .....	23,592,834 68	23,252,608 09
Diplomatic and consular .....	1,563,918 76	1,575,073 94
District of Columbia .....	5,545,678 57	5,745,643 25
Fortifications .....	2,427,004 00	1,904,557 50
Indian .....	10,659,565 16	8,973,948 01
Legislative, etc. ....	21,305,583 29	21,893,222 48
Military Academy .....	406,535 08	464,261 66
Navy .....	25,327,126 72	29,716,077 31
Pension, including deficiencies .....	151,581,570 00	141,381,570 00
Post office .....	87,236,599 55	89,545,997 86
River and harbor .....	11,648,180 00	
Sundry civil .....	34,253,775 55	47,188,860 40
Deficiencies, except for pensions .....	11,811,004 06	9,738,979 19
Total .....	\$390,578,048 48	\$384,634,049 69
Miscellaneous .....	577,956 55	400,000 00
Total regular annual appropriations .....	\$391,156,005 03	\$385,034,049 69
Permanent annual appropriations .....	101,074,680 00	113,073,956 32
Total .....	\$492,230,685 03	\$498,108,006 01
Total for the Congress .....	\$990,338,691 04	

**CONGRESS OF FREE CHURCHES.** The third National (English) Congress\* of Evangelical Free Churches met in Birmingham, March 25. About 500 delegates were present, representing about 5,000 churches. The congress was constituted under the presidency of the Rev. Dr. Berry, Congregationalist, who made an address in which he related the origin and described the programme and the hopes and aims of the body, which was described as a federation of evangelical free churches. The aims of the body were defined as being the exaltation of Christ, the promotion of the New Testament doctrine of the Church, and the liberation of religion from the blighting control of priestcraft and of the Churches from the government of Parliament. A report respecting federations and councils in connection with the congress stated that

when the resolution instructing the committee to promote the establishment of councils was passed a year previously, providing that the conference should consist of representatives of such councils, there were not more than a dozen councils or federations in existence. Now there were nearly 150 councils in towns alone, large and small, touching every part of England. But while it was necessary to realize that this is an age of large towns, the federation movement contemplates the rural districts also. The villagers were awaiting their initiative to devise some method of practical union that should enable them to hold their own against the adverse influences of sacerdotalism and territorialism. Among the practical results of the councils was the house-to-house visitation at Halifax and Birmingham, though Bradford led the way, and united missions had also been promoted. The councils had led crusades against gambling, drink licenses, etc.; they had materially influenced school-board and municipal elections; they had done much to dissipate local ignorance of nonconformist principles and history and to expose the Romanizing tendencies of the Anglican Church. Some councils had become consultative bodies, to which plans of new churches and missions were submitted, and thus the waste of force in overlapping was prevented.

A session of the conference was given to the discussion of the suffering of the Armenians, which were described by a representative of that nationality, after which a resolution was adopted expressing indignation that Turkey had so terribly violated the engagement of the Congress of Berlin, urging the Government to take such steps as are needful to secure protection for the Christians of Armenia, and expressing the conviction that reports of consular authorities in Armenia should be published for the information of the nation. A resolution on the subject of public elementary instruction in England and Wales affirmed

1. That in justice to the parents there should be provided within reasonable distance of every family a school conducted under the management of a school board; and

2. That in order to secure equitable use of public money, effective control on the part of electors ought to accompany all grants made to schools, whether from taxes or rates, we declare our judgment that, in any amendment of the Public Elementary Schools act, these are the two guiding principles which should determine legislation.

The subjects of "Disestablishment," "Modern Biblical Scholarship in its Bearing on Christian Thought and Faith," and "Woman's Power of

Service in the Church" were discussed. A resolution was adopted expressing concurrence with the general proposals of the Welsh Disestablishment bill. Another resolution called attention to the fact that the slave trade still exists in Africa, and sought to impress on the Churches the necessity of interesting themselves in that question. Favorable reports were given of the operations and success in various places of the Pleasant Sunday Afternoon system for men. At Great George Street Chapel, Liverpool, with a weekly attendance of 1,500 members, it had a benevolent fund, ambulance classes, and systematic visitation of sick members. At Leeds the people liked the service because it was short, sharp, and attractive. Resolutions were unanimously adopted in favor of local option and urging legislation to restrict or prohibit the sale of liquor and in favor of international arbitration.

**CONNECTICUT**, a New England State, one of the original thirteen; ratified the national Constitution Jan. 9, 1788; area, 4,990 square miles. The population, according to each decennial census, was 237,946 in 1790; 251,002 in 1800; 261,942 in 1810; 275,148 in 1820; 297,675 in 1830; 309,978 in 1840; 370,792 in 1850; 460,147 in 1860; 537,454 in 1870; 622,700 in 1880; and 746,258 in 1890. Capital, Hartford.

**Government.**—The following were the State officers during the year: Governor, O. Vincent Coffin, Republican; Lieutenant Governor, Lorin A. Cook; Secretary of State, William C. Mowry; Treasurer, George W. Hodge; Comptroller, Benjamin P. Mead; Adjutant General, Charles P. Graham; Quartermaster General, William E. Disbrow; State Librarian, Charles J. Hoadley; Commissioner of School Fund, Jeremiah Olney, succeeded July 1 by Herbert E. Benton; Insurance Commissioner, Burton Mansfield, succeeded July 1 by Frederick A. Betts; Railroad Commissioners, William O. Seymour, reappointed, George M. Woodruff, and Alexander C. Robertson; Bank Commissioners, Edwin A. Buek, succeeded July 1 by Sidney W. Crofut, and Edward R. Doyle; Fish Commissioners, James A. Bill, Samuel M. Bronson, and Richard E. Follett; Shellfish Commissioners, George C. Waldo, reappointed, Charles W. Beardsley, succeeded July 1 by George W. Hallock, and Christian Schwartz; Commissioner of Bureau of Labor Statistics, Robert J. Vanee, succeeded July 1 by Samuel B. Horne; Dairy Commissioner, Comfort S. Burlingame; Commissioners of newly created Board of Mediation and Arbitration, Dwight Loomis, George C. Parsons, and Prof. Arthur T. Hadley; Commissioners of new Board of Highways, James H. McDonald, A. C. Sternberg, and W. R. McDonald; Trustees of newly authorized State Reformatory, Walter Hubbard, George W. Swan, Edward M. Chapin, Prof. John J. McCook, and Frederick A. Speneer; President of State Board of Charities, Dr. A. W. Tracy, Secretary, Miss Mary Hall, Visiting Agent, Rebecca G. Bacon; Secretary of State Board of Education, Charles D. Hine; Inspector of Factories, E. Burrows Brown, succeeded July 1 by George L. McLean; Chief Justice of the Supreme Court of Errors, Charles B. Andrews; Associate Justices, David Torrance, Augustus H. Fenn, Simeon E. Baldwin, and William Hamersley.

**Finances.**—The latest report of the Treasurer, which covers the fiscal year ending Sept. 30, 1894, presents the following figures: Balance to credit of all accounts on Oct. 1, 1893, \$982,091.36; total receipts from all sources during the year, \$2,292,859.62; total disbursements, \$2,339,517.67; balance to credit of all accounts on Oct. 1, 1894, \$935,433.31. The principal receipts were derived from the following sources: Tax on railroads, \$766,420.76; tax on savings banks, \$309,792.16; tax on mutual insurance companies, \$262,452.85; military commutation tax, \$137,223; tax on nonresident stock, \$91,182.12; collateral inheritance tax, \$74,179.07; Commissioner of Insurance, \$62,115.82; tax on investments, \$56,003.88; interest, \$37,469.92; avails of courts and bonds, \$31,822.85; national aid to State homes, \$21,600; Commissioners of Railroads, \$19,860.20; tax on telegraph and telephone companies, \$10,910.83; and tax on express companies, \$9,839.39. The disbursements were divided as follows: Civil-list orders, \$1,564,194.22; registered orders, \$354,902.08; interest on State bonds, \$104,700; and other interest items, \$2,325.89. The funded debt of the State, Sept. 30, 1894, was \$3,240,200; less cash in the treasury to credit of civil-list funds, \$738,418.07; net debt, \$2,501,781.93.

According to the last report of the Comptroller, the total assessed valuation of property in the State on Oct. 1, 1893, was \$416,323,645, an increase in a year of \$35,061,183. The valuation by counties was as follows: New Haven, \$106,429,424; Fairfield, \$101,715,966; Hartford, \$96,716,342; New London, \$37,965,234; Litchfield, \$28,081,896; Middlesex, \$18,901,751; Windham, \$17,993,764; and Tolland, \$8,518,875.

**Education.**—An interesting feature of the report of the State Board of Education, submitted Jan. 23, 1895, is a brief history of each of the free town libraries, with illustrations of most of them and the acts relating to libraries passed during the session of the Legislature of 1893. The report for the school year ending July 14, 1894, shows: Children of school age (four to sixteen years) in the State, 169,457; enrolled in public schools, 136,049; number in average daily attendance, 91,471; average school year, 182.92 days; number of schoolhouses, 1,622; value of all public-school property, \$8,042,411.12; male teachers—in winter 405, in summer 332; female teachers—in winter 3,093, in summer, 3,163; total in winter, 3,498, in summer, 3,495; average monthly wages—male teachers \$85.87, female teachers \$41.48; number of school districts, 1,347; public schools, 1,561; graded schools, 385; high schools, 36; evening schools, 45; normal schools, 3. The sources of public-school revenue were: Permanent funds, \$168,302.04; State taxes, \$254,185.50; local taxes, \$1,713,649.32; and other sources, \$373,592.05; total, \$2,509,728.91. The expenditures were: For new buildings, \$464,107.01; libraries and apparatus, \$18,824.55; running expenses, including salaries of teachers and superintendents, \$1,778,950.79; and other expenses, \$380,745.35; total, \$2,642,627.70. The returns of the school visitors showed that there were 20,981 children registered in private schools in 1894, and 21,460 in 1895.

The permanent invested funds of all kinds on Sept. 30, 1894, aggregated \$3,054,541.34, and the



principal of the school fund proper comprised bonds and mortgages, \$1,701,389.56; real estate, \$113,044.15; bank stock, \$167,147.61; and cash, \$30,186.96; total, \$2,011,768.28. The Comptroller of the school fund reported that present investments of his department were sound. Gov. Coffin, in his message to the General Assembly in January, 1895, alluding to losses on real estate taken by foreclosure, expressed the opinion that the school fund would continue to lose to some extent as long as the State loaned its money.

**Banks.**—The United States Comptroller of the Currency reports the number of national banks in Connecticut, on Oct. 2, 1894, as 83, which had loans and discounts aggregating \$45,782,423. According to the last report of the State Bank Commissioners there were on Oct. 1, 1894, 8 State banks, with combined capital of \$2,340,000; surplus and profits, \$777,385.02; deposits, \$4,494,455.12; and total liabilities, \$8,176,837.72. The assets included loans and discounts, \$4,693,186.66; stocks, bonds, and mortgages, \$1,577,417.86; and amount due from banks and bankers, \$1,104,105.53. There were 91 savings banks, with 337,327 depositors, and \$136,930,350.91 in deposits. During the year 47,404 new accounts were opened, and 45,928 old ones closed; new deposits and interest credited aggregated \$31,481,156.47, and withdrawals \$28,527,175.20; the income of the banks was \$7,201,317.46, and the dividends were \$5,293,047.14. Eleven trust companies had an aggregate capital of \$1,186,600; deposits, \$5,244,275.18; liabilities, \$7,311,050.15; loans and discounts, \$4,394,042.30; and stocks, bonds, and mortgages, \$1,596,067.57.

**Investment Companies.**—The Bank Commissioners reported separately 6 foreign mortgage and investment companies chartered by the State, 15 similar companies chartered by other States and licensed to transact business in Connecticut, and 6 building and loan associations similarly chartered and licensed.

**Savings and Loan Associations.**—The report of the Bureau of Labor Statistics for the year ending Nov. 30, 1894, treats largely of the savings and loan associations of the State. There are 16 such organizations, all but 1 chartered. Fourteen had authorized capital ranging from \$300,000 to \$1,000,000 each, and aggregating \$9,500,000; in 2 the amount was not limited. All organizations had mortgage loans of \$704,523.13; stock loans, \$28,443.84; cash on hand, \$48,285.14; and total assets, \$790,605.02. At the end of the year there were 20,493 shares outstanding, having a maturity value of \$4,108,850.

**Insurance.**—The report of the Insurance Commissioner, submitted Feb. 23, 1895, treats separately of (1) fire, marine, fidelity, and casualty companies, and (2) of life and accident companies. Of the former there were 8 local stock companies, with total paid-up capital of \$10,000,000, liabilities \$27,083,339.14, and surplus \$7,448,618.62; 17 local mutual companies, with liabilities \$379,944, and surplus \$1,283,007.97; 58 stock companies of other States, with paid-up capital of \$30,347,925, surplus as regards policy holders \$56,888,883.83, and surplus over all liabilities \$22,400,866.22; 5 mutual companies of other States, with surplus as regards policy holders \$1,145,200.32, and surplus over all liabilities \$1,045,200.32; and 22 companies of other coun-

tries, with deposits in the United States, \$4,866,000; assets in the United States, \$57,543,344; surplus as regards policy holders, \$17,682,029.10; and surplus over all liabilities, \$13,282,029.10. Of the second class of companies, aggregating 58, 29 carried on a life business on the old-line plan; 16, including 1 which insures live stock, followed the assessment plan; and 13 did an accident business exclusively, and 3 life companies partially. Twenty-four companies were joint-stock, 34 mutual, 12 had State charters, 44 were chartered in other States, and 2 belonged to London, England. On Dec. 31, 1894, excluding the industrial policies, there were in force over 36,000 policies on the lives of people of the State, carrying nearly \$75,000,000 of insurance, about one third in number and amount being held by companies chartered by the State.

**Railroads.**—The total single-track length of railroads is 2,583.45 miles. The outstanding capital stock of the corporations on June 30, 1894, was \$90,006,840.88; bonded and other indebtedness, \$54,253,976.85; gross earnings of the year, \$32,444,313.38; operating expenses, \$23,315,520.56; net earnings, \$9,128,792.82; dividends, \$4,572,573.50; taxes paid to the State, \$733,447.36; value of all railroad property, \$159,633,825.61.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of the calendar year 1894: Corn, 45,299 acres, 1,404,269 bushels, value \$954,903; oats, 23,502 acres, 606,352 bushels, value \$260,731; rye, 16,098 acres, 207,664 bushels, value \$134,982; buckwheat, 3,956 acres, 64,878 bushels, value \$43,468; tobacco, 6,713 acres, 10,176,908 pounds, value \$1,628,305; potatoes, 26,012 acres, 2,054,948 bushels, value \$1,397,365; and hay, 517,699 acres, 450,398 tons, value \$7,008,193; total value, \$11,427,937.

**Live Stock.**—In January, 1895, the United States Department of Agriculture estimated the number and value of farm animals in the State as follows: Horses, 43,478, value \$2,660,304; milch cows, 137,582, value \$4,042,159; oxen and other cattle, 73,042, value \$2,085,891; sheep, 37,934, value \$123,243; and swine, 52,172, value \$603,940; total value, \$9,515,537.

**Factory Inspection.**—During the year ending Nov. 30, 1894, the Inspector of Factories examined or caused to be examined 1,154 factories and places where machinery was used, an excess of 678 of the number examined in the preceding year, and of 665 of the number ever examined in a single prior year. In 379 of the establishments visited the conditions as respects safety to the life and health of those employed therein were entirely satisfactory, and in the remaining 775 it was considered necessary to order a total of 1,789 changes, 1,450 to insure greater security against accidents, and 339 to promote the health of the operatives.

**Periodicals.**—The newspapers and periodicals number 213, of which 43 are daily, 1 semi-weekly, 113 weekly, 2 biweekly, 2 semimonthly, 44 monthly, 2 bimonthly, and 6 quarterly publications.

**Legislative Session.**—The General Assembly, which adjourned on July 9, had the longest regular session on record since 1887, when biennial sessions were established. Among its acts

are the rejection of the Australian ballot system; modification of the present ballot law; legalizing the use of ballot machines in town, city, and borough elections; passage of a corrupt-practices act; establishment of a State reformatory on an initial appropriation of \$50,000; extension and strengthening of the criminal laws; prohibition of the sale of falsely marked food articles and candy, and of false marks concerning the purity of gold and silver articles; passage of several amendments to the insurance laws; abolition of days of grace and making Saturday afternoon a bank half holiday; improvement of the jury system by a law designed to weed out professional and incompetent jurors; repeal of the peddlers' license law of 1893; raising the age of consent from fourteen to sixteen years; grant of a city charter to Putnam, making it the eighteenth city in the State; defeat of an antilobby bill; creation of a highway commission; defeat of a bill to extend woman suffrage to all local elections, also of one to deprive women of the right to vote in school-district meetings; fixing uniform license fees; and prohibition of the crossing of steam and electric railroads at grade.

**Constitutional Changes.**—A compilation of the Constitution and its 28 amendments was adopted in the form of a constitutional amendment. This amendment codifies the organic law with all the amendments between 1828 and 1886, and will go to the General Assembly of 1897 for approval.

**Political.**—Town elections were held on Oct. 7, with only local affairs at issue. The returns showed slight Democratic gains over the vote of 1894, and a considerable decrease in the vote of women.

**COREA.** (See KOREA.)

**COSTA RICA**, a republic of Central America. The Congress is composed of a single Chamber of 21 Representatives, elected for four years by electoral colleges chosen by all respectable citizens. Elections for one half the members take place every two years. The President is elected for four years in the same manner.

Rafael Iglesias was elected President for the term ending May 8, 1898.

**Area and Population.**—The area is estimated officially at 23,000 square miles. Geographers make it 20,980 square miles. The population, according to the census of Feb. 18, 1892, was 243,205, consisting of 122,480 males and 120,725 females. The actual population was believed to be about 12 per cent. greater. There were 3,500 uncivilized Indians. The number of marriages registered in 1891 was 1,000, and of births 7,684; but the registration is not complete. The number of deaths was 8,489. The immigration was 6,330, and emigration 3,706.

**Finances.**—The revenue for the fiscal year 1893-'94 was estimated at 4,800,000 silver pesos, and the expenditure at 4,741,840 pesos.

A compromise was effected with the foreign creditors in 1887, in accordance with which £2,000,000 sterling of new obligations were issued bearing 5 per cent. interest. This debt was assumed by the Costa Rica Railway Company. The internal debt amounted in 1892 to 2,811,100 pesos.

**Commerce and Production.**—Coffee planting is exceedingly profitable in Costa Rica, the

quality of the product being very high. The plantations have been rapidly extended. The cultivation of the banana is increasing likewise. In 1893 the coffee crop was 197,349 bags. Of bananas, 1,278,647 bunches were produced. The yield of sugar in 1891 was 162,804 quintals. Other crops are corn, rice, wheat, and potatoes. The gold and silver mines produce about 128,000 pesos a year. The total value of the imports in 1893 was 5,833,427 pesos, and of the exports 9,619,064 pesos. The values of the chief exports were: Coffee, 8,304,930 pesos; bananas, 786,493 pesos; hides and skins, 138,431 pesos; cedar, 98,891 pesos; other woods, 87,640 pesos. Of the coffee exports, 4,586,870 pesos went to Great Britain, 1,954,298 pesos to the United States, and 1,713,536 pesos to Germany. Of the total imports, 1,697,944 pesos came from Great Britain, 1,399,615 pesos from the United States, 1,123,836 pesos from Germany, and 807,761 pesos from France.

The development of the coffee country has made Costa Rica not only one of the richest agricultural countries for its size, but one in which wealth is most evenly distributed. Most of the peons who used to work on large plantations have taken up Government land and planted small patches of coffee trees. Labor has therefore become scarce for employing planters, and the prices of food are very high.

**Navigation.**—There are only 3 merchant vessels owned in Costa Rica, of 846 tons, 2 being steamers, of 528 tons. There were 356 steamers, of 420,811 tons, and 22 sailing vessels, of 10,673 tons, entered at the ports of Limon and Punta Arenas during 1893.

**Communications.**—The railroad from Limon, the Atlantic seaport, to Alajuela, 147 miles, is ultimately to be connected with the railroad that is being built from Punta Arenas, on the Pacific, of which 14 miles have been finished and are in operation.

The telegraphs have a length of 630 miles. The number of dispatches in 1891 was 223,231. The post office carried 838,051 domestic and 752,686 international letters and other mail matter.

**CUBA**, a colony of Spain in the West Indies. The Governor General is assisted by a Council of Administration, the members of which are appointed by the Crown. The colony sends 16 representatives to the Senate and 30 to the Congress in Madrid. The Governor General, or Captain General, in the beginning of 1895 was Gen. Emilio Calleja. The military forces are restricted on the peace footing to 20,414 men of all arms.

**Area and Population.**—The island has an extent of 41,655 square miles, with a population estimated in 1887 at 1,631,687 persons, 882,600 males and 749,087 females. Havana, the capital, had 200,448 inhabitants; Santiago in 1892 had 71,307 and Puerto Principe 46,641.

**Finances.**—The revenue for the year 1893-'94 was estimated at 24,440,759 pesos, of which 11,375,000 pesos came from customs, 7,249,500 pesos from direct and indirect taxes, 3,104,000 pesos from the public lottery, 2,174,659 pesos from stamps, 399,000 pesos from public property, and 138,600 pesos from other sources. The budget of expenditure was 25,984,239 pesos, of which



12,574,485 pesos were for the debt, 5,904,084 pesos for the military, 4,015,034 pesos for the interior, 1,056,831 pesos for the naval force, 991,832 pesos for justice, 736,045 pesos for public works, and 705,928 pesos for finances. The debt is reckoned to be over \$180,000,000.

**Commerce and Production.**—Of 718,204 tons of sugar exported in 1893 the United States took 680,642; the total product was 815,894 tons. The export of molasses to the United States was 7,654 hogsheads. Of 9,308 pipes of rum exported 2,756 went to Spanish-American countries. The quantity of tobacco exported was 227,865 bales; the number of cigars was 147,365,000, and of cigarettes the export was 39,581,493 packages. Two thirds of the raw tobacco and nearly half the cigars went to the United States. Other exports are mahogany and other woods, honey and wax, and fruits, and of minerals, iron, manganese, and copper. The official value of the total exports in 1892 was 89,652,514 pesos. The imports were valued at 56,265,315 pesos, of which 18,553,307 pesos came from Spain, 16,245,880 pesos from the United States, and 13,051,384 pesos from England. The largest imports are flour, rice, and jerked beef.

**Communications.**—There are 1,000 miles of railroad in operation, besides private lines running to the large sugar plantations. The length of telegraph lines is 2,810 miles; the number of messages in 1892 was 298,416. The number of vessels that entered the ports of Havana, Santiago, Cienfuegos, Trinidad, and Nuevitas in 1893 was 1,953; tonnage, 2,384,263.

**The Reform Bill.**—Ever since Spain lost her colonies on the American continent the Cubans have striven to gain their independence. Besides the slave insurrections of 1812, 1814, and 1848, revolutionary wars broke out in 1830 and 1868. The latter was protracted ten years and cost Spain 300,000,000 pesetas and 100,000 men, most of them victims of yellow fever. When slavery was abolished in 1880 fresh disturbances ensued. The majority of the slaveholders, who received no compensation, joined the party of independence. The introduction of the Spanish Constitution in 1884 brought little improvement, and material conditions have since then grown worse, owing to the decline in the price of sugar. The failure of the Spanish Government to renew the treaty of reciprocity with the United States, thus closing the natural market for the island, aggravated the evils, and when, instead of seeking another outlet for their products, Spain closed her own markets to the Cubans by the imposition of high duties upon sugar, alcohol, coffee, cacao, and tobacco, the people of all parties in Cuba were exasperated.

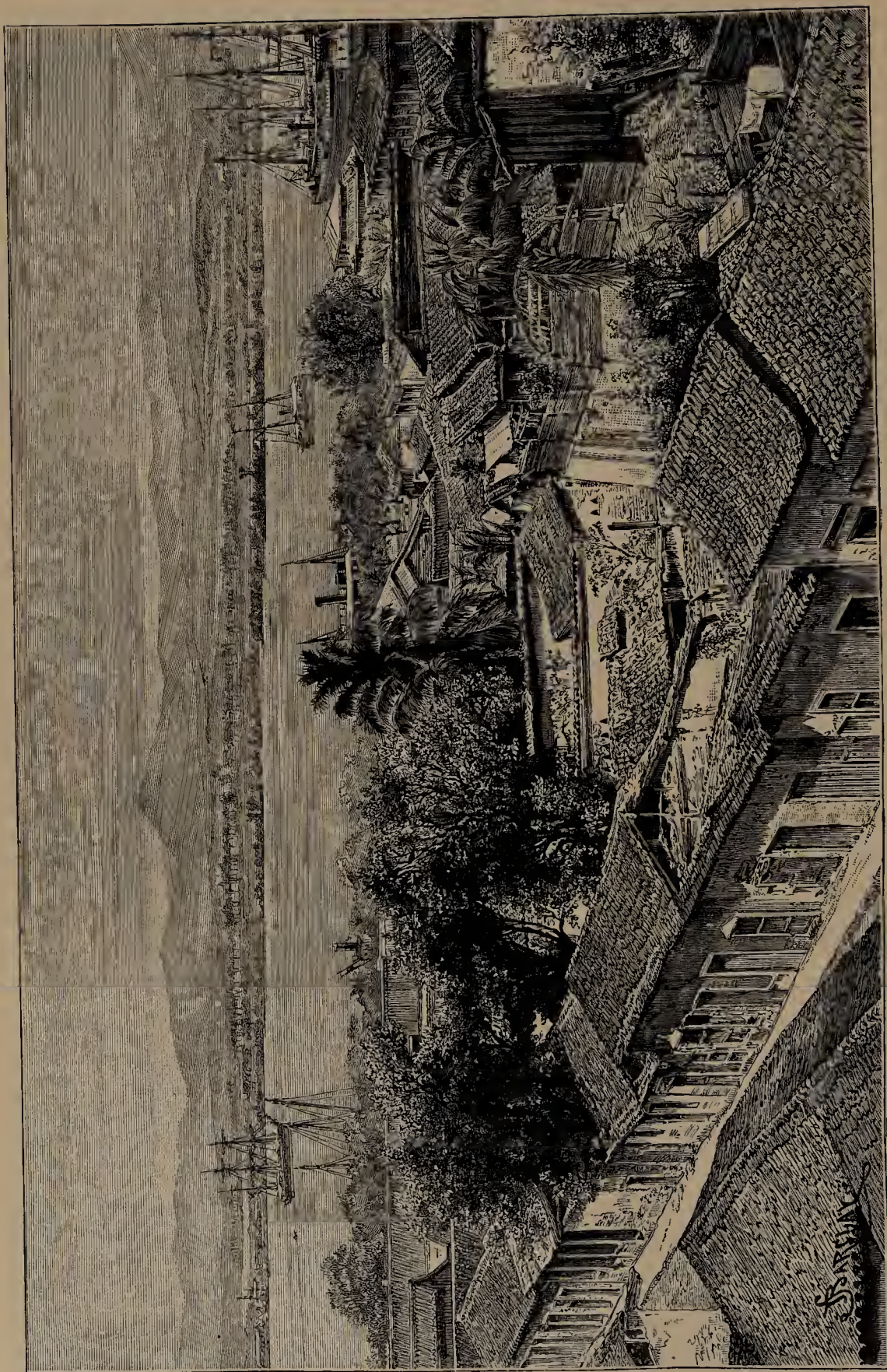
The Cuban exiles in Key West, New York, and other cities of the United States, and in Costa Rica, Honduras, Santo Domingo, and other parts of Spanish America, have been planning a new uprising for several years. The desire of the Cubans for national independence has been quickened by what they have suffered from Spanish misgovernment. Shut out from all control over their own affairs, they are burdened by an enormous public debt and crushed by taxes and Spanish protective duties. In addition to \$28,000,000 of state taxes, they pay \$11,000,000 a year in municipal taxes for the

support of officials, soldiers, and police who oppress them. The offices are the spoils of Spanish politicians, civil and military, whose only interest in the country is to obtain riches, and whose administration has been so tyrannical, rapacious, and corrupt as to call for frequent investigations, and many offenders have been dismissed, without checking the evil. Emilio Calleja, who had been sent out as Governor General because he was an eager advocate of Cuban reform, accomplished nothing in the way of eradicating the abuses under which the Cubans groaned.

No Spanish politician has been found who would propose the granting of independence or the cession of Cuba to the United States. Previous to the American war of secession proposals were made to purchase the sovereign rights of Spain for \$120,000,000; but the suggestion was treated as an insult, and almost led to war between Spain and the United States. When overtures were renewed in 1889, Sagasta said there was not enough gold in the world to buy the island. There are two parties among the Cubans, the party of Cuba Libre, ready to fight for independence because it can only be achieved through revolution, and the Autonomists, who desire home rule such as is enjoyed by the Canadians. Autonomy has been promised in various forms, but every legislative proposal has failed, owing to the resistance of the patronage dispensers and the dominant coterie in Cuba. When the Liberals were at last won for radical reform, the Conservatives resisted. Maura, in 1894, as Colonial Minister, brought in a bill to unite the six provincial councils so as to form a legislative body, with which was combined an executive or state council to carry out its enactments, the latter consisting of 30 members, half of them to be appointed by the Crown and half elected by the Cubans. His bill was lost, and he resigned; but later the Conservatives felt compelled to take up the project in a modified form. In November Maura was recalled to the ministry, and a new bill was submitted to the Cortes. The new plan was not to have a centralized parliament, but to confer on the existing provincial councils extensive legislative powers in regard to commerce, communications, public works, immigration, and the like. The Central Executive Council was retained, to be controlled by another body having power to dissolve it, composed of the highest dignitaries of the colony. The project was approved by the almost unanimous vote of the Chamber on Feb. 14, 1895, and by the Senate as well. It did not go far enough to satisfy the Autonomists, while the Separatists regarded it as useless. Ten days after the passing of the bill a revolution broke out in the island.

**The Revolution.**—For two or three years the Cuban exiles in the United States and Spanish-American countries, veterans of the revolution of 1868-'78 and younger champions of a free Cuba, organized clubs, collected a war fund, purchased munitions of war, and laid plans in concert with their compatriots in Cuba for a new struggle for independence. There were 140 revolutionary clubs in North and South America, Cuba, and other West India islands affiliated under the name of the Revolutionary party, ready to support a revolutionary uprising





SANTIAGO, CUBA.



with financial and moral aid. Cuban workingmen in the United States promised to contribute a tenth of their earnings or more, if necessary. There were firearms on the island that had remained concealed since the former war, some had been bought from corrupt custodians of the Government arsenals, and many were smuggled in and hidden away, including 1,000 Mauser rifles. An expedition that planned to sail in the yacht "Lagonda" from Fernandina, Fla., on Jan. 14, 1895, was broken up by the United States authorities. Gen. Antonio Maceo, its leader, with José Martí, the political organizer of the new movement, went to Santo Domingo, where they could confer with the revolutionist leaders living in Cuba.

The plan of the revolutionists was to rise simultaneously in 6 provinces on Feb. 24. The leaders on the island and the organizers abroad had a thorough understanding. The insurrection broke out on the appointed day, but only in Santiago, Santa Clara, and Matanzas. The latter two are comparatively populous provinces, in which the national troops could occupy strategic points and begin effective offensive operations; but in the wooded, mountainous province of Santiago the insurgents knew plenty of hiding places from which they could harass and gradually exterminate the Spanish troops.

Captain-General Calleja had only 15 battalions, or 9,000 troops, though the nominal strength of the forces maintained on the island is from 20,000 to 30,000. These were not enough to garrison the towns, even when re-enforcements arrived, consisting of 4,200 recruits. Thirteen gunboats were maintained in Cuban waters, but of these only 7 were available to guard 500 leagues of coast line, and they were inferior vessels of low speed.

On the appointed day, Henry Brooks, a planter of Guantanamo, raised a band, which was chased by the Government troops, but escaped into the mountains, losing 3 prisoners. In another part of Santiago province Guillermon Moncada took the field with a large band of negro insurgents. In Matanzas, Manuel García, a noted revolutionary leader, recruited men in the vicinity of Aguacato, where he was betrayed into the hands of the Spaniards and killed. Another band was collected at Ybarra, which was surprised by the troops, and 2 rebels were killed. In the same province of Matanzas the troops came upon a quantity of hidden arms. The baggage of passengers from New York was searched for smuggled weapons, and all the available gunboats and revenue cutters were set to guarding the coasts so as to intercept contraband cargoes and prevent the landing of expeditions. The Governor General proclaimed martial law in Santiago and Matanzas. The regular troops were called to arms and detachments were hurried into the two disturbed provinces. Julio Sanguilly, J. Aguirre, and other Cubans who had taken part before in revolutionary movements, were incarcerated in the Cabanas prison at Havana. Many prominent citizens departed for the interior from Santiago de Cuba and Havana or went abroad to avoid arrest. In some places the insurgents were well armed, in others they had only *machetes*. As soon as a band was formed it vanished into the

mountains and swamps, where the troops dared not follow. From safe retreats the rebels made raids upon the plantations of loyalists. Many plantations were denuded of laborers, who ran away in order to take part in this guerrilla warfare. Commander Perico Pérez, who marched with Gen. Lachambre from Santiago with 500 native militiamen to seek the rebels, deserted with his sharpshooters and joined Brooks in his fastness. Soon there were between 4,000 and 5,000 rebels in the field, but they had no experienced leaders yet and were not organized for common action. The exiles had been thoroughly organized by Martí and his associates. In the United States, where the main funds were collected and the munitions were procured, there was a revolutionary committee, of which Gonzalo de Quesada was secretary, and Benjamin J. Guerra treasurer. The most extensive local insurrection occurred at Baire, from which town 500 men went as a deputation to Santiago to present their demands to Gen. José Lachambre, the military commander. Young men of Santiago and its vicinity formed companies and went up into the mountains. The arms and ammunition supplied by the revolutionary committee were landed from small vessels that ran over from West Indian or United States ports and eluded the coast patrol. The committee was supposed to have a fund of \$1,000,000. The expected uprising in Havana did not take place, owing to the inactivity of Julio Sanguilly, who, instead of placing himself at the head of the insurrection, was believed by the Cubans to have betrayed their plans for money. Bartolome Maso, after recruiting a large band in Manzanillo, went into the province of Havana with Amador Guerra and Enrique Cespedes, and attempted to organize the rebellion in the vicinity of the capital, where, however, the revolutionists dared not show themselves openly. The disturbances were confined to the southeastern part of the island. The movement spread into Santa Clara, where Matagas raised a formidable and active force. The Spanish troops under Gen. Luque broke up two bands near Cienfuegos and took 20 prisoners, but fell back before the main body, led by Matagas, who moved toward Colon, his force constantly increasing. Here and in Matanzas the Spanish troops were able to hold the movement in check. In Matanzas a large number of the followers of Antonio Lopez Coloma were surprised and made prisoners on a plantation where they rendezvoused, and some of them who fled with Gen. Juan Gualberto Gomez were caught. The bands that were raised by Guillermon Moncada and by Amador Guerra made their way to the pathless mountains. A lively fight occurred at Jaguey Grande with a band led by one Masseros. The band of Eratin Manero was surprised and many prisoners were taken. A force commanded by Major Capilla marched from Manzanillo against the town of Vequita, and on Feb. 26 attacked 340 insurgents who were intrenched there. In Sevilla the revolutionists under the command of Gen. Guillermon Moncada repelled the attack of 1,500 of Brig.-Gen. Lachambre's regular troops, and subsequently captured a plantation guarded by soldiers. On a plantation near Guantanamo the Spanish guard was captured.

Lieut.-Col. Bax, in seeking for insurgents in the same neighborhood, came upon a large body near Ulloa, which was joined by others led by Henry Brooks and Perico Perez; they were attacked on the flank by the Spanish troops and, lacking ammunition, were forced to retreat. In the first week in March Gen. Barrido captured Baire, taking 47 prisoners, but the town was immediately reoccupied by the insurgents. Gen. Garrich routed a band at Los Negros. The forces of Matagas, who led the rebellion in the central part of the island, met with a fresh reverse early in March, when Joaquin Pedroso and Carlos and Jorge Aguirre surrendered with their followers. Many enthusiastic young Cubans of respectable families who joined the insurgents took advantage of the proffered amnesty and returned to their homes because they found themselves associated with bands of brigands like that of Matagas, or with negroes led by mulattoes. The rising in Santa Clara, an incipient revolt in the vicinity of Holguin, one in Pinar del Rio started by Gen. Azcuy, and finally the rebellion in Matanzas, subsided. Projected movements in Puerto Principe came to nothing. The disturbances were still confined chiefly to the southeastern part of the island. But there 6,000 rebels in arms successfully defied the Government.

A battalion was at once brought over from Puerto Rico, and a force of 7,000 men was sent from Spain. The prefects in all the provinces resigned, and were replaced by military officers. In Havana fresh arrests were made of prominent citizens until Morro Castle was filled with prisoners. On March 7 the Spanish Cortes granted unlimited credit for the purpose of stamping out the rebellion. The civic guard in Havana refused to march against the rebels in Santiago. In the mountains of that province they were invincible. Santa Clara, as well as Santiago and Matanzas, was declared in a state of siege. The Spanish authorities had asserted in the beginning that no rebellion existed, only an epidemic of brigandage. When compelled to admit that they had to deal with a political insurrection they reported daily the capture of some leader and the rout and dispersion of his band. The bands, however, were heard of later, and preparations for the suppression of the revolt took on increasing proportions. Whereas it was thought sufficient in the beginning to send 2,000 men to Cuba, it was decided early in March to dispatch 20,000 troops and to intrust the work to Field-Marshal Martínez Campos, who had gone out in 1876 and brought to an end in 1878 the ten years' revolution, since when he has been known as the Pacifier of Cuba. Martial law was proclaimed over the whole island.

The United States consul general made a demand that Sanguilly, Aguirre, Peraza, and Carrillo, American citizens held as political prisoners, be tried by the civil courts with benefit of counsel, and not by court-martial. The Governor General complained of the consul general, Ramon O. Williams, and asked the Spanish Government to demand his recall. The Government at Washington took every precaution to prevent armed expeditions and vessels from slipping out of American ports to aid the insur-

gents. The Spanish man-of-war "Infanta Isabel" anchored at Key West to watch the shipping there, ready to chase any suspicious craft that put to sea. Minister Taylor in Madrid informed the Spanish Premier that the United States Government would do its utmost to prevent the fitting out of filibustering expeditions.

Two American sailors, August Bolten and Gustave Richelieu, who landed in a small boat in distress and were imprisoned at Santiago de Cuba, were tried by the civil court at the demand of the United States consul and were acquitted of complicity in the rebellion. American citizens of Cuban birth arrested in Santiago secured the benefit of legal trial through the intervention of the consul.

Col. Santocildes had an encounter with insurgents near Guantanamo on March 10. On March 17 Col. Bosch engaged the bands of Perez and Brooks near Ulloa. In Santiago the Government forces were unable to cope with the rebels, who soon occupied and fortified some of the towns and began to levy taxes. Besides the bands of Amador Guerra, Esteban Tomayo, and other guerrilla chiefs, who had about 1,200 men, and the larger forces of Henry Brooks and Quintin Banderas, Jesus Rabi held Baire and Jiguani with 1,500 men and Bartolome Masso had 1,000 men at Manzanillo. On March 22 Masso ambuscaded a convoy south of Holguin and captured arms, ammunition, and commissary stores, and later he inflicted a defeat on Gen. Garrich. The Spaniards under Col. Santocildes met with a more serious reverse at Bayamo, losing 300 men and being saved from annihilation only by the arrival of re-enforcements. On March 24 there was a pitched battle at Jaraguana between 600 infantry and 300 cavalry under Amador Guerra and 1,000 troops commanded by Col. Araoz, who formed his men into a hollow square to meet five charges of the Cuban horsemen, and finally assumed the aggressive, compelling the assailants to retreat.

A commission sent to make terms with the eastern rebels was angrily rebuffed by Gen. Masso, who threatened to execute upon Baptista Sportorno, formerly President of the Cuban republic and now a leader of the Autonomists, his own decree of death to any commissioner proposing terms short of the independence of Cuba. The men of standing were still waiting for the action of the leaders of the movement abroad and would have nothing to do with the rebels in the field whose predatory tactics repelled them.

José Martí and Maximo Gomez issued on March 25, from Monte Cristi, Hayti, the following manifesto:

The war is not against the Spaniard, who, secured by his children and by loyalty to the country which the latter will establish, shall be able to enjoy, respected and even loved, that liberty which will only sweep away the thoughtless who block its path. Nor will the war be the cradle of disturbances which are alien to the tried moderation of the Cuban character, nor of tyranny. Those who have fomented it and who are still its sponsors declare in its name to the country its freedom from all hatred, its fraternal indulgence to the timid Cuban, and its radical respect for the dignity of man, which constitutes the sinew of battle and the foundation of the republic.

And they reaffirm that it will be unanimous



with the penitent, and inflexible only with vice and inhumanity. In the war which has been recommenced in Cuba you will not find a revolution beside itself with the joy of rash heroism, but a revolution which comprehends the responsibilities incumbent upon the founders of nations.

Cowardice might seek to profit by another fear under the pretext of prudence—the senseless fear which never has been justified in Cuba—the fear of the negro race. The past revolution, with its martyrs and generous though subordinate soldiers, indignantly denies, as does the long trial of exile as well as of the respite in the island, the menace of a race war, with which our Spanish beneficiaries would like to inspire a fear of the revolution.

The war of emancipation and their common labor have obliterated the hatred which slavery might have inspired. The novelty and crudity of social relations consequent to the sudden change of a man who belonged to another into a man who belonged to himself, are overshadowed by the sincere esteem of the white Cuban for the equal soul, the desire for education, the fervor of a free man, and the amiable character of his negro compatriot.

In the Spanish inhabitants of Cuba, instead of the hateful spite of the first war, the revolution, which does not flatter or fear, expects to find such affectionate neutrality or material aid that through them the war will be shorter, its disasters less, and more easy and friendly the subsequent peace in which father and son are to live. We Cubans commenced the war; the Cubans and Spaniards together will terminate it. If they do not ill treat us we will not ill treat them. Let them respect and they will be respected. Steel will answer to steel, and friendship to friendship.

On March 31, Antonio Maceo, with Flor Crombet and 20 other officers, including Dr. Frank Agramonte and José Maceo, arrived from Costa Rica with an expedition equipped with rifles and cannon. The Spanish Government sent 5 torpedo gunboats to re-enforce the fleet of 8 cruisers that guarded the coast, but too late to intercept the principal expeditions. Gen. Lachambre's soldiers attacked Gen. Maceo's party in the village of Duaba immediately after it landed at Baracoa, but were repulsed with the loss of 10 killed and 9 wounded. They attempted to intercept the invaders again at Cuchillas and to overtake them at Manzanillo. The British schooner "Honor" that brought them was wrecked, and the crew were taken prisoners by Spanish soldiers, who killed the captain. Frank Agramonte and another American citizen were among the members of the expedition who were taken by the Spaniards. They were kept in prison, and on the urgent demand of the United States consular authorities the Government promised to give them a civil trial.

An attempt was made in Havana to liberate the prisoners in the Cabanas and Morro Castle and to blow up the powder magazine in the harbor. Wholesale arrests were made in the city. Consul-General Williams intervened in behalf of José Carballo, an American citizen, arrested as a spy.

On the arrival of re-enforcements from Spain a large force was sent against Maceo in the eastern province. He was reported to be defeated and hemmed in at Monteverde, near Guantanamo. On April 13 a part of his force sustained a defeat near Palmerito, when by surprise it was surrounded by 3,000 Spaniards, and cut its way through with heavy losses. The commander, Flor Crombet, a revolutionary hero,

was one of the slain; but he was killed by a traitor in his own party, one Rojo, who was afterward caught and hanged by Maceo. Elsewhere the insurgents were aggressively active. Engagements occurred daily, in which the Government forces were usually worsted. The bands raided small towns and held them long enough to replenish their supplies. Rabi thus occupied Victoria de Lastunas, near Puerto Principe; and Caney, near Santiago de Cuba, was captured and the armory plundered, Capt. Ramon Silvester being made prisoner. In Matanzas, Cardenas, and other places the revolutionists resorted to explosives. The resident Spaniards, especially the workingmen, joined the insurgents openly in increasing numbers, or gave them secret aid.

A provisional government was proclaimed by Maceo, with Dr. Tomas Estrada Palma as Provisional President of the Cuban Republic, José Martí as Secretary General and Diplomatic Agent Abroad, and Gen. Maximo Gomez as Military Director and Commander in Chief of the Forces.

Marshal Martinez Campos, who succeeded Calleja as Captain General and commander of the forces, arrived with re-enforcements on April 16 at Guantanamo. On the day following he issued a proclamation pledging himself to carry out all the promised reforms, if supported by the non-Separatist elements. The constitutional parties were the Conservatives and Reformists, composed mainly of Spaniards, and the Autonomists. The leaders of these parties declared in favor of the Government, and as the Autonomists included some of the most prominent supporters of the late revolution, the official attitude of the party was a damper to the revolution. Many respectable citizens belonging to this party now, however, seeing that Campos promised no further reforms than those voted by the Cortes, began to give moral support and material aid to the rebellion, and some of the younger ones armed themselves and went to join the insurgents in the field, or left Havana and the other ports on steamers for the United States or the West India Islands, intending to aid in the fitting out of expeditions, which the Spanish naval force could not stop from landing on the coast. Capt.-Gen. Campos offered pardon to all insurgents who would lay down their arms, except leaders. He appointed Gen. Garrich governor of the province of Santiago, with Gen. Salcedo as commander of the First Division, having its headquarters at Santiago de Cuba, and Gen. Lachambre commander of the Second Division at Bayamo.

The Spanish Cortes authorized the Government to raise 600,000,000 pesetas for the suppression of the rebellion, and decided to increase the force of regular troops in Cuba, of which there were now 22,000, to 40,000, and to get 40,000 more ready to sail in August for an aggressive campaign after the rainy season was over. The raw recruits that came from Spain, mostly boys of eighteen and nineteen, were almost worthless when pitted against the toughened negro guerrillas, who slept on the ground without sickening and subsisted when necessary on the wild fruits of the country. The Spanish commissary arrangements were so defective that the troops could not be moved in any numbers. The con-

voys were attacked constantly, and the provisions destined for the outposts were seized by the insurgents, who even raided the cattle pens in Santiago and drove off the cattle. The starved and ragged Spanish soldiers could not fight men who fired from behind trees, and made off whenever they were pursued. They were only good to garrison fortified posts, and there they perished in great numbers from the malarial fever, and had the prospect before them of the yellow fever. Gen. Campos organized some bands of Government guerrillas to fight the insurgents in their own way. After a while he decided to call into the service the young Spaniards settled in Cuba, who were better acclimated than the raw troops from the south of Spain. These emigrants are released from the obligation to serve in the regular army on the condition of their joining the volunteers or home guards in Cuba, in which many of them held commissions. When they were ordered out to serve in the ranks they were inclined to mutiny. He decided later to send for Lolo Benitez, a guerrilla chieftain of the former revolution, who had been condemned for his cruelties to life imprisonment and was a convict in Ceuta, Africa. This man was pardoned and commissioned a lieutenant colonel in the Spanish army, on condition that he would fight his countrymen with their own tactics, of which he was a master. The Spanish officers in Cuba protested when they learned that this bandit was to be sent into the field at the head of convicts released from Cuban jails.

Maximo Gomez and José Martí, starting from Cape Haytien, landed on the coast southwest of Cape Maysi on April 13 with 80 companions, most of them veterans of the former war. They succeeded in joining Perico Perez, whose band of 1,000 cavalry defeated Col. Bosch on April 16 and again on April 18 at Sabana de Jaibo, where Gomez directed the charge. This force united with Maceo, who assumed command of the operations in the east. With his blacks and mulattoes, inured to exposure and privation, he extended his operations until the whole province obeyed him except the Spanish fortified posts. The planters and traders were forced to contribute under the penalty of having their property destroyed. For provisions and store goods the insurgents usually paid, but horses they took wherever they found them, without giving compensation, and beef cattle too, but they were ordered not to kill cows. Juan Castillo was court-martialed and shot by order of Masso for outrages on citizens. Masso held the Bayamo district, west of Santiago, from the middle of March.

The black miners of Juragua went out under the lead of Floriano Gascon, and on April 21 his band, numbering 500 men, surprised 60 soldiers, commanded by Lieut. Benjamin Gallego, who had been left in the village of Ramon de las Jaguas to guard the mines. Major Tejerizo, whose departure had given the opportunity for the attack, hurried back with his 260 men on hearing the fusillade. Supposing the fort to be still held by Spaniards, he approached near enough to receive two volleys, from which he was disabled and Capt. Miranda killed. The insurgents instantly fell upon the demoralized

Spaniards with their *machetes* and put them to rout. They also attacked in a narrow defile a relief column of 150 cavalry and 400 infantry that came up from Songo. In these engagements over 100 Spaniards were killed. Gascon's band, armed only with *machetes* originally, were now provided with 150 rifles and 15,000 rounds of ammunition. Lieut. Gallego was afterward tried by court-martial and shot for surrendering his command without fighting, as was also another officer of the same name who was convicted of cowardice. Capt. Malla, captured while escorting provisions near Bayamo, was placed under arrest when he returned on parole, but the feeling that had been aroused against such severe penalties kept the authorities from executing any more officers. Gascon and his band joined Maceo, who, with the negroes led by Quintin Bandera and the hardy mountaineers of Perico Perez, had now over 2,500 men at Jarajueca. Gen. Salcedo made extraordinary efforts to catch Maceo. He sent out four columns for the purpose of surrounding him, but he passed through the cordon and retreated safely into the mountains. A still more energetic effort was made to head off Gomez and Martí, but with the aid of their friends they found little difficulty in eluding the guards that occupied all the roads.

On April 29 a detachment of 700 Spaniards was decoyed into attacking José Maceo at Arroyo Hondo, near Guantanamo. He had so disposed his force as to surround and fall upon the Spaniards with three men to their one. They fought courageously and finally cut their way through and retreated, having lost 150 killed and inflicted heavy losses on the enemy. Col. Capello, the Spanish commander who was thus entrapped, was relieved of the command at Guantanamo, being succeeded by Brig.-Gen. Bazan.

On May 6 Maceo's men raided Cristo, burning the bridges of the railroads running to Songo and San Luis and tearing up the tracks. A train bringing troops was derailed, and the troops after they left the train were fired upon from an ambush. The same band of insurgents raided Caney also, and burned buildings.

On May 14 at Jobito, near Guantanamo, 400 soldiers were surrounded by 1,200 insurgents led by the two Maceos. Lieut.-Col. Bosch was killed in the first onslaught, but Major Roblos held the position, repelling successive attacks, until reinforcements came, when the Spaniards advanced and defeated the rebels, who lost 43 killed and wounded, while on the Spanish side 100 were killed and 80 wounded.

A guard of 600 soldiers, while escorting provisions from Santiago to Bayamo, attacked by 800 rebels, fled in confusion, leaving behind the stores and 70 dead and wounded.

A convention was held on May 18 at which delegates representing each 100 revolutionists in the field elected Bartolome Masso President of the Cuban Republic, Maximo Gomez General in Chief, and Antonio Maceo Commander in Chief of the Oriental Division.

Martí intended to embark for Jamaica, while Gomez was about to proceed in the direction of Camaguey, escorted by the forces of Masso. On May 19, while Masso with the bulk of his troops



had gone to intercept a convoy, and Marti had just parted from Gomez, who had 700 cavalry, a treacherous guide directed Col. Sandoval and 800 men to a narrow ravine, where Marti and his staff would be entrapped. The entire party of 50 was annihilated, Marti leading them in a desperate charge, before Gomez arrived. His force was surrounded, and with difficulty fought its way through the Spanish lines. Gomez himself, in an attempt to rescue Marti's body, was wounded, and was helped off the field by Col. Borrero. The Cubans then retreated in disorder, having lost about 50 killed and 100 wounded, while the Spanish loss was 5 killed and 6 wounded. When the revolutionary party, after long doubting, was convinced that Marti was indeed dead it chose Dr. Tomas Estrada Palma to succeed him as the delegate of the Cuban republic to the United States and other foreign countries, and also as president of the party. Manuel Sanguilly was associated with him later as representative of the Cuban cause in the United States.

The insurgents destroyed the village of Palestina by fire on May 12, and burned buildings in Palenque, and on May 14 they fired the property of Spaniards in Dos Caminos. Besides the 3,000 men that Maceo had concentrated in the vicinity of Jarajueca, there were 2,000 under arms in other parts of Santiago. José Maceo had 700 men near Guantanamo, and Maso 500 in the Manzanillo district. The whole eastern country was at the mercy of the predatory bands, which prowled even into the outskirts of the town of Santiago. The troops were afraid of them. Yellow fever broke out among the soldiers sooner than was expected. The numbers of the insurgents were constantly augmented by the accession of respectable whites, who had hitherto held aloof, and of laborers leaving the plantations after the sugar-grinding was done. The total force of the insurgents swelled to 10,000 men, of whom 7,000 were armed with good rifles. Gen. Salcedo, after his unsuccessful campaign against Maceo, in which the unacclimated Spaniards proved themselves unable to fight the natives in the mountains and jungles, decided to pursue defensive tactics till the rainy season was over. As a strategic measure, which would also serve as the means of placating the Cuban people, one of whose complaints was that of all their revenue not more than \$250,000 was actually expended on public works, to deter them from joining the rebellion from patriotic motives, and the laborers, by giving them employment, from going into it for spoils and food, the price of which was mounting to famine figures, Marshal Campos proposed to build a railroad across the island from Puerto Principe to Santa Cruz, another from Manzanillo to Yara and Bayamo, and a third from Guantanamo to Santiago. He also endeavored to persuade the American syndicate operating the Santiago and Moroto Railroad to construct branches from San Luis to Palma Soriano and from Songo toward the interior plateau. And he proposed to make harbor improvements. His promise to the American company that they might import material for the new railroad duty free was vetoed by the Spanish Government, which would not allow them even to

bring in material to repair bridges, tracks, and rolling stock destroyed by the rebels without paying the duties, which are nearly 100 per cent.

The Spanish war expenses for three months were \$10,000,000; the losses by death up to May 21 were 19 officers and 4,846 men.

Gen. Salcedo issued an order on June 5 directing his columns to fire without warning upon any person found out of doors after dark. The French consul protested. The first result of the regulation was that two squads of Spanish troops marching in contrary directions in the outskirts of Santiago fired several volleys at each other, killing and seriously wounding several men.

New supplies of arms and recruits for the rebels were brought into the island by small fishing smacks or larger vessels in spite of the patrolling gunboats. It was said that 6,000 stands of arms were sent to them from New York at various times. Col. Lacret and Col. Mariano Torres landed early in May from Jamaica with 220 men. On May 13 the yacht "Corona" brought 45 men from Georgia. This was said to be the sixth expedition that had arrived from the Southern States. The rebels held constant communications with their friends abroad. Suspecting that American newspaper reporters were bearers of messages, and annoyed at the character of the intelligence that they published, Campos gave orders to shoot any correspondent seen coming from the enemy's lines. Later Salcedo ordered all the newspaper correspondents to leave the island.

A filibustering expedition left Key West, under Gen. Carlos Roloff, Gen. Serafin Sanchez, and Gen. José Maria Rodriguez, on June 5, consisting of 353 men, many of them veterans of the last revolution, with 1,000 repeating rifles and ammunition, some small cannon, revolvers, and 500 pounds of dynamite. An American tugboat, the "George W. Childs," which the revolutionary committee had purchased, and an English schooner conveyed the party, which landed in Las Villas, near Sagua Lachico, on the north coast of the province of Santa Clara. Their landing was protected by the bands of Castillo and Reyes, who had nearly 2,000 men in the district. These forces were organized and armed by Roloff, who assumed the command in Las Villas.

The fitting out of the Roloff expedition in an American port caused the United States authorities to redouble their precautions against filibustering. Several more revenue cutters and the cruisers "Atlanta" and "Raleigh" were sent to Florida and the Gulf. On June 12 President Cleveland issued a proclamation warning citizens and others against taking part in the civil disturbances in Cuba, contrary to the laws of the United States, by accepting or exercising commissions for warlike service against the established Government of Spain, by enlisting or procuring others to enlist in such service, by fitting out or arming, or procuring to be fitted out and armed, ships of war for such service, by augmenting the force of any such ship in the ports of the United States, or by setting on foot or providing or preparing the means for military enterprises to be carried on from the United States against that Government. The British authorities in Jamaica also adopted more strin-



gent measures to prevent the shipping of arms and men. One expedition was stopped, and the arms that were on the coast trader "Pearl" were seized as contraband.

Major Rafael Casallas deserted with 400 men of the cavalry regiment of Camajuani. He had an encounter with the Government troops at San José in the Remedios district of Santa Clara, and during the action he was killed by the treachery of his own men.

Before June bands began to form in Puerto Principe, several of which united under Cas-

efficient abettor of the revolution. Other prominent men were in sympathy with it, as Marcos Garcia, who resigned the mayoralty of Sancti Spiritus.

Gomez took command of the rebels in the province of Puerto Principe, and soon he had a force of 2,000 men, with which he held the southern district. But he was unable with this small army, scantily supplied with munitions, to operate against the fortified positions held by the 10,000 troops of Major-Gen. Pedro Mella, the military governor. Marshal Campos tele-



CHORRERA TOWER ("BUCCANEERS' FORT"), AT THE MOUTH OF THE ALMENDARES, CUBA.

tillo. Others were led by bandit chiefs, such as Nicasio, Mirabel, and Muñoz. Miro and Marrero levied contributions around Holguin. Marshal Campos had a cordon of 4,000 troops thrown across the island to guard every road and path by which Gomez could enter Puerto Principe. Nevertheless he slipped through with 300 men, and, crossing the river Jobabo, entered Camaguey on June 2. His force was immediately joined by 700 men, led by a nephew of Salvador Cisneros, Marquis of Santa Lucia, who was an

graphed at once for fresh re-enforcements, and issued an order for the conscripts of 1892, 1893, and 1894 to report for service. The Spanish Government decided to dispatch at once 10,500 troops, besides 1,500 cavalry already on the sea.

The prosperous planters of Puerto Principe, however much they sympathized with the revolution, were unwilling to invite the vengeance of the legal Government by overt acts of rebellion. On June 18 the province was declared to be in a state of siege.



Gomez, with 600 men, captured the village of Altagracia, not far from the city of Puerto Principe, driving out the small Spanish garrison. He tore up the railroad, and afterward burned a good part of the town, being provoked thereto by the act of a Spanish emissary in the Cuban ranks, who shot his aid, Gen. Panchito Borrero, from behind. Gomez burned the villages of San Geronimo and Elmulato, where he surprised the garrisons. In these places he got 300 Mauser rifles with which to arm his men. He harassed Spanish convoys, captured army stores, and destroyed the railroad bridges. Many plantations were destroyed by irregular guerrillas, several of whose leaders were captured by Col. Alfonso Goulet, commander of the regular revolutionary forces in the district, who issued an order forbidding the violation of property rights under pain of death. The accepted leaders themselves levied money contributions on plantation owners, and if these were not forthcoming they devastated their estates. Plantations were destroyed also for the purpose of cutting off the supplies of Puerto Principe, San Miguel, and Nuevitas, and the roads, bridges, railways, and telegraphs were swept away. The Spanish cavalry, after one encounter in Yaguas, were afraid to meet the Cuban horsemen. In Matanzas the Government was more successful in repressing the revolutionary element, which was not so respectable there as in other provinces. Matagas and Reyes had many encounters with the Spanish cavalry, in one of which the latter was slain.

Several times the filibusters landed arms in the province of Pinar del Rio, but in each case the Government found and confiscated them. One or two attempted risings were put down, as was one in Havana province also; but when the insurrection became general through the eastern and middle parts of the island rebel guerrillas became active in Pinar del Rio.

Marshal Campos endeavored to block the roads by a line of troops from Moron to Jucara in order to prevent Gomez from crossing over to Santa Clara with the rebel army of Camaguey. In that opulent province, whose people gave more support to the rebels, the Government could not hold the revolt in check any more effectively than in Puerto Principe. Lieut.-Col. Velarde reported that he won a victory over 1,000 of Roloff's men who attacked Vega Alta. Zayas, a guerrilla leader who operated in the district of Sancti Spiritus, inflicted a defeat upon a column sent against him at Vista Hermosa, but lost 30 men in a fight with Col. Zamora at Nueva Villa.

In Santiago the Government troops held only the fortified places and failed to protect their lines of communication. On July 1 the rebels lost a dashing fighter in Amador Guerra, who was shot by one of the wounded after he had defeated a band of Government volunteers at Palmas Altas, near Manzanillo. Henry Brooks landed near Portillo with 4 cannon and a quantity of ammunition, which he abandoned to the enemy on being attacked; but, returning with Rabi and 1,500 men on the following day, he regained his own and took the enemy's guns.

On July 2, at Cacao, near Jiguani, in the Manzanillo district, Major Sanchez with 500 fresh troops was beguiled by a false message into a

narrow defile, where the band of Rabi, 1,500 strong, fell upon the Spaniards with their *machetes*, and killed and wounded 270 before they were compelled to retreat by the deadly fire of some of the Spanish infantry, who gained commanding positions. This Spanish defeat frustrated a plan of Gen. Salcedo to close in upon Maceo's camp at San Jorge with the combined forces of Gen. Navarro and Gen. Gasco.

On July 5 Victoriano Garzon and Quintin Bandera, when attacked by 1,250 newly landed troops under Gen. Garcia Navarro at Gran Piedra, demoralized them with rifle fire from cover followed by a *machete* charge, and captured a large quantity of arms and ammunition. In a later attack on this position the same commander was again repelled.

Capt.-Gen. Campos issued a new proclamation on July 7, promising immunity to insurgents who surrendered, while those caught with arms in their hands would be tried by court-martial and shot, and conspirators against the integrity of the nation would be sent to African prisons.

On July 9 there was an encounter between Victoriano Garzon and Gen. Navarro's troops at Avispero, in which the Spaniards lost 25 killed.

Cuban troops concentrated by Maceo in the district of Holguin regularly besieged Bayamo and captured every train of supplies that was sent out. A force of 1,500 men started from Masaino under Marshal Campos and Gen. Fidel Santocildes for the relief of the starving garrison. It was attacked on July 13 at Peralejo, near Valenzuela, by 2,700 insurgents under Maceo, who made an effort to capture Marshal Campos and his staff, in defending whom Gen. Santocildes was killed. The Spaniards were caught in an ambush and surrounded on four sides. After fighting on the defensive for five hours, they broke through the cordon and retreated to Bayamo, the rear guard fighting all the way. The Spanish loss was 7 officers and 119 men killed. The Cubans, who lost 100 men, captured the Spanish ammunition train. Gen. Campos remained in Bayamo until Gen. Suarez Valdez arrived on July 21 with 1,400 men to protect his retreat over the road by which he came. Songo and the other outposts were practically invested by the insurgents, who disappeared from the neighborhood of Bayamo after they had caused the Government to concentrate 10,000 soldiers there.

Ruen and his guerrillas besieged the garrison of the fort at Sabana, and on July 22 reduced the town to ashes in order to force the troops to surrender. They were relieved at last by Col. Zamora from Baracoa, who inflicted a loss of 20 upon the rebels and escorted the garrison away after destroying the fort. The fortress at Baire was besieged and captured on July 20 by Rabi, who paroled the garrison of 60 men after they surrendered. The Spanish troops under Gen. Garrido afterward retook the place.

The Provisional Government was formally constituted in the valley of the Yara, and a declaration of independence was proclaimed on July 15. In a convention held in the Puerto Principe district on Aug. 7 the following officers were chosen: Provisional President of the Republic of Cuba, Gen. Bartolome Masso; Minister of the Interior, the Marquis of Santa Lucia;

Vice-President and Minister of War, Gen. Maximo Gomez; Secretary of Foreign Affairs, with residence in the United States, Gonzalo de Quesada; General in Chief of the Cuban army, Gen. Antonio Maceo; Commander of the Eastern Army, Gen. José Maceo.

The Spanish forces in the middle of July numbered 39,885 regular infantry, 2,596 cavalry, 621 artillery, 415 engineers, 4,400 civil guards, 2,700 marines, and 1,152 guerrillas. The naval force consisted of 15 vessels, to be augmented by 6 that were building in Spain, and 19 that were to be purchased in England and on the Continent. The insurgent strength was approximately 12,000 soldiers under Maceo in the eastern division, of whom 3,000 were cavalry, 4,000 in Puerto Principe, and 5,000 in Las Villas under Gomez, and 3,000 under Roloff and Sanchez in Santa Clara. Of Maceo's army, 7,000 had Remingtons, Winchesters, and Mausers, and most of the others carried revolvers or shotguns, besides their *machetes*. Matagas had 400 men in Matanzas.

The commanders of the Spanish forces were changed in the beginning of August. Gen. José Jimenez Moreno succeeded Gen. Salcedo; Gen. Andres Gonzales Muñoz replaced Gen. Lachambre; and Gen. Arsenio Linares relieved Gen. Gasco. The Spanish Government decided to send 30,000 more troops. The losses by yellow fever and other diseases and in battle had already nearly reached 20,000. Gen. Campos ordered the Spanish volunteer companies to transfer each 100 men to the regular army; 1,300 were induced to join on the promise that they would only be required to do garrison duty.

The funds for prosecuting the war were derived from the sale of Cuban bonds of the series of 1890, of which the Spanish Government had 120,000,000 pesos at the beginning of the rebellion. These were disposed of at 40 per cent. of their nominal value, 20 per cent. lower than they were quoted before the outbreak. They thus realized 48,000,000 pesos, nearly half of which were exhausted before Sept. 1, the expenditures having been 23,000,000 pesos.

On Aug. 31 a battle occurred at Sao del Indio, near Ramon de las Jaguas, between the force of José Maceo and 1,300 Spanish troops under Col. Canellas, who succeeded Gen. Bazan at Guantamano. The Spanish commander marched out, intending to attack the rebel camp at Gran Piedra. The insurgents had laid dynamite mines under all the roads approaching their position, and 5 of these were exploded with deadly effect. The Spaniards ascended one of the passes in the mountains, the Government guerrilla chief Garrido, noted alike for military ability and for barbarity, having seized at the beginning the other. The Spanish regulars pressed bravely up the road, exposed to a galling fire from the heights, and finally brought a field gun into action. They penetrated to the rebel camp, which they destroyed, after which they retired in the night, as Maceo had not only the troops that fought them in the pass, but as many more fresh troops with which to attack them in the morning. A detachment of Cuban cavalry, making a long detour, charged the Spanish rear guard, but were repelled. The Spanish loss was 24 killed and 68 wounded; that

of the insurgents was 36 killed and 80 wounded. Two days later a column of 1,500 men under Gen. Linares was attacked on the flank at Descanao del Muerto by Rabi while conveying stores from Palma Soriano to Remanganaguas and lost 29 killed and 60 wounded and a part of the stores. Gomez attacked a provision train and killed 32 men, but had to retire, finding the convoy stronger than his own force.

The insurgents had increased to over 30,000 by the time the Spanish re-enforcements arrived. The soldiers sent from Spain were not untrained youths, but the flower of the Spanish army. Some of the railroad trains transporting troops were wrecked with dynamite, and bridges were destroyed. Outside of the cities and seaports and the lines of railroad the territory of the central provinces as well as the eastern province was occupied by the rebels; but Matanzas still separated their two fields of operation. Having formed a junction with the forces in Las Villas and Santa Clara, Gomez intended to carry the war into Matanzas, and the Spanish commander in chief, abandoning all serious efforts to attack Maceo in the Oriente, or Gomez in Camaguey, laid plans to prevent this invasion and placed guards in the sugar plantations of Matanzas. The attempt to protect the estates in the revolted provinces had been ineffectual, for the insurgents had overpowered the guards in every case, and destroyed the property as a punishment to the owners for applying to the Government for protection. Only those planters could continue operations who paid the heavy contributions assessed upon them for the support of the revolution.

The strength of the Spanish forces after the arrival of the August re-enforcements was reported to be 59,700 infantry of the line, 3,900 regular cavalry, 2,200 artillery, 1,400 engineers, 2,700 marine infantry, 1,100 mounted guerrillas, 4,400 civil guards, 1,000 police, and 3,600 volunteers. From the total of 80,000 should be deducted the losses, estimated to have been 7,000 killed in skirmishes and battles, 3,500 deserters to the enemy and missing, and 8,000 victims of yellow fever and other diseases. One half of the troops were needed to garrison the cities, coast towns, and strategic outposts, leaving a force available for active operations that was not greater than the revolutionists had in the field. The Spanish authorities planned to blockade the coast effectually with two lines of war vessels. Already the insurgents found it difficult to smuggle arms or men into the island. Enrique Collazo, who planned a fresh expedition from the United States, and other men bent on similar enterprises were closely watched. A party of young Cubans who loaded a vessel with munitions of war in Wilmington, Del., were arrested, and the cargo was seized by revenue officers. They were tried and acquitted, the simple exportation of arms in a merchant vessel being no violation of the neutrality laws. Sailors caught smuggling contraband into Cuba on the steamer "Mascotte" were sentenced in the Marine Court at Havana to seventeen years' penal servitude in Ceuta.

Juan Gualberto Gomez and other members of expeditions who were captured by the Spaniards were tried after months of detention and sen-



tenced to twenty years' imprisonment in Ceuta. José Maria Aguirre, an American citizen arrested for complicity in the revolution, was finally released at the request of the United States Government, but Julio Sanguilly was committed on a criminal charge. He was not tried till the beginning of December, when he was sentenced to life imprisonment. Frank Agramonte and Francisco Sanz, American citizens who came with Maceo, were still confined without trial in Morro Castle.

**Republican Government.**—Delegates from all the provinces met at Najasa, near Guaiamara, to organize a permanent government. The Marquis of Santa Lucia presided. Maso, whom the armies of Maceo, Roloff, and Gomez had elected Provisional President, wished to resign, thinking that Gomez should be the executive chief. A constitution for the republic of Cuba was discussed, and various and opposite opinions were expressed regarding the form of government required.

The Congress of Delegates ended its labors on Sept. 23 at Anton de Puerto Principe, where a constitution for the new Cuban republic was adopted and proclaimed to the world. The supreme power of the republic is by this instrument vested in a Council of Ministers, consisting of a President, a Vice-President, and four secretaries, having charge respectively of the Departments of War, the Interior, Foreign Affairs, and Agriculture. Each secretary has a deputy to act in case of a vacancy. The ministerial government has authority to make laws dealing with the civil and political affairs of the republic, to levy contributions and contract loans, to raise and maintain troops, to declare reprisals against the enemy, and, if in the judgment of the Council it is absolutely necessary, to intervene in military operations. The military organization and ordinances as drawn up by the commander-in-chief are subject to the approval of the Council, as also are treaties made by the President, but a treaty of peace with Spain must form an absolute basis of independence for the island of Cuba, and after it has been accepted by the President and by the Council of Ministers it must be submitted for ratification to an Assembly of Representatives convoked for that purpose. No decree of the Ministerial Council is valid unless two thirds of its members concur in it, and unless it has the sanction of the President, who has power to dissolve the Council, in which case a new one shall be constituted within ten days. To be a member one must be twenty-five years of age, and no member can hold another office under the republic. Any member can be dismissed for cause by the vote of two thirds of the Council. The President is the executive chief, or, when he is unable to act, the Vice-President. In case both offices become vacant by resignation, death, or other cause, an Assembly of Representatives will be convened for the purpose of electing a new President and Vice-President. Each Secretary appoints his own subordinates, but every functionary must help to carry out the resolutions of the Council of Ministers. The armaments and operations of the war are placed under the direction of the commander-in-chief, having under him as second in command a lieutenant general,

who in case his chief is incapacitated will assume the supreme command. All Cubans are obliged to serve the republic with their persons and means, according to their power. The property of foreigners is exempt from taxation, provided their respective governments recognize the belligerency of Cuba. All debts of Cuba contracted from the beginning of the war to the date of the promulgation of the Constitution will be paid by the republic. The judicial authority will be entirely independent of the executive and legislative branches of the Government.

The delegates of the provinces elected the following permanent officials of the Government: President of the Republic, Salvador Cisneros, of Puerto Principe; Vice-President, Bartolome Maso, of Manzanillo; Secretary of War, Carlos Roloff, of Santa Clara; Assistant Secretary of War, Mario Menocal, of Matanzas; Secretary of Foreign Affairs, Rafael Portuondo, of Santiago de Cuba; Assistant Secretary of Foreign Affairs, Fermin V. Dominguez; Secretary of the Treasury, Severa Pina, of Sancti Spiritus; Assistant Secretary of the Treasury, Joaquin Castillo, of Santiago de Cuba; Secretary of the Interior, Santiago J. Saninanes, of Remedios; Assistant Secretary of the Interior, Carlos Dubois, of Baracoa; Commander in Chief, Gen. Maximo Gomez; Lieutenant General, Antonio Maceo. José Maceo, Maso Capote, Serafin Sanchez, and Fuerto Rodriguez were designated as major generals. Tomas Estrada Palma was appointed minister plenipotentiary and diplomatic agent of the Cuban republic abroad. Gen. Bartolome Maso and Gen. de Castillo were afterward sent as special envoys of the republic to the United States.

**The Autumn Campaign.**—The plan of the insurgents was to raise the standard of revolution over the whole island, compelling Gen. Campos to scatter his forces. When Gomez entered Camaguey and Roloff landed in Santa Clara, troops had to be withdrawn from Santiago de Cuba and other places to garrison points threatened by the rebels in the center of the island. Unless the insurgents were in much greater force than the Spaniards they would not attack; neither would they give the troops any opportunity of attacking, for they knew every inch of territory, and could always outmarch any force that was sent against them. They were able to harass the Spaniards constantly, hovering on their flanks and cutting off small detachments. Even when their ammunition was very low, they could continue these tactics and replenish their supply with what they captured from the soldiers. The plan of the rebels was to render the situation intolerable by stopping all commerce and production. Gomez issued a proclamation ordering the inhabitants of the province of Puerto Principe to cease from all plantation work under penalty of the destruction of their property, also forbidding them to supply provisions to the garrisons in the towns. Gen. Campos promised to drive the rebels out of Santa Clara and Matanzas before the time for cutting the sugar cane came round. Yet he did not begin aggressive operations in October, though he had 80,000 men, three times as many as the revolutionists. Of the Spanish troops, 25,000 were thrown into Santa Clara, while the rest were scattered over the island for the de-

fense of seaports and important places. There were 1,300 volunteers enlisted and brought to Cuba from the Argentine Republic. The rebels in Santa Clara numbered 10,000. Many well-known citizens joined the rebellion after the Spanish reinforcements arrived in September. Most of the Autonomists in the provinces took that side. The insurgents became very active, blowing up railroad bridges and culverts, cutting telegraph wires, and destroying villages and plantations. Whenever troops were transported they attempted to derail the train, and sometimes succeeded. A great number of Spanish laborers out of work and in danger of starvation joined the bands of Matagas and other guerrillas. Exhibitions of sympathy with the revolution caused the Government to renew the wholesale arrests in Havana, which led in turn to a fresh exodus to Santo Domingo and other countries. The paralysis of trade and the destruction of plantations and exactions of both the Spanish and the revolutionary governments caused extreme financial stringency and distress among all classes.

The Spanish cruiser "Sanchez Barcaiztegui" was accidentally sunk in Havana Bay on Sept. 19, in a collision with the passenger steamer "Mortera." The loss was 46, including nearly all the ship's officers and Rear-Admiral Delgado Parejo, the chief naval officer at Havana. On Sept. 29 the cruiser "Cristobal Colon" was wrecked off Bajos de los Colorados.

The insurgents had great difficulty in obtaining ammunition, as supplies destined for them had been intercepted. The schooner "Lark" was seized by the United States authorities in Florida and fined for violation of the navigation laws, while 33 Cuban filibusters who were on board were set free. Stores of ammunition were found on some of the British West India Islands and were confiscated. Gomez, on account of shortness of ammunition, was unable to accomplish anything against Mella, but when the latter marched through the province of Puerto Principe with 3,000 men for the purpose of attacking the rebels these had no difficulty in eluding the Spanish troops. The guerrillas in the Remedios district were pressed by Gen. Luque, who captured their camps at Peralta and Jaelita, and killed 37 in capturing their hospital. Gomez and Antonio Maceo planned to invade Matanzas. When the rebel army was organized under the new Government Gen. Maceo was continued in charge of operations in Santiago, Guantanamo, Baracoa, and Mayori; Gen. Maso Capote took command of Las Tunas and Guaymara; Gen. Sanchez directed operations in Las Villas; and Gen. Rodriguez was placed in command in Camaguey in conjunction with Gen. Gomez. The rebel troops in this district numbered only 5,500 men, while in the east Maceo and his subordinates had 28,300.

An engagement was fought on Sept. 25, near the river Guayabal, between 1,800 men under Gen. Echague and a body of rebels commanded by Gen. Maceo. The Cubans claimed a victory near Hatillo, in which the Spaniards, under Lieut.-Col. Tejeda, though 900 strong, outnumbering them two to one, were driven from the field, losing 18 killed and 74 wounded. Gen. Roloff issued a circular on Sept. 30, saying that it would be dangerous for the public to travel

upon the railroads thereafter, as the revolutionists, who confined their dynamite attacks to trains carrying troops, had discovered that the Spanish generals now interspersed cars conveying soldiers in the passenger trains. He also threatened to shoot workmen who should be seen reconstructing bridges or repairing telegraph lines. Another proclamation warned planters that their estates would be devastated and their machinery destroyed if they attempted to harvest crops or grind cane without first obtaining a license from the revolutionary Government. Maceo set out to join Gomez in Puerto Principe with supplies of ammunition and with 4,000 infantry and 2,000 cavalry. Their advance guard was attacked by a column of Spanish cavalry under Gen. Aldave at San Nicolas and defeated with heavy loss. Gomez transferred the center of his operations to the vicinity of Sancti Spiritus when Maceo entered Camaguey. The headquarters of the revolutionary Government were near Las Tunas. The Spanish forces in Santa Clara began their campaign early in October, when skirmishes occurred daily, but no action of importance. A passenger car was hit by bombs thrown from ambush, and some citizens and policemen were killed and several soldiers wounded. Roloff had a fight with a Spanish column near Vueltas on Oct. 11. On Oct. 14, Demetrio Castillo, leader of 400 insurgent cavalry, encountering Lieut.-Col. Tejeda and 250 Spanish guerrillas in Sabana de Miranda, feigned a retreat, and by that ruse obtained a victory, killing 31 and wounding 86 of the enemy. Marshal Campos marched with one of his flying columns through the district of Sancti Spiritus, and had some slight skirmishes with the rebels. A Spanish column of 550 men, under Lieut.-Col. Rodon, had a fight on Oct. 26 at Cruz del Yarey, near Jiguani, with some of Rabi's guerrillas, of whom 20 were killed and 60 wounded. A month before Rabi had won a victory over Col. Tovar, ambushing his column of 500 men, and when it was thrown into confusion falling upon it with 250 cavalry, inflicting a loss of 40 men. Rabi burned Baire. He attacked Col. Rodon's column with his cavalry early in November, and drove it back upon Jiguani. The military authorities in the east, especially Gen. Canellas in Guantanamo, adopted harsh measures toward persons suspected of sympathizing with the rebels, and most of the intelligent citizens, who did not join the rebels or escape to Santo Domingo, were thrown into prison. A convoy of 1,300 men, under Col. Tejerizo, was attacked by 500 insurgents with *machetes*, while marching from Manzanillo to Veguita, who cut out wagons containing provisions and 185 Mauser rifles and a quantity of ammunition. On the following day, Nov. 1, Gen. Gonzalez Muñoz attempted to leave Veguita with 2,500 men of all arms. Rabi with 1,300 men, supplied with new arms brought by Gen. Carillo's expedition, attacked the Spaniards, who repeatedly formed in a square, and, fighting at a disadvantage, finally retreated to Veguita, losing 200 men. On Nov. 15, guerrillas overwhelmed the garrison at the Daiguiri iron mines and killed 214.

Marshal Campos issued a decree forbidding the publication of any news of the war except that officially given by the chief of staff in



Havana. Foreign and Madrid reporters only were permitted to accompany Government forces, and they must comply with all restrictions. Civil and military officials were prohibited from facilitating the sending of war news. Marshal Campos insisted on pursuing a policy of leniency toward the rebels, and was upheld in this by the Spanish Government, though some Spanish politicians called for relentless measures. The Prime Minister announced, however, that the military operations would be vigorously prosecuted, and that there would be no discussion of Cuban reforms until the rebellion was crushed. This declaration drove over to the revolution many Cubans who had been friendly to the Government. A new Cuban loan of 15,000,000 pesos was placed in Paris on Oct. 9. Another Spanish vessel, the gunboat "Antonio Lopez," was wrecked on a key on Oct. 21. Another gunboat, the "Sancosildes," recently purchased in the United States, was captured by a party of rebels in the Cauto river, and stripped of guns and ammunition. Gen. Enrique Collazo got away from Florida in September with a well-equipped expedition of 260 officers and men, and succeeded in landing in Cuba. Gen. Carlos Manuel de Cespedes was also fortunate and landed an expedition on Oct. 27 at La Caleta, near Baracoa. There were 60 men, and they carried with them a large quantity of arms, including a Hotchkiss gun. An expedition fitted out in Canada by Gen. Francisco Carillo, consisting of 60 men, with 100 rifles and 10,000 rounds of ammunition, also effected a landing in the eastern province. Col. José María Aguirre left Canada with another expedition, and reached the Cuban shore, but not without mishap. The party, consisting of 129 men, with 2 rapid-firing guns and 500 Winchesters and 464,000 cartridges, landed on the south coast in Las Villas. The filibusters were surprised while landing in small boats, and some were captured after throwing the arms into the sea. Men and small lots of arms landed incessantly in small sailing craft. The "Laurada," an American steamer suspected of having conveyed one of the expeditions, was seized on the charge of violating the neutrality laws when she returned to Charleston.

On Nov. 12, Gen. Maceo entered Las Villas with 8,000 men from the eastern army and Camaguey. In the meantime, Gomez, with 5,000 men, had advanced westward nearly to Sagua, joining forces with Roloff, Sanchez, Suarez, Cespedes, and Collazo. On Nov. 11, Gen. Oliver's column with the aid of well-planted artillery achieved a victory over the force of Gen. Serafin Sanchez in the Remedios district, killing 60 of the insurgents. José Maceo and Capote detached another force, numbering 3,000 men, from the eastern army, while Gomez organized one of equal strength, recruited in Camaguey, the command of which he gave to José María Rodriguez. Before these forces entered Santa Clara the rebel bands of Lacret, Perez, Muñoz, and others terrorized the loyalists of this province and of Matanzas, and did much damage by burning cane fields and houses. Guards protected the principal buildings on the large plantations, while flying columns prevented the rebels from establishing themselves in force upon the plains. The position occupied by Perez and Muñoz at Rincon Hondo, in the Cienfuegos dis-

trict, was captured by Col. Molina. The rebels seldom ventured to attack the small forts with which the country was dotted, but kept the soldiers and the inhabitants in a constant state of alarm by feigning attacks, riding up in the nighttime and firing pistols when challenged. They took one fort close to the city of Santa Clara and menaced the town of Camajuani in the Remedios district. The seat of the revolutionary Government was established at Sabana del Medio. Matagas, with 500 men, attacked a Spanish column near Cienga Zapatos, in Matanzas, and killed 60 men, with a loss of 25 insurgents. Gen. Serafin Sanchez lost 60 killed in a fight with Gen. Oliver at Manacas Jobosi, in the Remedios district, on Nov. 11. The Spanish artillery played an important part in the engagement.

The plan of campaign adopted by Marshal Campos was preliminarily to divide the island into zones, in which flying columns should drive the rebels from point to point, attacking them simultaneously in different places, and ultimately to move forward in an extended line with 25,000 men or more, sweeping them into the mountains of Puerto Principe and Santiago de Cuba. An incipient rising in the Vuelta Abajo was crushed by a constant patrol, and at one time the rebels were driven out of Mantanzas; but they reappeared when Gomez concentrated his troops in Santa Clara, and even menaced the towns on the border of the Havana province. Maceo, before he could join Gomez in Las Villas, had to cross a military railroad on the border of Camaguey, which was closely guarded. His advance guard was beaten back by the troops of Gen. Aldave when the first attempt was made. José Maceo, who was following with another large force, at about the same time gained a success over Spanish troops by making good use of some mountain guns. The Spaniards recruited more volunteers in Argentina and in Uruguay and Brazil, who were expected to stand the climate and to be more trustworthy than the soldiers from Spain, some of whom were inclined to mutiny when ordered out to Cuba and to desert to the enemy when they were sent into the field. Late in November 30,000 troops under the command of Gen. Pando and Gen. Marin were sent out from Spain. Marshal Campos intended to concentrate enough troops to surround the combined forces of Gomez, Roloff, and Sanchez and force them to fight a pitched battle. Meanwhile the insurgents won in engagements with detached bodies of Spanish troops in Santa Clara. Antonio Maceo after succeeding in crossing the boundary had a battle with Gen. Navarro near Santa Clara on Nov. 17 which lasted seventeen hours and ended in the defeat of the Spaniards with heavy losses. On Nov. 19 and 20 Gen. Gomez won a similar victory over Gen. Suarez Valdez at Taguasco, near Santa Clara. It was said that this was the heaviest engagement of the war, that the Spaniards lost hundreds in killed and wounded. In an engagement with civil guards near Sagua the rebel chief Rafael Nasferrer was shot, making the fortieth insurgent leader who had been killed since the war began. On Nov. 20 several bands attacked a convoy led by Col. Hernandez on the way to Salto from Sagua. Roloff burned the town of Quinia de Miranda, near Siguanca,

rendering 4,500 people homeless. The Spanish garrison fought well, but was compelled to surrender. The rebels spread panic in the Spanish ranks by throwing dynamite bombs, with which Maceo's army was well provided, and thus he forced his way through the cordons that were drawn to prevent his march through Santa Clara. With the aid of dynamite Gomez captured Fort Pelayo and put its defenders to flight. Lieut. Feijoo, the commandant, was afterward tried by court-martial and condemned to imprisonment for life.

President Cisneros and his Cabinet, escorted by José Maceo's army, which was vainly pursued by Mella's troops, transferred their headquarters to Las Villas. A new proclamation of Gomez threatened with death all persons assisting in the gathering of crops and ordered the laying waste of plantations, which was begun as soon as the cane was dry enough to burn. This devastation was checked by the activity of columns led by Gen. Luque and Gen. Oliver. Marshal Campos assigned Lieut.-Gen. Pando to the command of the first army corps, with headquarters in Santiago, and placed Gen. Marin in command of the second corps, operating in Santa Clara, while Gen. Mella remained in command of the forces operating in Camaguey and the division of Puerto Principe, and Gen. Arderius was charged with operations in Matanzas, Havana, and Pinar del Rio. Gen. Bazan and Gen. Salcedo had been removed by Marshal Campos and recalled to Spain on account of their barbarity and their criticism of the mild policy of their superior.

**The Alliança Affair.**—An American mail steamship, the "Alliança," on the morning of March 8, as she was making the Windward passage off Cape Maysi was signaled to heave to by the "Conde de Venadito," a Spanish gunboat, which fired two blank shots. According to the account of her officers the merchant vessel was 4 miles, according to the Spanish account  $1\frac{1}{2}$  mile from shore. Instead of obeying the signal Capt. James Crossman kept on his course, quickening speed. The Spaniard gave chase at full speed for 25 miles, and as the steamer drew ahead fired 2 or 3 solid shots directly at the American vessel, all of which fell short. The Spanish authorities had been informed that the "Alliança" carried munitions of war in her cargo. These, the ship's officers declared, were delivered in Colombia for the Government of that republic, and they denied the report that they had transferred passengers to fishing boats off the coast of Cuba.

On March 14 Secretary Gresham cabled to the

American minister at Madrid to demand a prompt disavowal of the unlawful act of the commander of the "Conde de Venadito," and a proper expression of regret at its occurrence. He further sent a demand that orders be given to Spanish commanders not to interfere with legitimate American commerce passing through the Windward passage, as this was the usual and natural highway for vessels plying between the ports of the United States and the Caribbean Sea, declaring that forcible interference with them would under no circumstances be tolerated, whether they pass within 3 miles of the Cuban coast or not, when no state of war exists.

The Spanish Government relieved of his command the captain of the "Conde de Venadito," but gave no reply to the representations of the United States Government until a thorough investigation of the circumstances was made by the military authorities and by Señor Dupuy de Lome, the newly appointed minister to Washington. When their reports were finally received the apology was made.

**The Mora Indemnity.**—By order of a court-martial Antonio Maximo Mora, a naturalized American citizen, was condemned to death and his estates declared confiscated in 1870 on the charge of participation in the revolution then going on in Cuba, although he was not residing in the island. The United States demanded restitution or indemnification, and in 1873 the Spanish republic admitted the claim was just. The decree was confirmed in 1876 by the royal Government, but the Cuban authorities delayed its execution until the estates were in ruins. Spain finally offered the sum of 1,500,000 pesos as indemnity, and this offer was accepted in 1886. The Cortes, however, made no appropriation for the payment, and in 1888 the Spanish Minister of State attempted to affix to the agreement the new condition, that certain claims of Spanish subjects against the United States should be adjudicated and settled simultaneously. Secretary Bayard rejected the proposition, and the United States Government continued to urge the Spanish Government to fulfill its contract. On June 12, 1895, Secretary Olney instructed Hannis Taylor, United States minister at Madrid, to ask Spain to give assurances that she would satisfy the claim within two months. The Spanish Government then offered to pay the principal of the claim, and the claimant agreed to forego the interest. On Sept. 14, the original claimant having died meanwhile, the Spanish Government paid \$1,449,000, equal to 1,500,000 pesos, in settlement of the long-standing claim.

## D

**DANA, JAMES DWIGHT**, an American geologist, born in Utica, N. Y., Feb. 13, 1813; died in New Haven, Conn., April 14, 1895. His father, James Dana, was a successful business man, and his mother was Harriet, daughter of Seth Dwight, of Williamsburg, Mass. The boy early showed a fondness for science, and at the age of twelve, while a student in Bartlett Acad-

emy, in Utica, studied chemistry and shared with his associates the responsibility of preparing the experiments and delivering to others the formal lectures; also making frequent excursions after minerals. In 1830, attracted by the reputation of the elder Silliman, he entered Yale College as a sophomore. During his college course he made much progress in science, especially in botany



and in mineralogy; also attaining distinction in mathematics. In August, 1833, he left New Haven, having been appointed instructor of mathematics to midshipmen in the United States navy, and in this capacity visited many ports of France, Italy, Greece, and Turkey while on the "Delaware" and the "United States." Notwithstanding his duties he found time to make



JAMES DWIGHT DANA.

collections in natural history, and his first paper, "On the Condition of Vesuvius in July, 1834," appeared in the "American Journal of Science" in 1835. He returned to New Haven in 1836, and for two years served as assistant in chemistry to Prof. Silliman. During these years he prepared his "System of Mineralogy" (New Haven, 1837). Again he was called to leave New Haven, for he received the appointment of mineralogist and geologist to the United States exploring expedition under Capt. Charles Wilkes in 1836. This place he refused at first, but on the earnest solicitation of Dr. Asa Gray, who had been appointed botanist, he was persuaded to accept. The expedition sailed in August, 1838, and returned in June 1842, having circumnavigated the globe. In addition to the mineralogy and geology he assumed charge of the zoölogy, including the crustacea and corals. For thirteen years after his return he was occupied in the study of the collections made by him, and his results were published as a "Report on Zoöphytes" (4to, with an atlas of 61 folio plates, Philadelphia, 1846), in which he proposed a new classification and described 230 new species; a "Report on the Geology of the Pacific" (4to, with an atlas of 21 plates, 1849); and a "Report on Crustacea" (2 parts, 4to, with an atlas of 96 folio plates, New York, 1852-54). Most of the plates in these works were drawn by his own hand. Meanwhile he prepared the editions of his "System of Mineralogy" that were published in 1844, 1850, and 1854, and also the editions of his "Manual of Mineralogy" that were published in 1848 and 1857.

In 1850 he was appointed Silliman Professor of Natural History and Geology in Yale College, although he did not assume the active duties of the chair until 1855. The title of his professorship was changed in 1864, owing to the delivery of the lectures on natural history by others, to that of Geology and Mineralogy, and he main-

tained his active connection with Yale until 1890. Prof. Dana became associated with the two Sillimans in the editorship of the "American Journal of Science" in 1846, and later became senior editor, which post he held until his death. The fifth edition of his "System of Mineralogy" (1868) was the last that he himself wrote, but the editions of the smaller "Manual of Mineralogy" in 1878 and 1887 were by him. In 1862 the first edition of his "Manual of Geology" was issued, and in 1895 the fourth was published, all of which he edited. Besides the foregoing he was the author of "Coral Reefs and Islands" (New York, 1853), which he enlarged and issued as "Corals and Coral Islands" (1872; 2d ed., 1890); "Text-book of Geology" (1864; 2d ed., 1874); "The Geological Story briefly told" (1875); "Characteristics of Volcanoes" (1890); and "The Four Rocks of the New Haven Region" (New Haven, 1891). The degree of Ph. D. was conferred upon him by the University of Munich in 1872, and that of LL. D. was given him by Amherst in 1853, and by Harvard and Edinburgh in 1886. In 1872 the Geological Society of London sent him its Wollaston medal, and in 1877 he received the Copley medal of the Royal Society of London, while in 1892 the Boston Society of Natural History conferred upon him their "Grand Walker prize of \$1,000 for distinguished services in Natural History." In 1854 he was elected President of the American Association for the Advancement of Science, and he was one of the original members of the National Academy of Sciences. He held honorary and corresponding relations to many scientific societies both at home and abroad, including the Royal Society of London, the Institute of France, the Lincei of Rome, and the Royal Academies of Berlin, St. Petersburg, and Vienna. Prof. Dana left his diplomas from scientific societies and academies, and also his medals, to be delivered to Yale University at the option of the widow, who was Henrietta Frances, third daughter of Prof. Silliman. He provided in his will that the diplomas be made a part of the general collection of scientific documents and the medals are to be added to the general collection of medals in the university library. He also gives from his own library the works on geology that are not already on the shelves of the college library, excepting such volumes as, if taken away, would break a series. A sketch of his life, accompanied by a full bibliography of his numerous papers, written by his son, Edward Salisbury Dana, appeared in the "American Journal of Sciences" for May, 1895.

**DELAWARE**, a Middle Atlantic State, one of the original thirteen; ratified the Federal Constitution Dec. 7, 1787; area, 2,120 square miles. The population, according to each decennial census, was 59,096 in 1790; 64,273 in 1800; 72,674 in 1810; 72,749 in 1820; 76,748 in 1830; 78,085 in 1840; 91,532 in 1850; 112,216 in 1860; 125,015 in 1870; 146,608 in 1880; and 168,493 in 1890. Capital, Dover.

**Government.**—The State officers during the year were the following: Governor, Joshua H. Marvil, Republican, until his death, April 8, when he was succeeded by the Speaker of the Senate, William T. Watson, Democrat; Secre-

tary of State, N. B. Smithers, succeeded by J. H. Whiteman; Attorney-General, John R. Nicholson; Treasurer, Charles H. Atkins; Auditor, B. L. Lewis; Superintendents of Education, H. D. Griffin, Caleb C. Tindal, and P. Zameny; Adjutant General, Samuel A. Macallister, until May, when he resigned, and was succeeded by Garrett J. Hart; Chancellor, James L. Wolcott; Chief Justice, Charles B. Lore; Associate Justices, Ignatius C. Grubb, Charles M. Cullen, and David T. Marvel.

**Finances.**—The statement of the Treasurer at the beginning of the year shows that the assets of the State amounted to \$1,031,842, and the liabilities to \$684,750; thus the assets exceeded the liabilities by \$347,092. Of the \$70,772 paid to Delaware as its due in the repayment of the direct tax, \$59,995.24 has been distributed, leaving the State over \$10,000, which more than covers the cost of distribution.

The Treasurer says: "During my incumbency of this office the expenditures have largely increased both from regular and special appropriations. The latter aggregated over \$87,000. To the regular appropriations have been added registration expenses, aggregating \$15,000, and expenses connected with the Delaware State Hospital at Farnhurst, aggregating, including special appropriation for improvement fund, \$155,000. The result of the payment of these large sums of money has been to deplete the general fund to an extent that makes it absolutely necessary for our revenue to be increased. I have been enabled to meet the demands made upon the general fund during the past two years by borrowing from the school fund."

**Banks.**—The report of the national banks of the State in March showed the total resources to be \$8,724,652.29, and the surplus fund \$978,900.

**Insurance.**—During 1893, 98 insurance companies were authorized to do business in the State—52 fire, 22 life, 6 assessment, 12 casualty and guarantee, and 6 accident insurance companies. Last year 108 companies were authorized—58 fire, 22 life, 8 assessment, 12 casualty and guarantee, 6 accident, and 2 live-stock insurance companies. Five of the companies are incorporated by the State. Four of them pay an annual tax of \$100, and one company is exempt from taxation. Since the preceding biennial report 14 companies have been admitted to do business in the State. During 1894 the companies incorporated by the State collected premiums in the State amounting to \$89,995.19, and incurred losses amounting to \$33,627.37, and the companies of other States and foreign countries received premiums amounting to \$209,069.86, and incurred losses amounting to \$181,038.53, showing the total premiums received for the year to have been \$299,164.87, and total losses incurred \$214,666.90.

**State Institutions.**—An addition to the State Insane Asylum is to be built, and to raise funds for the purpose \$35,000 worth of bonds has been issued, which were sold at \$104.48. They bear 3½ per cent. interest, are payable in twenty years, and redeemable at the option of the State any time after Jan. 1, 1906. The plans call for the erection of 3 three-story buildings.

The total number of inmates at the hospital

in February was 226, of whom 98 were women. In July there were 243 inmates. During the previous year 90 were discharged, of whom 50 had recovered and 21 improved. The average annual cost of support is \$138 for each patient.

The following statements in regard to the prison system and discipline of the State were made in an address to the Legislature by the Chief Justice in advocacy of a bill to provide for a State workhouse:

At present in the jails of the 3 counties of this State there are 210 prisoners, of all ages, color, sex, and grades and experience in crime, crowded together in about 50 cells, living in idleness, festering under vicious habits, and becoming daily more hardened from such environments. We stand almost alone of the 44 States of the Union in keeping up a prison system that originated in the centuries long ago and has not changed for over two hundred years. . . .

The bill proposes to borrow \$200,000 on the State's credit, and provides for the Board of Trustees of Delaware State Workhouse, to be composed of 3 members from each county, who, without pay for services, are to expend the \$200,000 provided by the bill in erecting a State workhouse. In this house all prisoners of the State shall be put to work under the direction of the board. The prisoners are to be classified and separated—the men from the women, and those of tender years and new in crime from old and hardened criminals. Obedience to the rules and diligence in work will inure to the benefit of the prisoner by shortening his term.

**Education.**—Delaware College, at Newark, reported 78 students for the year, and 14 graduates. The Inspector General, who reviewed the cadets, commended their appearance, and said: "It is my opinion that the improved aspect and relations of the military department of this institution amply warrant its continuance." The by-laws were so changed as to require all students receiving free tuition to take military drill during the freshman, sophomore, and junior classes, unless excused on account of physical disability or religious objection.

The State Principals' Association and the State Board of Education have been working for such additions to the school laws as will insure a substantially uniform curriculum in the schools of the State: it is also a part of their plan to have central high schools established in the rural districts.

At the Educational Convention of colored Citizens of the State, in Dover, Feb. 7, it was said that there are about 6,000 colored children of school age in the State that never have seen the inside of a schoolhouse. The chairman of the Committee on Resolutions spoke of the wretched condition of the schools in the counties; of the dilapidated buildings, many almost unfit for school purposes, the remainder being churches or halls; of the short terms; of the meager salaries paid to teachers; of the almost total lack of school appliances and facilities; of the alarming extent of illiteracy in the State. He called attention to the fact that during the past decade illiteracy among the colored people of this State had decreased proportionately less than in any other State of the Union similarly conditioned.

**Water Ways.**—The appropriation made by the Government for dredging and deepening the harbor at Wilmington, including the lower part of the river, has been expended, and a survey has been made by United States Engineer W.



F. Smith of the entire river and its tributaries with a view to dredging the channel to a uniform depth of 21 feet from the Delaware river to the Delaware Pulp Works. The present depth is about 15 feet. From 1836 to 1892 the Government expended about \$350,000 in appropriations for improvement of the harbor.

The report of the commission appointed by Congress to examine the surveys for a canal to connect Chesapeake and Delaware Bays discussed the various proposed routes and recommended as the most feasible the Back creek route, which is substantially located on the line of the existing Chesapeake and Delaware Canal. This route, it believes, could be constructed at much less cost than any of the others suggested, is better adapted for national defense, and will give greatest facility to commerce.

**The Cubans.**—Twenty men accused of being intending filibusters were arrested at Penn's Grove, Aug. 30, by Federal officers from Wilmington, who also captured 28 cases of arms and ammunition and a large quantity of baggage. The party had chartered a tug and sailed from Wilmington, but when they found themselves pursued by the officers in another tug they landed at Penn's Grove. Two of the party escaped capture. All are Cubans by birth, but citizens of this country by adoption. They were tried in the United States court at Wilmington and acquitted, and the verdict was received with demonstrations of popular approval.

**License.**—A convention of those in favor of local option was held in Dover, Jan. 10, for the purpose of deciding upon a bill to be presented to the Legislature. In July the State Liquor League was organized at a meeting in Wilmington. Resolutions were adopted declaring the organization to be

constructed upon the broad plane of personal liberty and equality of rights; ready at all times to support law and order; interfering with no trade or profession, but always ready to extend a helping hand for the prosperity of State and country and to all classes of business. We believe that our Creator endowed man with the unalterable right to eat and drink whenever his appetite requires, so that it does not interfere with his peace and happiness. The business in which we are engaged has existed for centuries. It is recognized in every civilized land. It can be defended from every standpoint known to reason or argument, yet we are faced by an organized body of people whose power we must not underestimate.

The resolutions further pledged the league to obey the present laws and exert itself to have them "modified to meet the present state of society and the trade generally."

**Antibribery Convention.**—After the elections of 1894 it was charged that a great deal of money had been used and that the registration and ballot laws had been grossly violated. The corruption fund in Sussex County was said to have been about \$60,000. The system of voting is a modification of the Australian ballot law, but it was said that the workers in many places accompanied the voters into the booths to make sure that they voted according to the contract; that in one hundred, or township, the voting took place in a dwelling house and that no poll list was used; and that in some of the hundreds negroes were made to stand up and take oath that they would vote as they had promised and

been paid to do. At the first term of court in 1895, 2 men, one a Republican and the other a Democrat, were convicted of violation of the election laws; 7 other cases of the kind were set aside because the indictments were defective. In view of these facts the State Grange called an anti-bribery convention to meet at Dover, Feb. 22. It was not largely attended, but resolutions were passed calling for strict laws to prevent corruption, and a plan was adopted for an organization to be called "The Political Reform League of Delaware."

In his message to the Legislature in January, Gov. Reynolds said on this subject:

You yourselves, no doubt, are aware that this vice has grown to its present magnitude not so much on account of the lack of proper legislation as of a too tolerant public sentiment. General Assemblies prior to this have recognized its danger and enacted laws intended for its suppression, but their efforts were rendered futile because of the indifference of the people, who had not up to the recent election been awakened to a sense of the enormity of this crime. For example, the Legislature of 1891 adopted the Australian system of voting, then considered to be the most effectual method of securing a pure and free ballot, but its provisions have been virtually nullified by the culpable failure of the people to carry them into effect.

**Legislative Session.**—The Legislature met in January, with 19 Republicans and 11 Democrats. The election of a United States Senator in place of Anthony Higgins, whose term had expired, was one of its duties; but after four months, during which more than 130 ballots were taken, the Legislature adjourned May 9, leaving the matter still unsettled. The Republican majority could not agree upon a candidate. Six of them voted steadily for J. E. Addicks until near the close of the session, when the number of his supporters was reduced to 4. Ex-Senator Higgins was his principal opponent in the early part of the session; later, George V. Massey, James Pennewill, and Henry A. Du Pont. Others named by Republicans on some of the ballots were Hiram R. Burton, Benjamin Nields, E. G. Bradford, Charles F. Richards, H. A. Richardson, and William Du Pont. The first choice of the Democrats was Chancellor James L. Wolcott. Others who received support were John R. Nicholson, Ebe W. Tunnell, Thomas F. Bayard, John W. Causey, and E. L. Martin. Chancellor Wolcott withdrew his name Jan. 7, and thereafter Edward Ridgely received the support of the majority of the Democrats. After the death of Gov. Marvil, the Speaker of the Senate, William T. Watson, became acting Governor according to the Constitution, as Delaware has no lieutenant governor. The Constitution does not say whether the Speaker vacates the office of Senator by assuming that of Governor, and on May 9, the last day of the session, Gov. Watson resumed his position as president of the Senate and claimed his right to vote. Without him there were 29 votes and only 15 would be needed for a majority, and as 15 of the Republicans were now united upon Henry A. Du Pont, the Speaker of the House declared that he was elected. Including the Governor, however, there were 30 votes, and 16 were required for a majority, and the Governor and the Speaker of the Senate declared that no choice had been

made. So the session closed with the question still in doubt. There is a precedent bearing on the point in the history of the State. The Constitution of Delaware is substantially the old Constitution framed in 1791, but it was revised in 1832 and bears that date. The president of the Constitutional Convention of 1832 was Speaker of the Senate when Gov. Bennett died in office in 1836. He became acting Governor. The fact that no Senator was elected in his place at the general election held while he was so acting and before his term expired, and that he returned and resumed his seat as Senator after the inauguration of the next Governor, seems to show that, in the opinion of those who revised the Constitution, he did not lose his seat by assuming the duties of Governor, and his right was not called in question even by political opponents. At the same time it does not appear that he exercised or attempted to exercise the functions of Senator while acting as Governor, and so the parallel is not complete.

It is claimed that if Mr. Watson did not have the rights of a Senator his constituents were deprived of their just representation in the choice of United States Senator, since no successor had been elected to his seat.

The vote taken at the election of 1894 on the question of holding a constitutional convention having shown a majority in its favor, the Legislature provided for such convention, to be held in 1896.

A joint resolution was passed requiring the Attorney-General to investigate the title to certain historical and legal papers, especially a deed of feoffment of the Duke of York to William Penn, which were advertised to be sold in Philadelphia as private property, and to ascertain whether the State were entitled to the possession of those papers. He reported that, in his judgment, the State had a lawful claim, and he was directed to institute such proceedings as should be necessary to protect the rights of the State.

An act was passed authorizing alterations and additions to the State Capitol.

Another act was for the suppression of betting and wagering upon contests of skill or speed. The penalty was fixed at a fine of not less than \$100 nor more than \$2,000, and in default of payment imprisonment of not less than three months nor more than two years.

Many other bills of importance were introduced and some passed. Of the condition in which they were left the Dover "Index" said: "By the manner of its [the Legislature's] dissolution our laws have been left in a state of confusion and uncertainty hardly to be appreciated by the citizens at large."

**DENMARK**, a kingdom in northern Europe. The legislative body, called the Rigsdag, is composed of the Landsting and the Folkething, the former consisting of 66 members, of whom 12 are life members nominated by the Crown and the rest are elected by indirect suffrage for eight years, the latter of 114 members, in the proportion of 1 to 16,000 inhabitants, elected by direct universal manhood suffrage. A new electoral law has created 12 new districts.

The reigning sovereign is Christian IX, born April 8, 1818, a prince of the house of Schleswig-Holstein-Sonderburg-Glücksburg, which is a

younger branch of the house of Oldenburg that ruled Denmark for four centuries and became extinct by the death of Frederik VII, Nov. 15, 1863, whom Christian succeeded, having been named heir to the throne in the treaty of London, signed May 8, 1852.

The State Council is composed of the following ministers: President of the Council and Minister of Finance, Baron K. T. T. O. Reedtz-Thott, appointed Aug. 7, 1894; Minister of the Interior, H. E. Hörring; Minister of Justice and Minister for Iceland, J. M. V. Nellesmann; Minister of Finance, C. D. Lüttichau; Minister of War, Gen. C. A. F. Thomsen; Minister of Marine, Vice-Admiral N. F. Ravn; Minister of Worship and Public Instruction, W. de Bardenfleth; Minister of Public Works, H. P. Ingerslev.

**Area and Population.**—The area of Denmark, including the Färøe Isles, is 15,289 square miles. The population in 1890, when the last decennial census was taken, was 2,185,335, consisting of 1,059,322 males and 1,112,983 females. The number of marriages in 1893 was 15,739; of births, 70,280; of deaths, 42,295; excess of births, 26,235. The number of emigrants was 9,150. Copenhagen, the capital, had 312,859 inhabitants in 1890; with its suburbs, 375,251.

**Finances.**—The revenue for the year ending March 31, 1894, was 58,075,266 kroner (1 krone=27 cents), and the expenditure 62,152,474 kroner. The budget for 1896 makes the revenue 62,743,929 kroner, of which 39,085,000 kroner are derived from customs and other indirect taxes, 9,971,100 kroner from direct taxes, 6,663,145 kroner from receipts from property and the sinking fund, 4,571,570 kroner net from the railroads, posts, and telegraphs, 1,034,000 kroner from lotteries, 791,524 kroner from domains and forests; and 627,599 kroner from all other sources. The total expenditures are estimated at 61,767,435 kroner, of which 10,239,755 kroner are devoted to the Ministry of War, 10,036,342 kroner to the improvement of state property and reduction of debt, 6,820,065 kroner to the Ministry of Marine, 6,654,250 kroner to interest and expenses of the debt, 5,714,111 kroner to the Ministry of Marine, 3,979,008 kroner to the Ministry of Justice, 3,909,298 kroner to the Ministry of Public Worship and Instruction, 3,840,878 kroner to the Ministry of Finance, 3,235,407 kroner to pensions and military invalids, 1,155,200 kroner to the civil list and appanages, 733,811 kroner to the Ministry of Public Works, 585,456 kroner to the Ministry of Foreign Affairs, 319,016 kroner to the Rigsdag and Council of State, 85,764 kroner to Iceland, and 4,459,074 kroner to extraordinary purposes.

The public debt on March 31, 1894, amounted to 182,108,483 kroner, mostly bearing 3½ per cent. interest. The foreign debt was only 9,554,183 kroner. The reserve fund kept for extraordinary emergencies amounted on March 31, 1894, to 34,754,796 kroner. The investments of the state amounted to 50,976,260 kroner, not including the state railroads, which are valued at 185,975,410 kroner.

**The Army.**—The military forces of Denmark in 1895 consisted of 31 battalions of infantry, besides 11 of reserves; 5 regiments of cavalry, each having its depot; 2 regiments of field artillery, each having 6 active and 2 reserve batteries; 2



battalions of fortress artillery, divided into 6 companies, besides 5 companies of reserves; and 1 regiment of engineers. The peace effective was 778 officers and 13,152 men in 1894; the war strength was 1,214 officers and 42,919 men. The infantry weapon is the Krag-Jørgensen rifle of 8 millimetres caliber. Each battery of artillery has 8 steel cannons of 9 centimetres caliber.

**The Navy.**—The naval force consists of 1 armored battle ship of the second class, the "Helgoland," protected by 12-inch plates and armed with 1 36-ton, 4 22-ton, and 6 small and quick-firing guns; 3 first-class armored cruisers, one carrying a single 52-ton and the others a couple of 28-ton guns; 4 old ironclads for port defense; 6 new deck-protected cruisers; 14 third-class cruisers; and 6 first-class, 4 second-class, and 2 third-class torpedo boats. The budget for 1896 provides for a new armor-clad and 1 first-class torpedo boat.

**Commerce.**—The value of the imports in 1893 was 320,294,907 kroner; of the exports, 235,115,937 kroner. The values, in kroner, of the principal classes of imports and exports were as follow:

CLASSES OF ARTICLES.	Imports.	Exports.
Butter, eggs, lard, and pork.....	31,071,899	141,089,676
Textile manufactures.....	43,065,931	5,131,212
Groceries.....	33,684,870	8,652,843
Cereals.....	29,441,400	12,849,589
Metal goods.....	31,981,819	5,161,906
Coal.....	21,661,184	2,000,062
Animals.....	1,624,875	21,333,760
Wood and manufactures.....	16,234,898	3,293,251
Drinks.....	4,437,389	1,815,755

The trade, in kroner, with the principal foreign countries in 1893 was as follows:

COUNTRIES.	Imports.	Exports.
Great Britain.....	69,034,019	144,094,682
Germany.....	110,443,429	47,219,855
Sweden and Norway.....	48,874,277	27,698,598
Russia.....	27,465,375	2,204,434
United States.....	20,193,953	1,084,878
Netherlands.....	8,846,078	284,330
France.....	5,268,997	1,349,486
Belgium.....	5,479,645	926,464
Danish Colonies.....	3,867,379	4,051,192
Spanish America.....	822,037	18,002

**Navigation.**—The number of vessels entered at Danish ports in 1893 was 27,203, with 2,049,354 tons of cargo; the number cleared was 27,305, carrying 582,819 tons of cargo.

The merchant marine on Dec. 31, 1893, consisted of 3,675 vessels, of 330,911 tons, of which 374, of 129,209 tons, were steam vessels.

**Communications.**—There were 1,292 miles of railroad in 1894. Of these, 999 miles were Government property, in which 185,975,410 kroner were invested.

The telegraphs had a length of 3,674 miles, with 10,280 miles of wire. The state owned 2,910 miles of lines.

**Iceland.**—This dependency of Denmark has its own Constitution. The legislative power is exercised by the King, through a nominated Governor, and the Althing. The Althing is composed of two Chambers, one of which has 12 members, half of them appointees of the Crown and half elected by the other Chamber. This is the popular branch and contains 36 members, of

whom 30 are elected by the people and 6 are nominated by the King. The area is 39,756 square miles, of which 16,180 are inhabited. The population is 70,927. The value of the imports in 1893 was 2,593,992 kroner; of the exports, 2,777,405 kroner.

**Greenland.**—The Danish colony on the east coast of Greenland has an estimated area of 46,740 square miles and a population of 10,516 souls. The imports in 1893 were 619,161 kroner and the exports 195,511 kroner in value.

(For the Danish Antilles, see WEST INDIES.)

**General Election.**—The rise of the Agrarian party altered the conditions of electoral contests considerably. To gain the support of the Agrarians the Government arranged with the banks for a general reduction of the rate of interest on mortgage loans from 4 to 3½ per cent., intermitting for the purpose negotiations that were in progress for the conversion of the public debt. The Folkething voted to guarantee the bonds of the credit institutions, a proposition that ex-Premier Estrup considered dangerous and communistic.

The elections for the Folkething were held on April 9 and resulted in a majority of Socialist-Radicals. The people thus recorded a protest against the compromise arranged between the Folkething and the Conservative ministry and Landsting in April, 1894. The new Folkething, consisting of 61 Radicals, 29 Moderate Liberals, and 24 members of the Right, met on April 19 to elect its officers. Sophus Hoegsbro, the President, and the two Vice-Presidents chosen were opponents of the compromise.

**DISASTERS IN 1895.** In Europe and America the year opened with unprecedented cold, with storms so violent and protracted that untold suffering and loss of life and property followed. Of the more notable disasters, the loss at sea of the Elbe and the Reine Regente are the most conspicuous, involving the almost instant loss altogether of 755 lives. A larger number than usual of minor accidents is recorded, those occurring on railways being especially numerous. The list of these last is condensed from the full monthly reports of the "Railway Gazette"; the summaries of losses by fire are from the returns published by the "Journal of Commerce and Commercial Bulletin," of New York.

January 1. Trains wrecked near Yorktown, Ind., and Olequa, Wash., 3 killed, 8 hurt.

2. Train wrecked near Bainbridge, Ohio, 1 killed, 4 hurt.

4. Shipwrecks in a disastrous storm in British waters, about 200 fishermen perish. Train wrecked, Livermore, Cal., 3 killed, cause conflicting orders.

5. Avalanche in the French Pyrenees, town of Orlu nearly demolished, 15 killed. Trains wrecked, White Haven, Pa., and Middlebury, Pa., 3 killed, 1 hurt.

6. Fire in Toronto, Ontario (see end of January). Explosion and fire on a steamer in the harbor of Rio, Brazil, 120 lost.

7. Train wrecked near Smithville, Ohio, 2 killed, 2 hurt.

8. Fire: Decatur, Texas, county courthouse and records burned, loss, \$43,000.

10. Train wrecked, Brooklyn, N. Y., 1 killed, 1 hurt. Second fire in Toronto (see end of January).

11. Widespread blizzard in the West and Northwest, much suffering and death from cold and exposure. Train wrecked near Kansas City, Mo., 1 killed, 1 hurt.

12. Train derailed near Middlebury, Pa., engineer killed.
13. Train wrecked near Milligan, Ind., 1 killed. Fires: Bradford, Pa., loss, \$150,000; Barnesville, Ohio, loss, \$100,000.
14. Floods in Pennsylvania, estimated loss, \$500,000. Train wrecked near Noland, New Mexico, 1 killed, 1 hurt.
15. Train falls through an open drawbridge near Boston, Mass., 1 drowned.
16. Explosion and fire at Butte, Mont., 53 killed, 100 hurt, estimated loss of property, \$1,000,000. Train wrecked near White Plains, Nev., 1 killed, 2 hurt, probably the result of malice.
18. Fire in Macon, Ga. (see end of January).
19. Destructive avalanches in Switzerland.
20. Steamboat sinks in the Ohio river, 12 lives lost. Earthquake in Persia: city of Kuchan partly destroyed, with large loss of life.
22. Trains wrecked near Carmen's Interchange and Duchesne Run, in Pennsylvania, 3 killed, 3 hurt.
24. Shipwreck: steamer Chicora sinks in Lake Michigan, 27 lost. Famine threatened in St. John's, Newfoundland.
25. Intense cold in the Northwestern United States. Train wrecked near Itta Bena, Miss., 1 killed, 2 hurt.
- 26-29. Trains wrecked near Salisbury, N. C., 1 killed, 2 hurt; Coatesville, Ind., 2 killed, 27 hurt; Brainard, Minn., 1 killed.
30. Shipwreck: North German Lloyd steamer Elbe sunk by collision in the North Sea by British steamer Craithie, lost 335, saved 22. Train wrecked near Olathe, Kan., cars take fire, 2 tramps killed.
31. Train wrecked near North Judson, Ind., 1 killed, 2 hurt. Fire: Holmes College burned, Jackson, Miss., loss, \$35,000.
- Fires in January: Anna, Ill., State insane asylum burned, loss, \$350,000; Springfield, Ohio, dwellings, \$200,000; Toronto, Ontario, business blocks, \$1,500,000; Macon, Ga., business block, \$715,000; Brooklyn, N. Y., fur-cutter's house, \$240,000; Hazleton, Pa., coal works, \$200,000; and 210 others; aggregate loss, \$11,875,600.
- Summary of train accidents for January: 55 collisions, 67 derailments, 7 others; total, 129. Killed: 23 employees, 4 passengers, 5 others; total, 32. Hurt: 54 employees, 45 passengers, 1 other; total 100.
- February 1. Fire: Cleveland, Ohio, Deaconess Hospital burned, 4 lives lost.
2. Train wrecked, Woodell, Pa., 1 killed, 3 hurt. Building falls in Dortmund, Germany, 30 killed.
3. Fire: Rochester, Pa., glass works burned, loss, \$150,000.
4. Explosion: fire damp in a French colliery, about 40 killed.
5. Fire: Lima, Ohio, business houses and theaters burned, loss, \$100,000.
- 6-12. Intense and unprecedented cold in the United States east of the Rocky Mountains and over a large part of western Europe; storms of great violence prevailed; the temperature ranging from 12° above zero in Florida to 60° below zero in Canada; widespread suffering, destitution, and death.
7. Train wrecked near Purvis, Miss., 3 tramps killed. Fires: Evansville, Ind., loss, \$100,000; Jackson, Miss., Bolhaven College burned, loss, \$50,000; Indianapolis, loss, \$100,000.
8. Fire: Fishkill Landing, N. Y., loss, \$100,000.
9. Fires at St. Joseph, Mo. (see end of February), and Harrisburg, Pa., State printing house burned, loss, \$100,000. Train wrecked near Verona, N. Y., 1 killed.
10. Terrible storm in Ireland, coldest weather known for forty years. Train wrecked near Grundy City, Iowa., 1 killed, 3 hurt.
11. Many deaths from cold and exposure reported in Great Britain. Train wrecked near Dover, N. H., 2 killed, 12 hurt.
12. Fire: Mount Holly, N. J., hotel burned, loss, \$150,000.
13. Fire: Lynn, Mass., loss, \$100,000.
14. Heavy snow in Texas and the Southwestern States, many of the large herds of cattle lose 25 per cent. of their number by exposure. Cholera epidemic in Constantinople.
15. Train wrecked near Rhinecliff, N. Y., 1 killed, 1 hurt.
17. Trains wrecked in Kansas and Oklahoma, several lives lost and many injured.
18. Famine in East Africa, caused by ravages of locusts. Fire: Buffalo, N. Y., Music Hall burned, loss, \$300,000.
19. Train wrecked near Credo, W. Va., 1 killed, 2 hurt. Skating accident, 30 students drowned near Moscow. Gun bursts at the Sandy Hook proving grounds, Lieut. F. C. Peck killed.
20. Explosion: powder magazine in Formosa blows up, about 2,000 Chinese soldiers killed. Fire: Hamilton, N. Y., loss, \$238,000.
- 23-24. Trains wrecked near Greenville, Ala., 1 killed, 7 hurt; and Malone, N. Y., 1 killed, 4 hurt.
27. Explosion in a coal mine near Cerrillos, New Mexico, 25 killed.
28. Train wrecked near the city of Mexico, 75 killed, many hurt.
- Fires in February: Monaca, Pennsylvania, glass works, loss, \$150,000; Cincinnati, Ohio, tobacco house, \$300,000; St. Joseph, Mo., railroad station, \$300,000; Mount Holly, N. J., hotel, \$150,000; Paterson, N. J., silk mills, \$300,000; Hamilton, N. Y., sundry buildings, \$240,000; Brooklyn, N. Y., coffee mills, \$250,000; Minneapolis, warehouses, \$160,000; Chicago business houses, \$280,000; Halifax, Nova Scotia, warehouses, etc., \$600,000; Kingston, N. C., sundry buildings, \$225,000. Total number of fires, 216. Aggregate loss, \$12,360,200.
- Summary: Train accidents in February, 43 collisions, 92 derailments, 8 others; total, 143. Killed: 13 employees, 2 passengers, 3 others; total, 18. Hurt: 75 employees, 44 passengers; total, 119.
- March 1. Buildings fall in New York, 5 killed, 19 hurt. Train derailed near Bayonne, N. J., a second train in collision with the wreck, 2 killed, 3 hurt. Fire: lumber yards burned, Ottawa, Canada, loss, \$100,000.
2. Locomotive boiler explodes, Weems, Ala., train wrecked, 2 killed.
3. Third fire in Toronto, Ontario (see end of March).
4. Train derailed by malice, Ozark, Ark., 1 killed.
5. Train derailed, Beaufort, Tenn., 1 killed. Trains derailed and in collision near Scotland, Ga., 2 killed, 2 hurt. Locomotive boiler explodes near Cove, Pa., mail and baggage cars derailed, 2 killed, 1 hurt.
10. Train derailed by fallen rocks near Newton, Pa., 1 killed.
11. Shipwreck: Spanish man-of-war Reine Regente sinks off Cape Finisterre, all hands lost, 420 men. Locomotive machinery breaks near Dykes, N. Y., 1 killed, 1 hurt. Train derailed near Dickenson, Texas, 1 killed, 1 hurt.
12. Trains in collision, Elvins, Mo., 1 killed, 2 hurt.
13. Fire: workshop of Nicola Tesla, the famous electrician, burned, in New York. Train derailed by washout near Troy, Ala., 2 killed, 3 hurt; another near Allegheny City, Pa., 1 killed, 1 hurt.
14. Destructive hurricane in the Fiji Islands.
16. Explosion: fire damp in Australian coal mines, 50 lives lost.
16. Train derailed, Oakwoods, Texas, 1 killed, 2 hurt.
17. Fire: roundhouse burned, Toledo, Ohio, 3 killed, 9 hurt. Train derailed near Natural Tunnel, Va., 2 fatally hurt.
18. Passenger car on 2-foot narrow-gauge railroad overturned by wind near Strong, Me.
20. Tornado in northern Georgia, much damage results. Explosion: dynamite in transit on the river Rhine, 25 killed. Trains in collision near Hinckley, Ill., 2 killed.
21. Explosion in mine near Evanston, Wyo., 60 killed.



24. Hotel burned in Denver, 4 firemen killed. Disastrous gale in Great Britain, many lives lost.

27. Fire in Milwaukee (see end of March).

30. Train falls through trestle near Portsmouth, Ohio, 18 cars in the wreck, one of them, loaded with matches, becomes ignited and all are burned.

31. Train derailed near Newcomerstown, Ohio, 4 tramps badly hurt.

Fires in March: Toronto, Ontario, business houses burned, loss, \$1,140,000; Bethalto, Ill., flour mill, \$200,000; Kansas City, Mo., machinery, \$340,000; Burlington, Vt., factory, \$250,000; Sioux City, Iowa, warehouses, \$400,000; New Orleans, cotton press, \$500,000; Kansas City, Mo., packing house, \$700,000; Milwaukee, Wis., business blocks, \$890,000; Chicago, clothing stores, \$225,000; St. Augustine, Fla., buildings, churches, etc., \$200,000; and 219 others; aggregate loss, \$14,239,300.

Summary of train accidents in March: 36 collisions, 81 derailments, 9 miscellaneous; total, 126. Killed: 21 employees, 2 passengers; total, 23. Hurt: 61 employees, 19 passengers; total, 80.

April 1. Train derailed near Elmira, N. Y., 1 killed.

3. Train wrecked near Pocatello, Ida., 9 hurt (the railroad company settled with many of the injured by paying damages as high as \$100 on the spot).

5. Train wrecked near Alton, Ill., about 75 tramps on board, 4 killed, 15 hurt. Near Whigville, Ohio, a train derailed on a trestle falls 50 feet, 4 killed, 3 hurt.

6. Train wrecked near Cammal, Pa., 1 killed, 5 hurt.

7. Train derailed near New Castle, Wyo., 1 man killed by a bent rail thrusting itself through the caboose.

8. Landslide near Marion, N. C., wrecks a train, 2 killed.

9. Disastrous floods in New England and the Middle States. Punxatawney, Pa., a washout wrecks 16 cars and kills 2 men; another near Germin, in the same State, kills 1. Explosion: Blue Cañon Mine, Wash., 20 killed. Building falls, Wheeling, W. Va., 6 killed, 4 hurt.

10. Explosion at Shanghai, China, 40 soldiers killed.

12. Train wrecked, probably through malice, near Afton, Tenn., 3 hurt.

14. Earthquake in Austria and northern Italy, several lives lost.

18-21. Trains wrecked near Dayton, Ohio, 1 killed, 1 hurt; Stevens, Va., 1 killed; Garfield, Wash., and St. Elmo, Ill., 3 killed, 2 of them tramps.

21. Fire: School of Arts burned at Chalons-sur-Marne, France, much valuable machinery ruined.

23. Fire: tobacco factory burned in Montreal.

28. Dam bursts near Bougy, France, 130 lives lost. Train wrecked near South Brewer, Me., 1 killed.

Fires in April: East Orange, N. J., electrical works burned, loss, \$245,000; Columbus, Ind., starch works, \$200,000; Wheeling, W. Va., warehouses, etc., \$200,000; Pasadena, Cal., hotel, \$500,000; Ardsmore, Indian Territory, business blocks, \$500,000; Glen Carbon, Ill., brick works, \$250,000; Plattsburg, Mo., courthouse, etc., \$300,000; Philadelphia, bakery, etc., \$275,000; New York, grocery warehouse, \$300,000; Montreal, tobacco factory, \$500,000; and 185 others; aggregate loss, \$11,018,150.

Summary of train accidents in April: 33 collisions, 75 derailments, 9 miscellaneous; total, 117. Killed: 17 employees, 3 passengers, 7 others; total, 27. Hurt: 50 employees, 21 passengers, 19 others; total, 90.

May 1. Tornado in Kansas, 10 lives lost, many buildings wrecked.

3. Tornado in Iowa, more than 100 lives lost.

4. A locomotive runs away near Clarksville, Ark., collision results, in which 13 are hurt. Trains wrecked near Farmland, Ind., and Hyde Park, Mass., 3 killed, 1 hurt.

6. Destructive storms in the West and South.

10. A wrecking train breaks down a flooded bridge near Massillon, Ohio, 1 drowned, 4 hurt.

11. Beaver Falls, Pa., train thrown into the river and 1 man drowned. Union Point, Ga., a misplaced switch wrecks a train and hurts 3 persons. Train

wrecked near Elizabethport, N. J., 1 killed, 1 hurt. Signal man found guilty of manslaughter. A landslide wrecks a train near Mount Union, Pa., 17 loaded coal cars carried into the Juanita river. Killing frosts occur in most of the Northern States.

12. Trains wrecked at Middleburg, N. C., and Hornellsville, N. Y., 3 killed, 2 hurt. Crops damaged by frost in New York and Pennsylvania.

14. Trains wrecked near West Bend, Iowa, and Silex, Mo., 3 killed, 20 hurt.

16. Train wrecked near Saratoga, N. Y., 1 killed.

18. Train wrecked by malice near Jacksonborough, S. C., 5 hurt; also near Bound Brook, N. J., 1 killed, 4 hurt. Fire: buildings burned in London, loss, \$1,000,000.

19. Earthquake near Florence, Italy, many famous buildings seriously damaged, several lives lost.

21. Explosion of nitroglycerin at Pinole, Cal., 14 killed.

21-23. Trains wrecked near Pavonia, Ohio, 1 killed; Cheyenne, Wyo., 2 killed; Danville, Ky., 2 tramps killed.

28. Shipwrecks: American steamer Colima sinks off Manzanillo, Mexico, and French steamer Don Pedro off the Spanish coast, 100 lives lost.

29. Train wrecked near Reno, Nev., 1 tramp killed.

30. Mischievous boys near Providence, R. I., cause the wreck of 4 cars, 2 men hurt. Train wrecked near Deer Park, Texas, 2 killed, 3 hurt.

31. Circus train wrecked near Escambia, Mich., 5 hurt.

Fires in May: Buffalo, N. Y., tannery burned, loss, \$250,000; Port Huron, Mich., grain elevator, \$187,000; Coney Island, N. Y., sundry buildings, \$350,000; St. Albans, Vt., business block, \$360,000; Steven's Point, Wis., pulp mills, \$150,000; Cambridgeport, Mass., \$131,000; Toledo, Ohio, mills, etc., \$140,000; Henderson, Ky., tobacco warehouses, \$135,000; and 167 others; aggregate loss, \$7,761,350.

Summary of train accidents in May: 47 collisions, 58 derailments, 6 miscellaneous; total, 111. Killed: 16 employees, 3 passengers, 6 others; total, 25. Hurt: 62 employees, 62 passengers, 3 others; total, 127.

June 2. Train wrecked, Great Springs, W. Va., 3 tramps hurt; another near Oxford, Neb., 4 killed, 1 hurt.

5. Car derailed near Goshen, N. Y., thrown to other track where it was immediately run into, and 31 cars wrecked, 2 men hurt. Train derailed near Darien, N. Y., wreck catches fire, 50 cars burned, 3 men hurt. Flames extinguished by residents.

6. Trains wrecked near Locustdale, Pa., and Benton, Ark., 6 killed, 6 hurt, 30 cars wrecked.

8-9. Trains wrecked near Dunham, Ala., 1 killed; Logansport, Ind., 1 killed, 1 hurt; and Dixon, Ill., 2 killed, 1 hurt.

10. A relief train carrying a fire engine to Cameron, W. Va., is wrecked near Rosby's, 3 killed, 3 hurt, some of them firemen. Train wrecked near Sidney, Ohio, 3 tramps killed, 4 tramps hurt.

11. Train wrecked near Sargent, Pa., 15 tramps on board, 1 killed, 2 hurt; a bad oil fire ensues, other tramps supposed to have perished. Trains wrecked near Collins, Pa., and Quincy, Ill., 3 killed, 3 hurt.

16. Train derailed near Hardyville, S. C., 3 tramps killed, 1 employee hurt.

19. Train wrecked near Bedford, Ind., several tramps hurt.

20-25. Trains wrecked near Barry, Pa., 2 tramps and 2 employees hurt; Eureka, Texas, 6 hurt; Noland, New Mexico, 1 killed, 2 hurt; Copake, N. Y., 8 hurt; Milledgeville, Ga., 1 killed, 2 hurt; and Aiken, S. C., 5 killed, 1 hurt. The last accident probably caused by malice.

Fires in June: Newark, N. J., brewery burned, loss, \$275,000; Kalamazoo, Mich., lumber, etc., \$220,000; Cameron, W. Va., sundry, \$220,000; South Chicago, Ill., business block, \$200,000; New York, theater, \$300,000; Greenville, Ohio, sundry, \$225,000; Minneapolis, warehouse, \$260,000; San Francisco,

sundry, \$1,000,000; and 154 others; aggregate loss, \$9,223,000.

Summary of train accidents in June: 40 collisions, 55 derailments, 4 others; total, 99. Killed: 22 employees, 2 passengers; 11 others; total, 35. Hurt: 51 employees, 17 passengers, 15 others; total, 83.

July 1. Train wrecked, Laughlin, Pa., 1 killed, 1 hurt. Fire: Godillot's military outfit establishment in Paris burned, loss, about \$1,000,000.

2-3. Trains wrecked near Middlesburg, Ky., 1 killed, 1 hurt; Niantic, Ill., 2 killed, 1 hurt.

6. Waterspouts, tornadoes, and violent storms of destructive force in various parts of the Mississippi valley. Train derailed at Pekin, Ill., 1 killed, 4 hurt.

9. Fire: 230 houses burned at Sambrow, Poland. Excursion train carrying Canadian pilgrims to the shrine of St. Anne of Beaupré wrecked near Levis, Canada, 13 killed, 30 hurt. Trains wrecked near Ocean View, Cal., and Town Creek, Pa., 2 killed, 1 hurt.

10. Fall of Casino roof in Atlantic City, upward of 100 killed or hurt.

11. Fire at Hesse-Nassau, Germany, 10 killed, many left homeless. Trains wrecked at White Sulphur, Ohio, and Ponchataula, La., 2 killed, 2 hurt, 21 cars wrecked.

12. Extensive forest fires in northern Michigan.

13. Tornado near New York city, 5 killed, many hurt.

14. Train wrecked near Handley, Texas, 2 killed.

17. Railway trestle breaks near Monument, Col., 3 killed, 13 hurt, 11 of the latter tramps. Thirteen cars wrecked near Plymouth, Pa., 1 killed, 1 hurt.

19. Violent storms in the West, many lives lost and buildings wrecked. Trains wrecked at Fort Payne, Ala., and Pleasant Hill, N. C., 3 killed, 2 of them tramps.

21. Disastrous storms continue at the West, with further sacrifice of life. Fire: oil mill burned at Chicago, loss, \$800,000. Shipwreck: Italian steamer Ortegia sunk in collision with the Maria P. in the Gulf of Genoa, 150 lives lost.

25. Mine flooded in Japan, 47 drowned.

26. Explosion: fire damp in a mine in Westphalia, 30 killed. Train wrecked, Greenville, Pa., 1 killed.

28. Troop train wrecked near Kobe, Japan, 114 killed.

29. Cholera epidemic in Japan, nearly 5,000 fatal cases reported.

30. Floods near Fort Scott, Kan., 2 lives lost.

31. Landslide and furious storm near Adelaide, Col., train derailed, 2 men drowned.

Fires in July: Wellington, Ohio, nearly ruined, \$150,000; New Westminster, British Columbia, mills and factories burned, loss, \$165,000; Scotia, Cal., lumber, \$250,000; Oswego, N. Y., sundry, \$153,000; Lewiston, N. Y., steamer and hotel, \$265,000; Cincinnati, grain warehouses, \$175,000; Chicago, oil mills, \$400,000; Glen Hafen, Pa., lumber, \$175,000; New York, office building, \$150,000; Menominee, Mich., \$500,000; and 163 others; aggregate loss, \$9,085,000.

Summary of train accidents in July: 33 collisions, 52 derailments, 3 others; total, 88. Killed: 16 employees, 1 passenger, 8 others; total, 25. Hurt: 48 employees, 19 passengers, 9 others; total, 76.

August 2. Coal mine flooded at Saltcoats, Scotland, 14 lives lost. Train wrecked near Canton, Ohio, 13 tramps on board, 2 killed, 5 hurt.

3. Trains in collision near Norwich, Ohio, wreck takes fire, 1 killed, 1 hurt; also near Coekran's Mills, Pa., and Middletown, N. Y., 2 killed, 2 hurt.

4. Fire: car shops burn at Sprague, Wash. Train wrecked near Kimberton, Pa., 1 killed, 7 hurt.

8. Shipwreck: British steamer Atherton sinks off Sidney, 54 lives lost. Trains wrecked at Plymouth, N. H., and Great Falls, Mont., 3 killed, 5 hurt.

9. Trains derailed, Crowell, New Brunswick, and Shelton, Wash., 4 killed, 3 hurt.

10. Train derailed by a broken drawbar near St. Paul, Ind., 10 tramps on board, 1 killed, 5 hurt.

11. Extensive forest fires in the Northwest, 2 lives lost. Trains wrecked at Cameron, W. Va., and Bain-

bridge, Ohio; at the latter place 20 cars fell into the Paint river, 50 feet.

14. Train derailed near Pomfret, Conn., 3 tramps killed, 1 hurt.

15. Fire in Przytyk, Poland, probably of incendiary origin, 4,000 persons rendered homeless. Trains wrecked at Liberty Park, N. J., and Temple, Texas, 3 killed, 35 hurt.

16. A party of boys switched off some cars to a side track near Aurora, Ill., a collision resulted, and as a car was loaded with sulphuric acid one of the boys met a terrible death and 5 of his companions were dreadfully burned.

18. Train wrecked near Three Bridges, N. J., 1 killed.

19. Steam boiler explodes in a hotel at Denver, 26 killed, building burned.

20. Train wrecked near Lawrenceburg, Ind., 1 killed, 1 hurt.

21. Coliseum building falls in Chicago, loss about \$200,000. Train wrecked at Pamplin's, Va., 2 killed.

22. Dynamite maliciously placed on the track near Butte, Mont., nearly the whole train passes before explosion, 1 car wrecked, 1 person hurt.

24. Train wrecked at Pulaski, N. Y., 1 tramp killed, 2 tramps hurt.

25. Trains derailed at Richmond Beach, Wash., and Edgemont, S. Dak., 2 killed.

27. Trains wrecked at Runge, Texas, Sullivan, Mo., and Fisher, Col., 4 killed, 3 hurt.

30. Train derailed by malice near Portland, W. Va., 10 cars thrown into the Ohio river, station fired. Train wrecked, Pope's Ferry, Ga., 2 killed, 8 hurt, and at Erie, Pa., 2 killed.

31. Trains derailed at Craryville, N. Y., and Huntington, Pa., 2 killed, 1 hurt.

Fires in August: Sprague, Wash., railroad property burned, loss, \$1,000,000; Berlin, Md., sundry, \$200,000; Warren, Mass., factory, \$375,000; Lockport, Ill., sundry, \$250,000; Newark, N. J., factory, \$500,000; Philadelphia, factory, \$250,000; Bingham, Utah, sundry, \$200,000; Milwaukee, Wis., warehouses, \$250,000; Cincinnati, warehouse, \$190,000; and 172 others; aggregate loss, \$9,929,000.

Summary of train accidents in August: 53 collisions, 71 derailments, 8 others; total, 132. Killed: 30 employees, 8 passengers, 11 others; total, 49. Hurt: 41 employees, 78 passengers, 21 others; total, 140.

September 1. Earthquake shock in New York, New Jersey, Pennsylvania, and Delaware. Fire: Academy of Music burned in Buffalo, loss, \$250,000.

2. Runaway locomotive near Woodlawn, N. Y., in collision with passenger trains, 2 killed, 40 hurt.

5. Floods in eastern Mexico, much suffering among the peons.

6. Fire in copper mine near Houghton, Mich., 35 lives lost.

7. Trains in collision at Blanchet, Ky., 2 killed.

Train derailed at Monmouth, Kan., 13 hurt.

8. Widespread forest fires in Wisconsin.

9. Train derailed by a washout, Neosho, Mo., 1 killed, 1 hurt.

10. Train derailed at Evansville, Wis., 2 killed. Train in collision at Sealy, Texas, 1 killed, 2 hurt.

11. Trains in collision at Melville, Minn., 13 hurt.

12. Trains in collision, Altona, Ill., 1 killed, 1 hurt.

15. Train derailed, Collinsville, Ill., 1 killed, 2 hurt.

16. Trains derailed, Bonnieville, Ky., and Annandale, Minn. Altogether 1 killed, 18 hurt, 4 of them tramps.

18. Train wrecked, Greensburg, Ind., 1 killed, several hurt.

19. Shipwreck: Spanish war ship Sanchez Barcaize-tegui in collision, 35 drowned, including Admiral Parejo and several other officers.

21. Trains in collision at Drummond and Percy, Ill., 3 killed, 2 hurt, all tramps.

22. Heavy snow and frost in Colorado. Destructive prairie fires in south Oklahoma.

23. Train derailed, Gypsum City, Kan., 1 killed, 1



hurt. Also, Washington, Ill., 2 killed. Floods in eastern Siberia.

25. Train derailed, Lumberton, Miss., probably by malice, 1 killed.

26. Trains in collision at Tunnelton, W. Va., 12 hurt.

27. Trains in collision at Gallinan, Miss., fireman killed, also 1 tramp and 2 train hands. Train derailed by running over a mule, Annada, Mo., 11 hurt. Train derailed by fallen tree, Stony Creek, Pa., engine and 15 cars wrecked because the man who cut down the tree did not know enough to flag the train.

30. Train derailed, Croton, N. Y., 2 tramps killed, 1 train hand hurt.

Fires in September: Buffalo, N. Y., Academy of Music, loss, \$250,000; East Boston, Mass., warehouses, \$347,000; Oshkosh, Wis., factories, \$275,000; Indianapolis, business houses, \$350,000; Fond du Lac, Wis., lumber, etc., \$250,000; Philadelphia, Pa., warehouses, \$275,000; Cincinnati, Ohio, tobacco, \$190,000; and 212 others; aggregate loss, \$10,766,300.

Summary of train accidents in September: 50 collisions, 54 derailments, 4 others; total, 108. Killed: 25 employees, 2 passengers, 11 others; total, 38. Hurt: 53 employees, 114 passengers, 12 others; total, 179.

October 3. Train wrecked, Hulen, Texas, 1 killed, 8 hurt.

5. Trains wrecked at Red Oak, Ga., and Blackstone, Junction, Mass., 3 killed, 2 hurt.

7. Trains in collision, Bethune, Col., 1 killed, 2 hurt.

9. Train wrecked, Manor, Pa., 1 killed, 25 hurt.

15. Train wrecked, Bradford, Pa., 1 killed, 2 hurt.

17. Trains wrecked, East St. Louis, Mo., and Amagansett, N. Y., 3 killed, 5 hurt.

18. Train derailed, Ceylon, Ind., 3 killed, several hurt.

20. Train wrecked, Bond Hill, Ohio, 1 killed, 2 hurt.

23. Witheville, Va., train wrecked, 3 killed.

24. Trains wrecked, Hyde Park, Mass., Valley Junction, Iowa, and Bailey's, Pa., 5 killed, 32 hurt.

Fires in October: At Philadelphia, factory, loss, \$240,000; Cambridge, Ohio, sundry buildings, \$200,000; Warren, R. I., cotton mills, \$1,250,000; Green Bay, Wis., lumber, \$100,000; Portsmouth, Va., warehouse and lumber, \$250,000; New Orleans, rice mills, \$500,000; Algiers, La., sundry buildings, \$425,000; Gibsonburg, Ohio, sundry buildings, \$250,000; Glassboro, N. J., glass works, \$276,000; and about 150 others; aggregate for the month, \$13,411,500.

Summary of train accidents in October: 60 collisions, 64 derailments, 7 others; total, 131. Killed: 40 employees, 3 passengers, 6 others; total, 49. Hurt: 73 employees, 97 passengers, 3 others; total, 173.

November 2. Train wrecked, Edgeworth, Mass., 2 killed, 11 hurt.

3. Train wrecked, Waxahatchie, Texas, 1 killed, 22 hurt. Elm Grove, W. Va., 2 killed, 25 hurt. Collision: Electric car and road wagon, Dayton, Ohio, 15 hurt; horses paralyzed by an electric shock in crossing track, collision ensued.

10. Train wrecked, Franklin, Tenn., 2 killed. Locomotive boiler explodes, Warwick, N. Y., 4 killed.

12. Train wrecked, America, Ala., 4 killed, 2 hurt.

16. Electric car falls through open drawbridge, Cleveland, Ohio, 19 killed.

19. Fast mail train maliciously wrecked by 4 boys near Rome, N. Y., 2 killed, 11 hurt; alleged object of miscreants, plunder. Train wrecked on East River Bridge, New York and Brooklyn, 2 killed, 2 hurt; cause, fog.

25. Explosion of cartridges at Barcelona, Spain, 70 killed. Train wrecked, Lamar, Miss., 2 killed.

29. Mining accident, Brewsters, N. Y., 13 killed.

Fires in November: Walcott, Minn., flour mills, loss, \$150,000; New York, 2 fires, business houses, \$150,000 and \$1,000,000; North Penn Junction, Pa., nail works, \$175,000; York, Pa., wall paper, \$200,000; Meridian, Miss., cotton, \$350,000; Dallas, Texas, business houses, \$175,000; Chicago, business houses, 2

fires, \$500,000 and \$400,000; and about 168 others; aggregate, \$10,131,500.

Summary of train accidents in November: 80 collisions, 62 derailments, 4 others; total, 146. Killed: 38 employees, 4 passengers, 4 others; total, 46. Hurt: 87 employees, 78 passengers, 4 others; total, 169.

December 17. Explosion and shipwreck, German ship Athena, off Cape May, N. J., 13 lives lost.

19. Explosion in mine, Cumnock, N. C., 38 killed.

21. Explosion in mine, Dayton, Tenn., 24 killed.

23. Disastrous floods in Southwestern States. Many lives lost. Estimated destruction of property, \$5,000,000.

27. Panic caused by cry of "Fire!" in a theater, Baltimore, Md., 23 killed, 30 hurt.

30. Violent and destructive storm on the north Atlantic coast.

Fires in December: Indianapolis, business houses, loss, \$485,000; Chicago, business houses, \$330,000; San Francisco, business houses, \$250,000; Monmouth, Ill., plow factory, \$200,000; Council Bluffs, Iowa, warehouse, \$260,000; New York (city), warehouse, \$250,000; Baltimore, clothing stores, etc., \$350,000; total number of fires, 222; aggregate loss, \$10,018,800.

Total number of fires in the United States in 1895: 2,418, not counting those where the loss was less than \$10,000. Aggregate loss for the year, \$129,839,700.

Summary of train accidents in December: 72 collisions, 79 derailments, 6 others; total, 157. Killed: 41 employees, 4 passengers, 3 others; total, 48. Hurt: 84 employees, 107 passengers, 8 others; total, 199.

Summary of train accidents for 1895: 602 collisions, 810 derailments, 75 others; total, 1,487. Killed: 302 employees, 38 passengers, 75 others; total, 415. Hurt: 739 employees, 701 passengers, 95 others; total, 1,535.

**DISCIPLES OF CHRIST.** The general missionary meetings of the Disciples of Christ were held in Dallas, Texas, beginning with the twenty-first annual meeting of the Christian Woman's Board of Missions, Oct. 18. The treasurer's report showed that the collections during the year had amounted to \$64,192, which, with the addition of a balance from the previous year of \$17,040, made the total resources \$81,232. Of this sum \$75,517 had been disbursed. The whole amount of the collections for the twenty-one years of the existence of the board was \$424,987. The children's mission bands and junior societies, with 10,750 members, had contributed a "Little Missionary fund" of \$5,548. The society had nearly 50 missionaries laboring in the United States, India, and Jamaica, and was sustaining an academy at Hazel Green in the mountains of Kentucky and 2 chairs for instruction in the English Bible in the University of Michigan; while the State organizations associated with it were supporting several evangelists in the West and a Chinese Mission in Portland, Ore. The erection of a missionary training school in Jamaica was considered.

The Foreign Christian Missionary Society met on Oct. 21. The receipts for the year had been \$83,514, showing a gain of \$10,256 over those of the previous year. A movement instituted in 1894 to enlist a larger number of churches in the work of the society had resulted in increasing the number of contributing churches from 1,806 to 2,403, or from about 25 per cent. to 33½ per cent. of the whole number. A One Dollar League organized in the Sunday schools had enlisted the co-operation of 2,100 pupils, some of whom raised \$6, while others raised from \$2 to \$3 each. The Endeavor societies had been asked to raise \$5,000 with which to erect a building in



Tokio, Japan ; and the Young People's Heathen Building fund had been started to raise \$20,000 on a system of shares. The society had about 140 missionaries and helpers laboring in England, Scandinavia, Turkey, India, Japan, and China, where the Gospel was preached at 59 stations and out stations. About 8,000 members had been received into these churches since the work began. Schools were sustained in India, China, and Japan.

The General Christian Missionary Convention—which has charge of domestic missionary work—met Oct. 22. The total receipts for the year had been \$23,642, while \$52,858 had been raised by the missionaries. Fifty-four missionaries had been employed, under whose labors 2,650 persons had been brought into the church (including 341 by letter), 1,703 baptized, 13 churches organized, and 68 new places visited. Besides this work, 37 States and 3 provinces had missionary organizations, which together employed 438 missionaries, whose work had given 21,418 accessions, and who had organized 186 churches and 274 Sunday schools. For these State missions \$235,667 had been raised during the year. Adding to this amount that raised by the General Board and its missionaries (\$76,500), \$24,017 by the Board of Church Extension, \$6,938 by the Board of Negro Education and Evangelization, \$10,348 for city evangelization, \$203,475 for colleges, \$600,000 for church building, and \$7,360 for benevolence, the whole year's contributions of the Disciples for home work footed up to \$1,164,305. Besides the stationed missionaries, a considerable number of evangelists had been sent out, who had labored effectively in many places. With the aid of a fund contributed in special gifts a systematic effort had been begun at evangelization in the great cities. The name of the convention was changed to American Christian Missionary Society.

The receipts of the Board of Church Extension (\$24,017) were \$2,114 more than those of the previous year. Loans had been made to the amount of \$22,725, and a considerable number of loans ranging from \$75 to \$1,500 each had been promised, to be paid upon the completion of the buildings and the furnishing of satisfactory security. The National Superintendent of Sunday Schools estimated the number of Disciples' schools in the United States to be about 7,500, with an aggregate enrollment of 675,000 pupils. The term Bible school was adopted to designate these schools. The National Superintendent of Christian Endeavor reported 3,096 societies, an increase during the year of 650 societies. The report on junior societies gave the number as 892. The report on negro education and evangelization showed that the work was increasing in efficiency. Resolutions were passed at the meet-

ings asking the United States Government to take prompt measures for the protection of the missionaries in China, and commending the governors of Texas and Arkansas for their energy in preventing a prize fight which had been arranged to be fought first in the former State and afterward, when not permitted there, in the latter.

**DOG SHELTERS.** The most famous establishments in which lost, strayed, and captured dogs are cared for, are at Battersea, London, England, and *La Fourrière* in Paris, which is also a police adjunct. Under an act of the Legislature shelter has been provided in New York for homeless and unlicensed dogs, and so successful has it proved that another one has been established in Brooklyn. The dog-catching powers have been placed where they should be—in the hands of The American Society for the Prevention of Cruelty to Animals—and instead of an incentive to theft and cruelty in the form of a payment of from 30 to 50 cents for each dog captured the men who go about after the city's surplus dogs are paid a salary, are placed under bonds, and are dismissed at once when an act of cruelty is proved against them. No longer is the old dog cart, with its brutal and ignorant catcher, sent about to take up the homeless, starving, and dangerous dogs, throw them carelessly into a pen, and let them suffer three days or more before being drowned. Neat and comfortable ambulances go about the streets, to take to the commodious shelter at 102d Street and East River all the stray, maimed, homeless, or injured dogs and cats that may need care. John P. Haines, President of The American Society for the Prevention of Cruelty to Animals, who succeeded in getting the legislation that



THE AMBULANCE.

accomplishes these wonders, is in daily receipt of postal cards and letters asking him to send his men to get dogs. The law referred to contains these provisions :

Every person who owns or harbors one or more dogs within the corporate limits of any city having a population of over 800,000 shall procure a yearly license and pay the sum of \$2 for each dog, and in applying for such license the owner shall state in writing the name, sex, breed, age, color, and markings of the dog.



Licenses granted under this act shall date from the 1st day of May in each year, and must be renewed prior to the expiration of the term by the payment of \$1 for each renewal.

Each certificate of license or renewal shall state the name and address of the owner of the dog, and also the number of such license or renewal.

Every dog so licensed shall at all times have a collar about its neck with a metal tag attached thereto bearing the number of the license. Such tag shall be supplied to the owner with the certificate of license, and shall be of such form and design as the society empowered to carry out the provisions of this act shall designate, and duplicate tags may be issued only on proof of loss of the original and the payment of the sum of \$1 therefor.

Dogs not licensed pursuant to the provisions of this act shall be seized, and, if not redeemed within forty-eight hours, may be destroyed or otherwise disposed of at the discretion of the society empowered and authorized to carry out the provisions of this act.

It is further provided that any cat found within the corporate limits of any such city without a collar

The passage of this law repealed the laws relating to seizure of dogs, and among these one of the most inhuman, useless, and unnecessary ever enacted—the law in regard to muzzling. By the provisions of the foregoing act The American Society for the Prevention of Cruelty to Animals was empowered to issue dog licenses and collect the fees therefor, provided that the society shall defray the cost of carrying out the provisions of the act and maintain a shelter for lost, strayed, or homeless animals.

The constitutionality of the law was at first strongly questioned, but it has been held by the courts that, while such a society is a private corporation, it may have functions to perform as the agent of the State which are for the public good and are essentially a police regulation.

The New York Dog Shelter is a long, low building, only 1 story in height and 100 feet long by 25 feet in width. It has accommoda-



CORRIDOR, SHOWING CAT-CAGES.

about its neck bearing the name and residence of the owner stamped thereon may be seized and disposed of in like manner as prescribed above for dogs.

The American Society for the Prevention of Cruelty to Animals is hereby empowered and authorized to carry out the provisions of this act, and the said society is further authorized to issue the licenses and renewals, and to collect the fees therefor, provided, however, that the said society shall defray the cost of carrying out the provisions of this act and maintaining a shelter for lost, strayed, or homeless animals.

tions for 300 dogs and 200 cats. The service consists of 5 ambulances and 2 other wagons, with 12 horses and the necessary stabling, the employees in all numbering 22 persons. These latter are in direct communication with the headquarters of the society, and make daily reports.

The Battersea Home for Dogs, in London, is the only one that can claim to be compared with the New York and Brooklyn Shelters. There the dogs are kept for a certain length of time, and

humanely put out of existence when not claimed. At *La Fourrière*, in Paris, they are simply drowned and their bodies carted away, unless the owner calls and can prove ownership within a very short time. The Battersea establishment has the assistance of the police of the metropolitan area, its operations extending throughout the city and county of London. In 1893 this home received 17,928 dogs. The New York Dog Shelter, unaided by the police, received in the first

The writer has often seen, under the old condition of things, a cage half as big as the bottom of a wagon full of wretched, frightened, injured, and famished dogs, big and little together, emptied over the top of the high board fence, inclosing the run in the old 16th Street pound, upon the hard floor below. Some of them had legs broken in the rude fall where they had no chance to save themselves; others were stunned and remained for hours lying



THE COOKING-APPARATUS.

eight months of its work 5,111 dogs; the total number of animals received was 22,028, of which 632 were lost animals restored to their owners. The first year the new dog law was tried and licensed dogs in New York were allowed to go unmuzzled the newspapers remarked that there was less hydrophobia than in many years. This was the first summer in many years when there was not a single paroxysm of popular apprehension of hydrophobia.

From 25 to 35 dogs and cats a day are now brought in by the society's agents. They are kept three days unless they are especially valuable, in which case the society tries to secure good homes for them, or in any case keeps them a little longer. If an owner or somebody else does not redeem an animal in three days, it is placed in the death chamber and asphyxiated.

The Dog Shelter at the foot of East 102d Street has the cool and refreshing background of the East River as one of its attractions during the summer time, when by far the larger number of the captured animals are brought in. In New York and Brooklyn about 150 dogs and cats are received each day. The former New York dog pound was dirty, disgracefully brutal in all its appointments, and the scene of constant recriminations, sometimes rows, between the owners of captured pets and the ruffians who had caught them or the officials in charge.

where they fell, moaning piteously. And then the poor creatures were driven, kicked, and crushed into the big iron cage, which would lower them into the water and still forever their half-human plaints.

Those old-time keepers, heroes of rattling matches and dog-pit escapades, enjoyed but one thing more than torturing the curs, which they called "ash barrels," and that was the capturing of some fine specimen from which they would tear the collar and chain and license mark, or pull it from its shrieking mistress's arms, and never let it get to the pound where it could be redeemed. The old dog pound caused a stench that could be perceived for blocks around, and the howlings of the inmates could be heard almost as far. From the wide-open door of the present shelter to the genial face of Keeper Read everything beams with humanity. The ambulances are often sent for to remove suffering animals. These ambulances are painted red. Back of the office the shelter is divided on one side into three long runs; on the other, it has kennels for the more valuable of the dogs and cages for the cats, while down the middle is an open space that enables visitors to walk through the place. In one of the long pens are the dogs brought in during the day, in another the bitches, and in another the animals condemned to the daily execution because their time is up. One of the most interesting features of the whole



establishment is the daily reception held here of people of all sorts who have lost pets.



CATS IN CAGES.

The sanitary arrangements of the shelter are perfect, floors, partitions, doors, windows, pens, feed troughs, and everything else being scrubbed every day and disinfected. There are engines and large boilers where the food is cooked for all

these four-footed guests. The dogs get heart, liver, and waste from neighboring butcher shops three times a day, and the cats get all the meat they can eat, and every morning a ration of milk.

It is a treat to see an ambulance come in. The vehicle is backed into the place so that escapes are impossible, and the dogs and cats are gently removed and placed in their runs. Each cat is in a little wicker basket by herself, safe from annoyance by the dogs.

The Brooklyn Shelter is in the geographical center of the City of Churches, at the corner of Malbone Street and Nostrand Avenue. The accommodations here are only to be regarded as temporary, but the place is meeting a want that has made itself felt in Brooklyn for a long time.

Illuminating gas is used for the humane destruction of the animals, as it has been found to produce death more quickly and painlessly than any other practicable agent. The license system, as it is carried out by the society, has proved to be a valuable security to the owners of dogs, and the liberal reward which the society offers for the detection of any person who may steal a dog bearing a license tag has proved to be an effectual preventive of larcenies of that kind. Cats, also, when they wear a collar, as required by the law, with the name and residence of its owner stamped thereon, can easily be recovered if they are captured while straying from their homes. The successful administration of the law would have been much more difficult than it has proved to be if the citizens of New York had not given their confidence and support to the society. The work has been both onerous and difficult, sometimes delicate; but the earnest endeavor of the society to act in the interest of the animals, and also of their owners, has been so fairly and fully appreciated that the burden of difficulty has been reduced to a minimum, and the officers of the society have been both cheered and encouraged by the consciousness of popular confidence and approval.

**DOMINION OF CANADA.** (See CANADA.)

## E

**EAST AFRICA.** The Sultan of Zanzibar formerly claimed sovereign rights over the coast of Africa from Cape Guardafui to the Rovuma, the northern boundary of the Portuguese colony of Mozambique, and maintained stations at all the trading points, the *termini* of the caravan routes, the northernmost being Warsheikh, in 30° of northern latitude. His influence extended inland along the commercial routes, which were kept open by the troops that he maintained for the purpose of convoying caravans. In 1884 agents of the German East African Association concluded treaties with native chiefs back of the coast opposite the island of Zanzibar. The association was chartered as the German East African Company, and received a patent of imperial protection from the German Government on March 3, 1885. In 1886 a joint commission, representing Ger-

many, Great Britain, and France, after determining that the Sultan's rights were confined to a strip of coast 10 miles wide, agreed that Germany should have a sphere of influence from the Rovuma northward to, and including the Kilimanjaro mountains, extending inland to the boundary of the Congo Free State, and that the region north of the German sphere between the Umbe and the Tana rivers, should be recognized as England's sphere of influence, save the sultanate of Vitu, with which Germany had concluded a treaty of protection. In May, 1888, the German company acquired by purchase from the Sultan of Zanzibar the right to administer and collect the customs of the mainland within the German sphere for the period of fifty years. The Imperial British East Africa Company, chartered by the British Government



on Sept. 3, 1888, obtained similar rights over the coast north of the Umbe as far as Kipini, on the Ozi river. In 1890 a new Anglo-German agreement was made, whereby Germany ceded to England the enclave of Vitu and recognized her right to acquire full sovereignty over the coast from the Umbe to the river Juba in 6° north latitude, and to establish a protectorate over the sultanate of Zanzibar, while England conceded to Germany the right to acquire all the rights of the Sultan over her part of the coast, for which she paid 4,000,000 marks. The coast north of the Juba had been abandoned by Great Britain to Italy in 1889. In October of the year 1891 British officials took charge of the administration of the remaining territory of the Sultan, Zanzibar and Pemba, and the smaller islands of Manda and Patta.

**British East Africa.**—The territory which the Imperial British East Africa Company undertook to develop and administer, to which, from the initials of the company's title, the name Ibea was given, has a coast line of 400 miles and extends inland an equal distance, to Lake Victoria. The British sphere embraced besides Uganda, Unyoro, Ankori, Mpororo, Koki, a part of Ruanda; also, according to British claims and agreements made with Germany and Italy, Emin Pasha's Equatorial Province and a part of Kordofan and Darfur, all of which were formerly subject to Egypt, as well as a large part of Somaliland. The total area is over 1,000,000 square miles. The company, whose capital was £2,000,000, of which £1,000,000 were paid-up shares, improved the harbor at Mombasa and built a road to Kibwezi, half way to Lake Victoria. The customs were collected, amounting to 214,872 rupees in 1891, 239,812 in 1892, and 261,554 in 1893. After the supersession of the Sultan's government in Zanzibar by British administrators the company sought to escape the annual payment of \$80,000 to the Sultan. The fear that the King of Uganda would accept a German protectorate led the company in 1890 to occupy that country with a military force. At the end of March, 1893, the company's forces evacuated that country, being succeeded by British troops, and on June 19, 1894, a British protectorate over Uganda was proclaimed. The administration of Witu was relinquished in July, 1893, and the authority of the Mohammedan Sultan was restored under a British protection and supervision. Treaties were made by the company with Somali chiefs in the north, and commercial intercourse with Gallaland established. A railroad route, 657 miles long, from Mombasa to Lake Victoria, was surveyed while the company held Uganda.

The imports of British East Africa in 1893 were 1,807,208 rupees in value, against 2,083,209 in 1892; the exports were 1,287,399 rupees, against 1,030,173. The shipping entered at Mombasa in 1893 had an aggregate tonnage of 100,602 tons; cleared, 100,308 tons.

The British East Africa Company, which had issued bonds at 2 per cent. for £450,000 and expended that amount, surrendered its charter and transferred its territory to the British Government on July 1, 1895. The Government paid £50,000 for the surrender of the charter and improvements behind the 10-mile strip, and Par-

liament voted £30,000 for the administration of the country, which includes the 10-mile strip leased from the Sultan of Zanzibar and the mainland between it and Uganda. The Sultan was made to pay £200,000 to the company to redeem the concessions granted to the company; but the interest at 3 per cent. on this sum, as well as the annual rent of £11,000 for the strip of coast territory, the British Government agreed to pay. The 10-mile strip and the country between it and Uganda were consolidated under a single administration, leaving the Zanzibar islands and the Uganda protectorate to be managed as before. The separate protectorate thus formed was placed in charge of officials subject to the authority of the consul general at Zanzibar, who also controls the affairs both of Zanzibar and of Uganda. The coast strip belonging to Zanzibar is still under the Sultan's sovereignty, and Mohammedan laws and religion remain established. The cost of administration for the protectorate, including the sultanate of Witu, was estimated at £30,000 a year. The revenue from customs amounted to about £15,000.

The British Government decided to build a railroad from the coast to Uganda. The proposed route is 657 miles in length. The cost is estimated at £2,700 a mile, £1,865,000 in all, including four years' interest during construction. The revenue is estimated, on the basis of £17 a ton between Mombasa and Lake Victoria, at £60,000, besides £33,500 saved on Government transport, which would make the income at the start nearly equal to the expenditures, counting the working expenses £40,000 and 3 per cent. interest on the debt £56,000. The House of Commons on Aug. 31 granted a preliminary vote of £20,000 to start the line, which is to be built and managed directly by the Government.

In the early part of 1895 the Masai became troublesome near the coast. They murdered Dr. Kolb and Dr. Kutehner, members of the Austrian Freeland expedition, which intended to found a eommunistic settlement near Mount Kilimanjaro. This expedition broke up before reaching its destination, the leader accusing the English officials of deliberately thwarting their object by detaining their arms and neglecting to provide the promised steamer and by instigating the natives to withhold supplies. The Somalis also made raids on the Tana river. In May an Arab chief, Mbaruk bin Rashid, who had a stronghold near Mombasa and a well-armed following of 1,200 runaway slaves, began to defy the British authorities, attacking missionary stations and capturing Europeans, whom he held for ransom. Sir Lloyd M. Mathews and the British consul general proceeded to the spot with 250 *askaris* from Zanzibar, 100 Sudanese from Witu, and a naval force consisting of 4 gunboats. On June 16 the native troops and 350 blue jackets landed, and after taking possession of the town of Takaungu burned 5 villages and destroyed crops, meeting only slight opposition. Capt. Raikes remained with a garrison of 100 Zanzibaris. The Arabs attacked on July 7, killing and wounding 3 officers and 7 men, in consequence of which a second punitive expedition went out under Admiral Rawson and Gen. Mathews. The troops took Mwele, the native stronghold, by storm,



with a loss of 2 killed and 8 wounded. Some of the rebel chiefs were killed, but Mbaruk escaped. He was the boldest and most powerful among a number of Arab chiefs that united in defying the British, and compelled the Europeans in the scattered stations to take refuge in Mombasa. Their stronghold consisted of 48 stockades, which were destroyed. The troops had no difficulty in driving the Arabs out of their positions by means of artillery and war rockets, but dared not follow them into the forest. In a few weeks they reassembled near Takaungu and a third punitive expedition burned the rebel chief's camp, but could not catch him.

**Uganda.**—The Government of Lord Rosebery decided to limit the protectorate in the region of the sources of the Nile to Uganda proper, which was declared a British protectorate on June 19, 1894. E. J. L. Berkeley was appointed commissioner, to be assisted by a staff of civil and military officers. The import of arms and the slave trade in the neighboring countries will be checked. The public force will continue to be Soudanese levies.

In the beginning of 1895 Major Cunningham and Lieut. Vandeleur went to Unyoro to renew the operations against Kabarega and extend the conquests of the company about Lake Albert and the Nile. They visited the 5 forts that held the shortest road to Lake Albert and reached Hoima, the headquarters of the force of Soudanese that was holding the country, and thence they proceeded to the Nile, and made a reconnaissance of the river in a steel boat carrying a Maxim gun. They passed Wadelai, where Major Owen raised a British flag early in 1894, and reached Dufile, where they learned that the dervishes had established a post at Rejaf, south of Lado, which was occupied by troops of the Congo State. After their return to Fort Hoima the annual expedition against Kabarega was organized. A body of troops set out from the fort to attack one of his principal chiefs, while Major Cunningham led a column from Uganda against him. There was severe fighting on the Somerset Nile, during which Capt. Dunning was killed and Major Cunningham severely wounded. Before the end of March they drove him across the Nile into the Bakedi country, but afterward he raised a fresh army, and in the summer the operations were renewed, with the result that his forces were again beaten, and he was expelled from Unyoro. Kabarega lived on friendly terms with the white administrators of the equatorial provinces, but has been at war with the British East Africa Company since Capt. Lugard ran the line of forts through his kingdom, cutting off a portion and setting over it another chief, and garrisoned the forts with rascally Soudanese soldiers, who raided and terrorized Kabarega's people. Although Uganda was stated officially to be the limit of British operations, the chain of forts was moved until it included a large part of Kabarega's former kingdom, and each year fresh expeditions have been sent out for the purpose of driving him out of his territory altogether. The half of Unyoro south of the line of forts has been handed over to chiefs who are friendly to the British, but is not a part of the protectorate. There are 23 English officials in Uganda, with a military force of

1,500 Soudanese, who have Martini-Henry rifles and a large supply of Maxim guns.

The Belgian forces occupied Lado by virtue of the agreement made with England in 1894, which in deference to the wishes of Germany and France was rescinded in regard respectively to the strip leased by the Congo State to Great Britain for a telegraph and the lease of the Balr-el-Gazel region to the Congo State. The Congo State was allowed to retain only the tract extending along the Nile, and for 200 miles westward from the northeastern corner of the Albert Nyanza, beyond Lado. The Congo State sent 1,000 regular soldiers with Krupp cannon and machine guns to occupy the leased territory, and massed on the nearest part of the Congo 1,500 more regulars and a large auxiliary reserve in order to be able to cope with any force that the Khalifa in Omdurman could send against them.

**Zanzibar.**—The area of the islands of Zanzibar and Pemba and the smaller islands constituting the dominions of the Sultan of Zanzibar after he had been deprived by England and Germany of his possessions on the mainland is about 700 square miles, and the population 200,000, of whom 100,000 live in the town of Zanzibar. Except 10,000 Arabs (the ruling race), 7,000 East Indians, 50 English, 50 Germans, and a few Americans, Greeks, Armenians, Frenchmen, Italians, and Roumanians, the people are negroes, the mass of them Sunnite Mohammedans, with some heathen and some Christians—converts of the Roman Catholic, Church of England, Wesleyan, and independent missions. The Sultan or Seyyid, Hamed bin Thwain bin Said, has no power over the civil administration since the establishment of a British protectorate. On the death of the former Sultan he was forcibly installed in opposition to the choice of the Arabs, and received a civil-list pension in lieu of all other revenues. Gen. Mathews is President of the Government, under the supervision of A. H. Hardinge, the British agent and consul-general, who is also Imperial Commissioner for British East Africa. Gen. Hatch has organized a military and police force of 1,000 men.

The Sultan receives 100,000 rupees a year out of the revenue, and the remainder is applied to administrative and police purposes and to the maintenance of the harbor and public works. The receipt were estimated for 1893 at 1,068,630 rupees, of which 525,000 rupees were taxes on cloves, 217,700 rupees import duties on arms, powder, petroleum, etc., 82,000 rupees the interest on the indemnity paid by Germany, 170,000 rupees rent from the British East Africa Company, and 73,930 rupees other revenues. The total expenditure was estimated at 961,503 rupees.

For 1893 the imports were valued at £1,146,759, of which £228,016 came from the German coast, £185,483 from Arabia, £52,250 from British East Africa, £93,793 from Great Britain, and £587,217 from other countries. The value of the exports was £1,002,035. The following were the principal articles: Cloves, £138,597; ivory, £110,611; copra, £85,696; caoutchouc, £26,321; gum, £17,084; chilies, £8,365. During 1893 the number of merchant vessels that visited the port was 129, of which 45, of 58,483

tons, were British; 37, of 59,525 tons, were German; and 27, of 45,480 tons, were French.

The principal market for slaves is the Zanzibar islands, where the work on the clove plantations and all other work is done by slaves. The British representatives in Zanzibar brought pressure upon the Sultan and forced him to enter into various engagements for the suppression of the slave traffic, but during five years of British administration no new steps have been taken to check the importation of slaves into the islands, a large proportion of which come from the British protectorates on the mainland. British naval vessels continue to patrol the neighboring seas at a cost of £100,000 a year in search of slave dhows, but many escape the vigilance of the fleet, and the Arab masters who purchase the slaves in Pemba or Zanzibar are protected in their possession. Hence a demand has arisen for the removal of the scandal by the abolition of slavery in British protectorates. The average life of the slaves on the plantations is said to be only ten years, and for every one that is brought to market ten are killed in the slave raids or perish from the hardships of the journey. The Government established a vice-consulate on the island of Pemba and called for reports from the officials in Zanzibar as to the best method of abolishing slavery. The number of slaves on the islands had increased threefold in ten years, the greater number being raided in the British protectorate in the lake district and sold to British subjects in Zanzibar. The British Government itself employs the labor of slaves to coal the cruisers employed in the suppression of the slave trade, and draws the revenue from which its officials are paid from the slave labor on the clove plantations, and on the mainland great numbers of slaves are hired to keep up communications with Uganda and to perform the transport service on every expedition. The caravan porters are hired in Zanzibar at prices that are about equal to their market value. One third, and sometimes as many as two thirds of those who go up the country, die by the way. The annual importation of slaves into Zanzibar and Pemba is estimated at 6,000. The consul general at Zanzibar estimated that the immediate abolition of slavery in the islands would entail a loss of £35,000 a year in the revenue, while the sum of £200,000 would be required to compensate owners.

**German East Africa.**—The area of German East Africa is estimated at 363,000 square miles, and the population at 2,900,000 souls. The number of Europeans in 1894 was 750. The German East African Company, since the rebellion of the coast Arabs in 1889, when most of the stations established in the interior were ruined, has confined itself to commercial operations, leaving government and defense to the Imperial Government, which is represented by a Governor, Col. Baron von Schele. The military force on July 1, 1894, consisted of 163 European and 9 colored officers, 94 under officers, 1,743 regular troops, with 52 pieces of artillery, and 216 irregulars, besides 319 native police. The Government has granted subsidies for railroads and steamers. The budget for 1895 makes the revenue 5,520,000 marks, of which 1,750,000 marks come from customs, 400,000 marks from

the local administration, and 3,370,000 marks are contributed from the German treasury.

The value of the imports in 1893 was 7,714,822 marks; exports, 5,580,740 marks. The exportable products are cocoanuts, copra, sesame, corn, caoutchouc, and ivory. A railroad is being built from Tanga into the interior, on which trains were running as far as Pongwe in the beginning of 1895. The estimated cost of the line to the Victoria Nyanza and Lake Tanganyika is 30,000,000 marks, to be raised by land grants and an imperial guarantee of 3 per cent. interest secured on the customs receipts of East Africa.

**Nyassaland.**—On the Shire river and at the south end of Lake Nyassa are missionary stations and posts of the African Lakes Company. On the strength of their occupation of this district the English Government compelled Portugal to renounce her claims to the region now known as British Central Africa, embracing 500,000 square miles, with a population of 3,000,000 souls. The European population was about 300. The whole region was proclaimed a British protectorate on May 14, 1891, and the Barotse country and other districts were handed over to the British South Africa Company, with the exception of Nyassaland, where an administration was organized, the cost of which is shared by the Imperial Government and the British South Africa Company. The company contributed £27,000 in 1893. The town of Blantyre has a population of 6,000 natives and 100 Europeans. The Imperial Commissioner and consul general is H. H. Johnston. One quarter of the ivory product is exported from this district. Other articles exported by way of the Zambezi are India rubber, oil seeds, rhinoceros horns, hippopotamus teeth, and rice. Some of the Arab chiefs and traders are recognized by the British Government, which wages incessant war against the rest. The country has been depopulated in many places by slave raids. The armed force consists of 200 Sikhs from the Indian army and some hundreds of native police. In February, 1895, the Yao chief Kawinga, the most powerful slave-raiding chief remaining, attacked a friendly chief named Malemya and a small British garrison that guarded his town. The Yaos captured some of Manyema's people and burned their villages, but failed in an attack upon the British fort. The acting commissioner, Alfred Sharpe, set out from Zomba with 410 men to attack the hostile chief in his stronghold on a mountain plateau. They captured the place, burned the town and surrounding villages, and carried off large quantities of ivory, cattle, and copper vessels. The Yaos, who dwell in Portuguese East Africa, in the hills between Lake Nyassa and the Indian Ocean, have always been the principal purveyors of the slave trade. The British settlements on the lake were threatened later by the chief Zarifa, against whom Capt. Manning moved with a large force. Major Forbes arrived at Zomba in June to arrange about introducing the administration of the British South Africa Company in the territories north of the Zambezi and extending the transcontinental telegraph line to Lake Tanganyika.

**Portuguese East Africa.**—The Portuguese possessions, which once extended across the continent to the colony of Angola, were restricted



by the Anglo-Portuguese agreement of June, 1891, to the coast region and the banks of the Zambezi as far as Zumbo. This territory, having an area of 261,700 square miles and a population estimated at 1,500,000, was organized in 1891 into the state of East Africa, divided into the two provinces of Mozambique and Lourenço Marques, divided by the Zambezi river. The revenue was estimated for 1895 at 1,335,880 milreis, and expenditure at 1,555,138 milreis. The imports in 1893 were valued at 2,381,930 milreis, and the exports at 1,114,920 milreis. The principal exports are peanuts, oil seeds, caoutchouc, ivory, and sugar. The Delagoa Bay Railroad is 57 miles long. There are 230 miles of telegraph.

The Yaos, whose country was devastated by locusts in 1894 and 1895, carried out several slave raids upon the Nyassas, or Maganjas, living on the shore of Lake Nyassa, and attacked the Portuguese fort and Roman Catholic mission at Mlanje.

**ECUADOR**, a republic in South America. The members of the Senate are elected, 2 from each of the 16 provinces, for four years, one half retiring every two years. The Deputies are elected for two years by all adult male citizens who are Catholics and are able to read and write. There are 33 Deputies, the legal ratio of representation being 1 to 30,000 inhabitants. The President is elected by the direct vote of the nation for four years, as is the Vice-President, but in a different year. Dr. Luis Cordero was elected President on June 30, 1892. In the Council of State in the beginning of 1895, the ministers were: Interior and Foreign Affairs, P. J. Lizaraburu; Justice and Education, R. Espinosa; War and Marine, Gen. J. M. Sarasti; Public Works, F. A. Marin; Attorney-General, D. J. B. Enriquez.

**Area and Population.**—The area of Ecuador is estimated at 119,000 square miles, including the Galapagos Islands, but excluding territories conceded to Peru by treaty of May 2, 1890, which the Ecuadorian Congress in 1894 rejected. The civil population is computed to be 1,271,861, of whom about 100,000 are of pure, and 300,000 of mixed European descent. Including savage Indians, there are over 1,400,000 inhabitants. Quito, the capital, has a population of 80,000, and Guayaquil, the chief port, 51,000.

**Finances.**—The revenue for 1893 was 4,325,701 sucres, or silver dollars, of which 3,030,334 sucres were derived from import duties, 131,242 from the land tax, 337,348 from the tax on cacao, 176,679 from that on rum, 20,880 from that on tobacco, 248,923 from monopolies of salt and gunpowder, 193,765 from stamps, 114,696 from excise, 17,811 from state property, 20,287 from registration, and 33,736 from other sources. The expenditures were 4,433,450 sucres, of which 18,436 sucres were for the Central Government, 50,371 for provincial administration, 135,998 for financial administration, 538,932 for the public debt, 66,487 for the salt monopoly, 127,818 for pensions, 207,656 for posts and telegraphs, 112,537 for justice, 20,241 for prisons, 395,512 for public works, 547,056 for education, 241,295 for worship and charity, 42,825 for foreign affairs, 976,923 for the army and navy, 289,057 for police, 83,574 for the collection of customs, and 578,732 for various purposes.

The foreign debt consists of obligations of the original republic of Colombia, dissolved in 1830, of which Ecuador agreed in 1854 to pay her share, which was fixed at £1,824,000 sterling. In 1867 payment of interest ceased. An arrangement was made with the British holders of the bonds in 1892, whereby the capital, including accrued interest, was scaled down to £750,000, on which the Ecuadorian Government agreed to pay  $4\frac{1}{2}$  per cent. interest, and  $\frac{1}{2}$  of 1 per cent. sinking fund for five years, at the end of which the sinking fund should be increased to 1 per cent., and the interest to  $4\frac{3}{4}$  per cent. for the next five years, and 5 per cent. thereafter. A surtax of 10 per cent. on imports was imposed for the purpose of carrying out this agreement, but after three coupons had been paid the Congress in 1894 suspended payment again, the assigned duties being found insufficient, and while continuing to collect these and reserving them for the debt, the Government began to treat anew with the creditors. There is an internal debt of about 5,000,000 sucres.

**The Army and Navy.**—The strength of the standing army is fixed by law. There are 221 officers and 3,120 men, including 114 marines on board a cruiser, a gunboat, and an armed transport, mounting 9 guns. Including the National Guard, which is organized in 88 battalions of infantry, 11 regiments of cavalry, and 3 battalions of artillery, the effective force is 95,329 men of all ranks.

**Commerce and Production.**—The chief product is cacao, coffee, sugar, and rice coming next. Gold is mined extensively, and silver, copper, lead, iron, coal, and petroleum are found. The forest products are also important. The principal imports are cotton and other textiles and iron goods. The total value of the imports in 1893 was 10,052,163 sucres. The value of the exports amounted to 14,052,514 sucres. The principal ones were: Cacao, 7,784,000 sucres; coffee, 978,000 sucres; vegetable ivory, 637,000 sucres; India rubber, 235,000 sucres; straw hats, 160,000 sucres; hides, 125,000 sucres.

The commercial intercourse with leading countries is shown in the following table for 1893 giving the values of the imports and exports:

COUNTRIES.	Imports.	Exports.
France.....	\$2,082,812	\$5,602,625
Great Britain.....	3,053,604	1,706,382
Germany.....	1,687,869	2,513,897
United States.....	2,065,140	1,499,810
Spain.....	237,649	1,309,227
Peru.....	629,972	322,392
Chili.....	373,842	573,721
Colombia.....	29,012	123,594

**Navigation.**—The total number of vessels that called at the port of Guayaquil during 1893 was 1,707, of 267,552 tons, of which 1,521, of 23,720 tons, were Ecuadorian sailing craft. There were 167 steamers, of 232,767 tons, of which 81, of 100,483 tons, were British and the rest of other foreign nationalities. American-built and Ecuadorian steamboats navigate the numerous rivers.

**Communications.**—A company has built a railroad from Duran to Chimbo, a distance of 63 miles. Because it failed to extend it within the time set, the Government annulled the con-

cession and seized the road, and has since opened negotiations with a French syndicate that offered to continue the line to Riobamba. There are 1,242 miles of telegraph lines. The post office in 1893 forwarded 1,802,024 letters and 6,338,315 pieces of printed matter and packets in the external service, and in the internal service carried 3,024,034 letters, postal cards, circulars, etc.

**Revolution.**—When the Japanese Government wished to strengthen its navy by acquiring the fast and well-armed protected cruiser "Esmeralda" the Chilean authorities were willing to dispose of the vessel for a good price, but not directly to Japan while that country was at war with a friendly power. Secret arrangements were made therefore by which Ecuador acted or was made to appear as intermediary in the transaction, ostensibly buying the vessel and afterward selling to Japan. The people of Ecuador thought this shameful and suspected that officials had thus compromised the honor of the republic only to enrich themselves.

The "Esmeralda" was sold to Japan in November, 1894, for more than \$1,000,000. She sailed under the Ecuadorian flag to the Galapagos Islands. There her name was changed to the "Yalu," and she proceeded to Yokohama, where she arrived on Feb. 6, 1895. President Montt, of Chili, declared that he had sold the vessel to the Ecuadorian Government. President Cordero and his ministers denied that they had purchased a vessel from Chili.

The ministry ordered an investigation to appease popular indignation, and removed Gov. Caamaño, of Guayaquil, Consul-General Modesto Solórzano in New York, and the consul at Valparaíso. Gen. Aloy Alfaro, chief of the Radical party, issued in the beginning of April from his place of exile in Nicaragua a proclamation saying that the only way to set Ecuador right before other nations was to depose President Cordero and all who were responsible. The students and the citizens in Guayaquil and other towns issued protests against the Administration. The followers of Alfaro took up arms in the province of Carchi, and Gen. Sarasti went to suppress the rising. The revolt spread, and the rebels took possession of the town of Ibarra, on the Colombian borders, putting to flight the Government garrison. On April 24 President Cordero resigned, and Vicente Salazar, the Vice-President, took his place. The Cabinet was reorganized, Luis Salvador becoming Minister of the Interior, Dr. Nuñez Minister of Finance, and Robert Espinosa Minister of Justice, while Gen. Sarasti remained Minister of War.

Eloy Alfaro was the leader of the attempted revolutions of 1884 and 1885. The Government since then has been in the hands of Moderate Liberals or Independents, who have temporized with the Conservatives and failed to satisfy the demand of the Radicals that the Church shall be stripped of public powers and deprived of public revenues. Alfaro and his supporters were cruelly repressed after their former uprising, and the country finally settled down under a policy of compromise. Cordero was a member of the Clerical party who made a bargain, it was said, with a section of the Liberals in order to gain the presidency. The ideas of the Radicals

have of late gained greater currency. Since Cordero's irregular election they have watched for a favorable opportunity to grasp at the reins of power, and when the "Esmeralda" scandal arose to discredit the Administration they were already prepared for a revolutionary campaign.

The revolution soon became formidable. The Government vainly attempted to check it by suppressing the newspapers and banishing their editors. The rebels took the maritime town of Esmeralda, blowing up the barracks with dynamite. They had 1,000 men under arms in that city early in May, and the Government attempted to recapture it from the land and the sea without success. Gen. Bowen led another uprising in Babahoyo, which was captured after a stiff fight in which the Government lost 49 killed, 87 wounded, and 32 prisoners. Several regiments of Government troops went over to the insurgents. In Cañar women delivered political prisoners from jail. Col. Zenon Zebando and Col. Antonio García captured Portoviejo with its well-supplied arsenal. At Machala 2,000 stands of arms were captured. The gunboat "Sucre" was blown up and 14 men were killed. A plot to seize the gunboat "Cotopaxi" was frustrated. The United States steamer "Ranger" was sent to Esmeralda to watch over the property of Americans, who are largely interested in the silver mines of Ecuador. After the revolt of the province of Ora and the fall of Machala, Gen. Rejinaldo Flores, commanding the troops that were massed at Guayaquil to recapture Esmeralda and suppress the rebellion, resorted to measures so tyrannical and cruel—flogging political prisoners and putting the whole population at work upon the fortifications—that Gen. Sarasti wished to supersede him, and sent his son to take over the command, but Flores would not give it up. Minister of Finance Nuñez resigned. The severity and tyranny of Flores, the man who was responsible for the sacking of the *hacienda* of Julio Flores, an American, during the former revolution, alienated most of the friends of the Government except the Conservatives of the central provinces, who were determined to resist to the last a Radical régime. On May 25 Gen. Flores had difficulty in suppressing a mutiny in the garrison of Guayaquil. Of the officers who led it, many were shot and others thrown into prison. A few days later that city was in the hands of the revolutionists, and Gen. Flores was a fugitive. It was captured, after a siege of three days, on June 6, by the army of Gen. Bowen, which had not to fight hard, for police and soldiers within assisted the assailants. Only 40 persons were killed or wounded in the engagement. The revolution was victorious now in 11 of the provinces. Besides Esmeralda and Guayaquil, the rebels held also the ports of Bahía and Manta. The Government possessed still only the interior provinces of Pichincha, Cañar, Azuay, and Loja. An insurrection occurred in Quito, and was suppressed after desperate fighting in the streets. Gen. Eloy Alfaro was proclaimed Provisional President on June 6. The Government forces were collected at Quito for a last stand. The Government asked for military aid from Colombia, but against this



Gen. Sarasti, who was himself closely invested at Riobamba, made a protest.

Eloy Alfaro arrived at Guayaquil, and on June 19 organized a Cabinet composed as follows: Minister of the Interior and of Foreign Affairs, Luis Felipe Carbo; Minister of Agriculture and Public Works, Lizardo Garcia; Minister of War and Marine, Cornelio Vernaza. The Provisional President sent Dr. Rafael Politas and others as peace commissioners to Quito to try to arrange terms for the capitulation of the Government forces and the transfer of the political power and offices without further bloodshed. At the same time an army of 3,000 men was got ready to march upon the capital, while 4,000 were equipped as a reserve. Missionary priests and nuns, some of them Americans, in Calceta and other places complained of being maltreated and compelled to flee from the country by the revolutionists, who asserted that Bishop Schumaker, the head of the missionaries, raised a force of 400 men to oppose them. The Provisional Government banished many persons who were counted among its partisans, on the ground that they were engaged in a conspiracy to restore to power the former dictator José Ventemilla. The Government at Quito refused to treat with the representatives of Alfaro, who set out in the middle of July upon his march into the interior. Some of the soldiers and officers of Gen. Sarasti who prepared to oppose Alfaro's advance deserted and joined the rebels, who, when they reached Chimbo, received valuable recruits from among the Indians of the country. Gen. Vergaza, who conducted a second column by way of Babahoyo, encountered and defeated 600 of Gen. Sarasti's army at San Miguel de Chimbo. After Vergaza's force joined Gen. Alfaro's column of 1,500 men they advanced along the main road to Quito. Guaranda was occupied on Aug. 6 after a fight in which the Government lost 45 killed and 20 wounded. Gen. Sarasti concentrated his army, numbering over 1,000 men, at Riobamba, which place, strongly fortified and defended by artillery, the Alfaristas must take before they could continue their advance. Alfaro's army, re-enforced by several thousand Indian warriors, captured this position after a desperate battle in which over 600 are said to have fallen, on both sides. Sarasti's broken army retreated to Quito, leaving 100 prisoners, 8 field pieces, 2 Gatling guns, and 800 rifles in the enemy's hands. The prisoners of war, according to Gen. Alfaro's custom, were released.

Other revolutionary columns were mobilized until six of them were advancing from the coast and operating in the south. When Cuenca, capital of Azuay, was taken by the Alfaristas after a siege and a severe battle, the whole southern part of Ecuador was theirs. Gen. Salazar at Quito had great difficulty in maintaining his authority over the population of the capital. Many citizens, including some women, were thrown into jail. When Alfaro's column approached Salazar took refuge in the Peruvian legation, and his ministers hurriedly fled. Alban Mestanza assumed authority as civil and military chief pending the establishment of the new Government, the Government forces having evacuated the city after the officials retired. Alfaro's troops were

received with demonstrations of joy when they arrived on Aug. 27 and encamped before the gates of the capital. The chief of the revolution made his triumphal entry into Quito on Sept. 1.

Gen. Alfaro's success was not complete until he consolidated his power by establishing a working administration in the different provinces. In some places the adherents of the Clerical *régime* were still active and defiant, and when their opposition abated intriguing rivals sprang up among the supporters of the revolution. In Ibarra, whither the members of the late Government had fled, Gen. Rivadeneira made an attempt to organize a counter-revolution and impose his rule in the province of Imbabura. In Guayaquil a plot against Alfaro was hatched, for participation in which Gen. Bowen and Gen. Trivino were dismissed from the army. An attempt to assassinate the new President in his palace was frustrated on Sept. 28. Gen. Alfaro was formally inaugurated as Supreme Executive Chief of the republic on Oct. 28, and on Nov. 4 he announced his Cabinet appointments as follows: Minister of the Interior, José Luis Tamayo; Minister of Foreign Affairs, Ignacio Robles; Minister of Finance, Lizardo Garcia; Minister of War, Gen. Morales; Minister of Public Works, Davio Morla; Minister of Public Instruction, Victor Gorgotena.

**EGYPT**, a principality in northern Africa, tributary to Turkey. The Government is an absolute monarchy of the Mohammedan type, but the throne is hereditary and passes by right of primogeniture. The reigning sovereign, called the Khedive, is Abbas Hilmi, born July 14, 1874, who came to the throne on the death of his father, Mehemet Tewfik, Jan. 7, 1892. On Feb. 19, 1895, he married Ikbal Hanem, a slave girl, who bore him a daughter. Since the intervention of Great Britain for the suppression of the military revolt of 1892 the country has been occupied by a British army, and since January, 1893, the Khedive appoints an English financial adviser, who has a seat in the Council of Ministers and power to veto any financial measure. At the beginning of the English control an organic decree was promulgated, May 1, 1883, establishing two popular elective bodies to take the place of the defunct Chamber of Notables. Of these the Legislative Council, composed in almost equal parts of nominees of the Government, mostly Cairo officials, and members elected in the provinces by popular suffrage, usually large landowners, examines all general laws, though the Government is not obliged to act upon its recommendations. The Legislative Assembly, which meets biennially, has the right to veto any new direct personal or land tax.

The Cabinet of the Khedive in the beginning of 1895 consisted of the following ministers: President of the Council and Minister of the Interior, Nubar Pasha; Minister of Finance, Mazlum Pasha; Minister of Public Works and Minister of Education, Fakhry Pasha; Minister of Justice, Ibrahim Fuad Pasha; Minister of War and Marine, Mustapha Fehmi Pasha; Minister of Foreign Affairs, Boutros Ghali. The English financial adviser to the Khedive and diplomatic agent is Lord Cromer.

**Area and Population.**—The area of Egypt within the present limits is about 385,000 square

miles, of which nearly all except 12,976 miles forming the valley and delta of the Nile is arid and is populated by nomads. The population in 1882 was 6,817,265, of whom 6,480,600 were sedentary Egyptians, 245,779 were nomads, and 90,886 were foreigners. The total population was divided as to sex into 3,401,498 males and 3,415,767 females. The population of Cairo, the capital, was 368,108; of Alexandria, the chief port, 208,755.

**Finances.**—The budget for 1895 makes the total revenue £ E. 10,260,000 (1 Egyptian lira or pound = \$4.99), of which £ E. 4,870,000 are derived from the land tax, date tax, etc., £ E. 1,700,000 from railroads, £ E. 1,650,000 from customs and tobacco duties, £ E. 380,000 from judicial fees, etc., £ E. 200,000 from *octrois*, £ E. 170,000 from salt and natron, £ E. 130,000 from port dues of Alexandria, £ E. 130,000 from urban taxes, £ E. 103,000 from lighthouse dues, £ E. 100,000 from the post office, £ E. 98,000 from fisheries, £ E. 94,000 from postal boats, £ E. 90,000 from payments for exemption from military service, £ E. 86,000 from rents of Government property, £ E. 78,000 from navigation dues, £ E. 55,000 from the pension fund, £ E. 42,000 from telegraphs, and £ E. 284,000 from other sources.

The expenditures are estimated in the budget at £ E. 9,600,000, of which £ E. 3,770,837 are for the public debt, £ E. 831,465 for railroads, £ E. 775,659 for public works, £ E. 750,843 for police, prisons, and the army of occupation, £ E. 665,041 for the Turkish tribute, £ E. 430,000 for pensions, £ E. 380,162 for justice, £ E. 320,619 for administration of the provinces, £ E. 250,000 for suppression of the *corvée*, £ E. 149,222 for administration of the customs, £ E. 119,792 for the administration of Suakin, £ E. 119,715 for financial administration, £ E. 111,707 for the interior, £ E. 105,000 for public instruction, £ E. 100,000 for the civil list of the Khedive, £ E. 97,927 for the civil lists of the khedivial family, £ E. 95,743 for the post office, £ E. 84,657 for postal boats, £ E. 55,934 for the private Cabinet of the Khedive, £ E. 46,278 for salt and natron, £ E. 40,200 for telegraphs, £ E. 40,000 for the sanitation of Cairo, £ E. 33,327 for collection of *octrois*, £ E. 26,850 for lighthouses, £ E. 23,930 for the Council of Ministers and foreign affairs, £ E. 23,000 for the port of Alexandria, and £ E. 152,092 for other expenses.

The public debt on Jan. 1, 1895, amounted to £104,406,890 sterling, of which £55,974,820, constituting the unified debt, bears interest at 4 per cent., £29,393,580 of privileged debt pays 3½ per cent., the guaranteed loan of £8,766,200 pays 3 per cent., £6,814,720 outstanding of the Daira Sanieh loan pays 4 per cent., and the converted Domains loan, amounting to £3,457,570, bears interest at 4½ per cent. The debt charges for 1895 were £2,239,463 for the unified debt, £1,029,000 for the privileged debt, £315,000 for the guaranteed loan, £272,590 for the Daira Sanieh loan, £146,950 for the Domains loan, £34,871 for the Daira Khassa, the annual payment to the loan commissioners, and the Moukabalah annuity of £153,846, which runs till 1930. The Domains and Daira estates yielded a surplus in 1894 of £ E. 720,265, which was turned over to the Caisse de la Dette and its reserve fund and to the special reserve fund of the Government.

These funds amounted in the beginning of 1893 to £ E. 3,554,424.

**Military Forces.**—The new Egyptian army, organized after the disbandment of the old force by Sir Evelyn Wood, an English general who received the Egyptian title of sirdar, has a total strength of 13,000 men, commanded by about 60 British officers. The present sirdar is Brig.-Gen. Horatio Herbert Kitchener. Every Egyptian, excepting ecclesiastics, professors, and students, is liable to serve in the army, but may purchase exemption by paying £ E. 20.

The police force numbers about 130 officers, 240 employees, and 5,000 men.

British troops have occupied Egypt since 1882. In 1894 the army of occupation, commanded by Maj.-Gen. Forestier Walker, consisted of 4,057 infantry, 519 cavalry, 166 field artillery, 155 garrison artillery, 108 engineers, 66 train, and 205 staff officers and administrative troops; total, 5,276 of all ranks.

**Commerce and Production.**—Of the total area of Upper and Lower Egypt, about 8,000,000 feddans (1 feddan = 1.038 acre), 5,022,000 feddans were under cultivation in 1891, and of this area 1,108,000 feddans produced double crops—cereals in the spring and cotton, sugar, or rice in the autumn. The area under cotton in 1892 was 864,000 feddans, yielding 4,987,500 kantars, or 493,907,000 pounds. The area under wheat in 1891 was 1,215,841 feddans; under corn and durrah, 1,530,983; under beans, 643,751; under clover, 820,263; under barley, 460,330; under rice, 167,164; under sugar cane, 64,539. Other crops are lentils, fenugreek, potatoes, onions, chick-peas, melons, peas, castor beans, indigo, flax, henna, and sesame.

The total value of the imports of merchandise in 1893 was £ E. 8,718,735, and of the exports £ E. 12,789,687. The imports of precious metals were £ E. 2,946,674, and the exports £ E. 3,517,152. The commercial intercourse with foreign countries in 1893 is shown in the following table:

COUNTRIES.	Imports.	Exports.
Great Britain.....	£ E. 2,683,121	£ E. 7,242,455
Turkey.....	1,510,161	425,530
Russia.....	387,088	1,786,602
France.....	896,560	876,504
Austria-Hungary.....	720,361	467,093
Italy.....	331,176	584,289
Germany.....	118,244	399,791
British colonies in the East...	597,071	52,693
Belgium.....	230,480	85,064
America.....	37,598	247,034
Spain.....	.....	288,805
British Mediterranean colonies	119,222	18,236
China and the far East.....	84,797	1,201
Greece.....	49,971	10,370
French Mediterranean colonies	33,506	24,560
Morocco.....	37,883	1,219
Red Sea ports.....	4,576	26,308
Persia.....	29,862	.....
Other countries.....	805,580	26,292
Total.....	£ E. 8,294,558	£ E. 12,789,687

The values of the principal exports were: Cotton, £ E. 8,525,974; cotton seed, £ E. 1,840,357; sugar, £ E. 760,793; beans, £ E. 687,958; onions, £ E. 146,068; rice, £ E. 124,525; skins, £ E. 93,743; wheat, £ E. 83,952; wool, £ E. 40,150; lentils, £ E. 23,726. The chief imports were: Cotton goods, £ E. 1,320,838; silk, wool-



en, linen, and other textile goods, £ E. 1,150,125; timber, £ E. 439,482; tobacco, £ E. 424,177; coal, £ E. 404,847; apparel and hosiery, £ E. 356,903; iron and steel goods, £ E. 342,907; wheat and flour, £ E. 337,815; wine, beer, and spirits, £ E. 309,697; coffee, £ E. 293,418; petroleum and oils, £ E. 264,364; fruits, fresh and preserved, £ E. 242,010; animals, £ E. 187,696; machinery, £ E. 152,065; rice, £ E. 124,525.

**Navigation.**—The number of vessels entered at the port of Alexandria during 1893 was 2,271, of 2,033,060 tons; cleared, 2,233, of 2,025,433 tons. Of the vessels entered, 596, of 864,288 tons, were British; 122, of 273,831 tons, French; 934, of 240,878 tons, Turkish; 132, of 200,533 tons, Italian; 141, of 194,398 tons, Austrian; 78, of 138,348 tons, Russian; 39, of 45,507 tons, Norwegian and Swedish; 26, of 36,749 tons, German; 157, of 25,869 tons, Greek; and 46, of 12,659 tons, of other nationalities. The arrivals declared at Damietta and Rosetta and at Port Said and Suez were 6,988, of 7,922,652 tons, and the clearances were 7,053 in number; tonnage, 7,919,634.

**Communications.**—The railroads in 1894 had a total length of 1,255 miles. During 1893 there were 9,301,081 passengers transported, and 2,113,002 metric tons of freight; the receipts were £ E. 1,660,000 and expenses £ E. 717,880. The railroad through the Nile valley, which has its present terminus at Keneh, is being continued to Assouan, and will be completed in 1897, the entire distance from Alexandria to the First Cataract being over 700 miles. The length of the Government telegraphs in the beginning of 1893 was 1,922 miles, with 6,763 miles of wire. The number of internal messages in 1892 was 1,722,000.

The post office in 1893 carried 9,570,000 internal and 3,950,600 international letters and postal cards, and 3,580,000 newspapers, etc., in the internal and 2,169,400 in the international service.

**Suez Canal.**—The number of vessels that passed through the canal in 1893 was 3,341, of 10,753,798 tons, paying in tolls £2,826,694 sterling. The number of passengers was 180,432. Of the vessels, 2,405, of 7,977,728 gross tons, were British; 272, of 798,929 tons, German; 190, of 702,634 tons, French; 178, of 443,147 tons, Dutch; 71, of 251,468 tons, Austrian; 67, of 183,492 tons, Italian; 50, of 119,616 tons, Norwegian; 29, of 100,706 tons, Spanish; 24, of 82,767 tons, Russian; 34, of 55,407 tons, Turkish; 10, of 17,398 tons, Portuguese; 5, of 7,466 tons, Egyptian; 3, of 6,526 tons, American; 1, of 2,847 tons, Japanese; 1, of 2,546 tons, Belgian. The net profits for 1893 were 40,615,536 francs. The share and loan capital on Jan. 1, 1894, amounted to 452,147,402 francs, not including the 100,000 founders' shares, which receive 10 per cent. of the surplus profits over and above 5 per cent. interest on the shares, and in 1892 did receive 4,061,553 francs.

In 1894 the gross receipts amounted to 76,951,000 francs and the net profits to 41,121,000 francs. During the year 3,352 ships passed through the canal, having an aggregate burden of 8,039,175 tons. The number of passengers was 166,003. There were 45 passages made by 11 ships carrying petroleum in bulk. The aver-

age time of transit was nineteen hours, fifty-five minutes, against twenty hours, forty-five minutes in 1893.

**Political Affairs.**—After securing in the Nubar ministry a subservient instrument for all his designs, Lord Cromer made no pretense of considering the Khedive's wishes or susceptibilities or of conciliating native opinion. The failure of most of the British experiments in reforming the administration had produced such a settled antipathy to the English that they no longer strove to reconcile the people to their rule. J. F. Gorst, on being appointed adviser to the Ministry of the Interior, immediately prepared a project for the regulation of local government that deprived the village sheiks of real authority and transformed the omdehs into agents of the English policy. The Legislative Council adjourned so as to avoid discussing this unpopular measure.

Manifestations of popular discontent were not unwelcome to the British guardians, because such exhibitions of hostile feeling made it appear necessary for the army of occupation to remain and impossible for Egypt to govern itself without danger to the rights and property of Europeans. The attitude of the common people toward the British became dangerously aggressive and defiant early in 1895. A mob in Alexandria assaulted some marines of the war ship "Scout" on Feb. 8. For this 7 natives were sentenced to the extreme punishment allowed by the law. Sir John Scott, the judicial adviser of the Government, immediately drew up a new law making the penalty more severe for attacks by bands upon Europeans. Another decree created a new tribunal with power to deal summarily with native offenses against English officers, soldiers, or sailors. This court is armed with powers of life and death and is independent of all restrictions of the code. It will pronounce immediate judgment, from which there is no appeal, but will only meet upon the demand of the general commanding the British army of occupation. Since punishments have become frequent and been rendered more severe for exhibitions of the popular dislike for the British and condemnations more numerous for all manner of offenses, the natives often feel the substitution of imprisonment for the old practice of flogging to be a hardship, and even the British officials sometimes regretted having introduced this humanitarian reform. Some men who hooted at an English military funeral procession were sentenced to a year's imprisonment. Penalties of that kind not only add greatly to the cost of prison administration, but deprive families of the means of subsistence.

The Legislative Council, which had adjourned till April, was summoned peremptorily on Feb. 22 to act upon the project for the reorganization of the internal administration and Sir John Scott's measure for preventing mob attacks upon Europeans. Mr. Gorst's project was adopted with amendments securing greater independence of the village authorities from the provincial as well as from the central executive. The omdeh is the head man of the village and the sheiks are his deputies. Each sheik has authority over a part of the inhabitants in each village, they having the right to choose under

what sheik they wish to be. The sheik is responsible to the omdeh for the behavior of his followers, and the omdeh is responsible to the Government for all that happens in the village. Commissions were appointed under the new law to investigate the village officials throughout Egypt, remove incompetent and dishonest sheiks and omdehs, and reorganize the whole local administration. These commissions abolished 236 villages, and in 3,572 that were preserved they dismissed 714 omdehs and 1,947 sheiks and, besides replacing the latter, appointed 2,968 additional sheiks.

The English authorities gave offense to the Khedive and to the Egyptian public by refusing the last request of Ismail Pasha, the moribund ex-Khedive, that he might come home to Egypt to die.

M. Legrelle, the Procurator-General, was displaced in March after twelve years of service in consequence of irreconcilable differences with Sir John Scott, who desires to supplant the French code and rules of procedure and to restrict the functions of the *parquet* to those of a public prosecutor. A native lawyer was appointed to the office and more summary forms of procedure were introduced. Sir John Scott formulated new regulations making the *parquet* subject to the inspection of the committee of judicial surveillance, directing the *mudirs* to investigate crimes, depriving the *parquet* of the right to instruct the criminal tribunals and that of prosecuting officials without orders from the Ministry of Justice, and transferring to it all the functions previously discharged by the *juges d'instruction*.

Ismail Bey Sabry, vice-president of the native court of appeals, was appointed procurator-general, and another native jurist, Zewar Bey, was made advocate-general. The Legislative Council after closing its session was for the second time ordered to reassemble in order that a measure for the rapid disposal of criminal cases should be legalized. Other changes in the administration of the criminal laws were important. Not only were the courts placed under English inspection, but English inspectors under the new adviser to the Ministry of the Interior guided the police administration in all the provinces, the central police bureau in Cairo being abolished and the provincial police placed under the *mudirs*. A ticket-of-leave system, like that of England, has been adopted for Egyptian prisons. For juvenile offenders reformatories have been established. The natives complained that the sure and stable administration of justice under the mixed codes, based upon the laws and procedure accepted in France, Italy, Belgium, and other European states, was disorganized, first by the institution in 1891 of the judicial committee of control having power to censure and to procure the removal of judges of the native tribunals, and now still further by the enforced retirement of the procurator-general and by the suppression of all independence of the officials of the judicial order acting as investigators and prosecutors of crime and the transfer of their powers to the provincial prefects, leaving them merely the task of supporting as advocates the prosecutions which the administrative officials may arbitrarily ordain,

without having to observe any of the laws guaranteeing the liberty and honor of citizens. In a petition to the French Chamber a large number of Egyptians claimed the protection of the public law of Europe against the adjudication by the disorganized native tribunals of questions of real property and of offenses against police regulations, which under the judicial reform of 1875, guaranteed by treaty and binding till Feb., 1899, are subject to the jurisdiction of the mixed tribunals. Threatened with the interference of the administration with the course of justice in the native tribunals since prosecutions have been transferred from independent procurators into the hands of *mudirs* and subprefects, they preferred to have cases decided according to the fixed principles of the European civil law by the reform courts of mixed jurisdiction. An Egyptian committee was organized in France to agitate in favor of a common resolution of the great powers to guarantee the neutrality of Egypt and the entire Nile basin, and thus afford the British Government an honorable ground for the evacuation of Egypt, which was now admittedly of no strategic value to England. The Suez Canal, open in time of peace, but now at the mercy of any event in war, should be preserved as a highway of commerce by neutralization. The French merchants in Egypt petitioned the French Chamber to record a protest against the prohibition of all trade between Egypt and the Soudan that has been maintained since the British occupation, although the Soudanese try to get their produce into Egypt and the Egyptians to circumvent the embargo and renew the long interrupted commercial intercourse with the Soudan.

The English administrators have desired to apply the reserves accumulated in the treasury, amounting to £4,230,000, to administrative reforms, public works, and the relief of taxation, but this money belonged to the bondholders under an international engagement which the French Government refused to cancel. For the relief of agricultural distress caused by the sudden fall of 25 per cent. in the value of the cotton crop and the depression in the prices of sugar and cereals, the Government initiated a general reassessment of tax values in accordance with present rents in order to equalize the incidence of the land tax. The new classification makes the large proprietors pay more taxes and lightens the burden resting upon the small landowners. The aggregate revenue of £4,900,000 sterling from 5,436,000 acres of cultivated land was not to be increased nor the maximum rate of 32s. 5d. an acre to be exceeded. The collection of some of the taxes had been postponed on account of the low price of cotton. The Commission of the Public Debt was disposed at first to object to the guarantee of 3½ per cent. interest on £365,000 of bonds for the Kench-Assouan Railway; the bonds and the contract were then taken by the Berlin Handelsgesellschaft. The Council of Ministers decided to bring the *Wakfs* under the supervision of the Ministry of Finance by directing the accounts of these religious and charitable endowments to be audited by that department. The Legislative Council, objecting to such intervention in Mohammedan matters, proposed that the committee of *Wakfs* should



submit its accounts direct to the Khedive. Conscription for the army was extended to Cairo, Alexandria, and the other towns hitherto exempted by custom. This measure is expected to increase the receipts of the Ministry of War by a considerable sum that citizens of the municipalities will pay for exemption from military service. The price for exemption has been reduced to £ E. 20. This purchases exemption from the liability to serve, and must be paid before the drawing. Only 2 per cent. of the persons summoned have to join the colors, yet so intense is the aversion to military service that even the fellaheen who can pay the tax do so rather than run the chance of conscription.

The judicial adviser framed a new antislavery convention. Trial by court-martial is maintained at Suakin and in the frontier province. The buyer of slaves is made distinctly liable to punishment no less than the seller, and a new court is created for the purpose of trying cases in the districts not under martial law, consisting of 5 judges of the native court of appeal, of whom 2 shall be Europeans. The decisions of this court are final.

The recalcitrant attitude of the young Khedive and his patriotic friends toward the Anglo-Indian methods employed for the subjugation of Egypt by its present masters is reflected in recent transactions of the Legislative Council. This body made no attempt to exercise its limited authority so long as the Egyptian Government followed obediently the dictation of the English advisers. When Riaz Pasha at length rebelled the Council took courage, and by its strictures on the budget of 1894 Sir Elwin Palmer, the financial adviser, attempted to rebut the statement that the private indebtedness of the landowners had risen from £ E. 12,000,000 in 1881 to £ E. 20,000,000 in 1891 by a compilation of the mortgages recorded in the courts showing that their sum is only £ E. 7,333,300 and that the number of acres mortgaged is 395,600, not 1,300,000. When Ali Pasha Sherif, who was convicted of a violation of the antislavery law, resigned the presidency of the Legislative Council, Omer Pasha Loutfi was elected his successor. In the budget report for 1895 the Council called upon the Government to reduce the land tax by £1,000,000 and save the people of Egypt, who are being crushed under an ever-increasing load of indebtedness, from sinking into the state of mere hired laborers on the land which they own, but of which they are rapidly being dispossessed.

In a commercial convention with Greece, signed March 21, permission was given to import Greek tobacco, which hitherto has been prohibited, the capitulations being relaxed so that Egyptian officers can search Greek vessels and domiciles for smuggled goods.

**The Soudan.**—The Khalifa Abdullah, who succeeded the Mahdi Mohammed Achmet as ruler of the empire which the latter welded out of the Soudanese provinces of Egypt, preserves the strict Mohammedan character of the state, but no longer aims to carry out the religious mission of conquest, for he has great difficulty in retaining his authority over the tribes that he pretends to rule. The Khalifa, who was once lieutenant of the Mahdi, and commander of the Bag-

gara military force that established and maintained his empire, now represents the domination of that Arab tribe over the mixed negro and Arab races, who feel the rule of the Baggaras to be hard, but not so oppressive and rapacious as was that of the Egyptians. The country is less prosperous than it was under Egyptian rule, for the Khalifa has not known how to found a civil government that will be respected, and all outside commerce has been shut off, except the clandestine trade in slaves. The Soudanese dervishes formerly raided the region of the Welle and the country between the Nile and the Congo. The supply of slaves is now nearly stopped by the military operations of the Congo State, which, under an agreement with Great Britain, has extended its outposts to the Nile. The diminished power of the Khalifa might be overthrown, the slave trade in this region crushed out, and the Soudan again opened to commerce by sending a small European military force into the country. This has not been done, owing to political complications. Great Britain claims the whole Nile basin as its sphere of influence, irrespective of its engagements to withdraw from Egypt as soon as that country is able to govern itself, and has persistently refused to allow the Egyptian Government to attempt to reconquer the provinces which it evacuated at the dictation of the English. The French Government refuses to recognize the claims of Great Britain in the Nile basin, but these have been recognized by the German, Italian, and Congo governments. The French contend that all the countries that were formerly held by Egypt under the suzerainty of Turkey are still Egyptian in international law, and a part of the Turkish Empire. The British were alarmed in 1895 lest French expeditions from the Congo and the Niger should penetrate into the Bahr-el-Gazel province and occupy it as guardians of the rights of the Sultan. The recent activity of the French in the Ubangi country influenced the British Government to send expeditions to Lake Albert and the upper Nile, and to undertake the construction of the Uganda Railroad.

Nearly all the Europeans, former officials of the Egyptian Government and missionaries, who were held in captivity by the Khalifa, have escaped and returned to Europe. Father Bonomi got away in 1885; Father Ohrwalder, with 2 Italian nuns, in 1891; Father Rossignoli in November, 1894; and, finally, Slatin Bey, the last of Gen. Gordon's lieutenants, in February, 1895. The Europeans were latterly allowed to earn their living by working at whatever handicrafts they knew in Omdurman. Slatin Bey was at times kept in prison, loaded with chains; at other times was treated with distinction and called into counsel by the Khalifa. He made eight attempts to escape before his wardens finally relaxed their vigilance and suffered him to depart. When the Austrian officer left, the Khalifa had 12,000 fighting dervishes, under Osman Digma, encamped on the Atbara river, threatening the Italians at Kassala. His military power was still unbroken, the Baggaras, of whom he is one, remaining faithful, and his political and religious power at Omdurman and throughout the southern provinces was still great, but was waning.

**ELKS, BENEVOLENT AND PROTECTIVE ORDER OF**, a charitable and benevolent organization founded in New York city in 1868. The object of the order is to aid and protect its members and their families, and to promote friendship and social intercourse. In the beginning it was composed of a few gentlemen of the theatrical profession, drawn together for social intercourse. It has now developed into a powerful organization of 30,000 members, with lodges in more than 250 cities of the United States. While members of the theatrical profession are numerous and prominent in the order, yet its rolls contain the names of many in other professions and occupations. Only one lodge is permitted in any town or city. This is to prevent the rivalry, conflict, and jealousy that sometimes embarrass secret societies. The initiation fee varies from \$15 to \$100 in lodges in the various cities. The average dues are \$6 a year. The order is not beneficial, but it is claimed to expend more in unostentatious charity than any other in the world. The amount averages \$10 a week to those who are in distress, but the sum is usually limited by the needs of the sufferer. There are no ranks, titles, or emoluments in the order. All Elks have equal rights under their laws. To join the order of Elks, the applicant must be a man of good health, must be twenty-one years of age, must believe in a Supreme Being, must be a citizen of the United States, and must have some honorable occupation or visible means of support. Another body, which the Grand Lodge, at its session in Jamestown, N. Y., declared to be "unauthorized, illegal, and revolutionary," held its convention at Atlantic City in 1894; but the two wings of the order are now practically united.

**ENGINEERING. Ship Canals.**—On June 21 the Emperor of Germany, attended by an immense fleet of war ships representing all the maritime nations of the world, officially opened the North Sea and Baltic Ship Canal. Since first the nations of northern Europe began to build ships, study navigation, and realize the importance of short cuts by water from sea to sea the desirability of a canal across the base of the Danish peninsula has been obvious. A beginning was made in 1398, and a narrow canal was made, following natural watercourses and serving for the passage of small craft. This was in use until 1784, when the Eider Canal was opened from a point near the eastern end of the present canal to Rendsburg (22 miles), the remainder of the distance being by way of Eider river to the North Sea. This canal was used annually by about 4,000 vessels, but the 6 locks carried only 10 feet of water, so that vessels of any considerable size were still obliged to make the dangerous passage around Denmark. On the conclusion of the Schleswig-Holstein complication, in 1865, Bismarck, foreseeing the coming necessities of commerce and of war, secured a concession of land from the principality sufficient for the construction of such a canal as has now been completed. The attainment of German unity a few years later further emphasized the necessity of such a canal, and in 1887 Kaiser Wilhelm I officially began the work. The canal as completed is a little more than 61 miles long, and, for the easterly part of

its course, follows the line of the old Eider Canal, then bending southward till it enters the lower Elbe where there is a navigable depth of about 40 feet. Theoretically, the whole canal is at the Baltic-Sea level, which is practically unaffected by the tides; but the rise and fall of the North Sea at the mouth of the Elbe averages about 20 (?) feet, so that a system of tidal locks and gates has been established at Brunsbüttel, where the canal proper debouches into the river. At Holteneau, the Baltic terminus, storm gates only are required, which will be closed whenever necessary, because of violent gales from the east. This occurs, according to observations, on an average of twenty-five days in a year, but, even when it is necessary to keep the gates closed from hour to hour, they can be opened for intervals of a few minutes, sufficient to pass vessels into the canal. The tidal locks at Brunsbüttel, on the contrary, will be habitually kept closed, except during three hours of the ebb tide. These locks are constructed like ordinary canal locks, and vessels can be passed through them at any time, subject to the ordinary delays. A sheltered basin is formed by two moles extending into the river, between which vessels may await their turn for the locks; this basin is 328 feet wide by 1,312 feet long. Then come the parallel double locks, each 82 by 492 feet between sills and 30 feet deep. These will pass all save the very largest war ships at any stage of the tide, and of course ships of any size whatever can pass during the hours of slack water, when the gates are left open altogether. It is estimated that 4 steamers or 9 sailing vessels of ordinary dimensions can be locked through at once. Inside the locks is an inner harbor 656 by 1,640 feet for vessels bound westward that have come through the canal and await their turn to get to sea. The general width of the canal proper is 197 feet at the water surface and 72 feet at the bottom, with a depth of 29 feet 6 inches. Ordinarily, merchant vessels going in opposite directions can pass one another anywhere; but with an eye to future increase of tonnage and to existing men-of-war, there are at convenient points along the route 6 basins 328 feet wide.

The locks at Holteneau are similarly provided with outer and inner harbors or basins. Four railroad bridges cross the canal, two of which—at Brunthal and Levensau—are fixed bridges, and two at Rendsburg and Brunsbüttel are swinging draws. The fixed bridges are 137 feet above the water, so that by sending down their royal masts, the loftiest-sparred vessels can pass. The drawbridges are arranged in pairs, duplicated—that is, at some distance apart—so that if one of them is closed to railroad traffic by the passage of vessels the other one can, in most cases, be available. Provision is also made for foot and carriage traffic. The length of the swinging sections of these bridges is 328 feet longer, it is claimed, than any other similar structure in Europe. In this country, where such bridges have been longer in use, there are several of greater length. All the machinery of locks and bridges is operated by hydraulic power.

In the main, the line of the old Eider Canal has been followed for the easterly section, but



curves have been straightened and certain natural obstructions have been overcome that were too much for the resources of the earlier engineers. One interesting feature was the treatment of Flenhuder lake, an expanse of the river Elbe, which lay close to the line of the new canal, but at 23 feet higher level. The very considerable pressure of water at that height made it an unsafe neighbor. Accordingly, the lake was drained into the canal until the levels were identical. This exposed a large tract of lake bottom, and residents along the former shores of the lake protested against losing their water supply. Accordingly, a "ring canal" was built, retaining the border of the lake at its old level, while the main body of water was deflected into the ship canal, the current of the river serving to increase that of the canal so that the terminal locks at Brunsbüttel are kept reasonably clear of silt. The lake, too, is still deep enough to serve as a harbor.

Elsewhere extensive marshes of very difficult nature had to be overcome. Some of these consisted of semiliquid mud, perhaps with a light coating of turf on top; others were bogs, and still others quicksands. Altogether, a section of the canal several miles in extent had to be constructed practically upon an artificial foundation. The method pursued was to construct temporary crib work strong enough to bear moderate car loads of sand, and in this way parallel dikes of sand on each side of the axis of the canal were pushed out into the marshes until a sufficiently stable foundation was obtained between the dikes for masonry and concrete. In a distance of  $5\frac{1}{2}$  miles 64,000,000 cubic feet of sand were thus deposited, and the result seems to have been satisfactory. In round numbers, the total cost of the canal and its belongings was: Brunsbüttel locks, \$4,000,000; Holteneau locks, \$3,500,000; other construction, bridges, etc., \$31,500,000; total, \$39,000,000.

The interest of Germany in this great engineering enterprise is both commercial and military, though, in the larger sense, the military depends ultimately upon the commercial. It is estimated by Herr Augustus Sartori, President of the Kiel Chamber of Commerce, that the annual registration of vessels voyaging between the Baltic and the North Sea is about 18,500,000 tons, and he believes that 11,700,000 tons of this will pass through the canal rather than make the dangerous and intricate passage around the Danish peninsula. Elaborate tables have been made, showing the saving in time and distance between the various North Sea ports, but perhaps the most graphic way of setting forth the advantages is by considering the dimensions of Denmark. Given 61 miles, the length of the canal, and 600 miles of coast that must be circumnavigated in making the outside passage, we have the proportion: As 61 is to 600, so is the trip by canal to that by sea. But the

fourth term of the proposition is indefinitely increased by the unknown dangers of a North Sea voyage.



**The Sault Ste. Marie Canal.**—On June 12 this important Canadian work connecting Lake Superior and Lake Huron was opened for commerce. The completion of this work gives Canada unbroken navigation from the head of Lake Superior and from all its vast extent of northern coastline 2,384 miles to the Atlantic Ocean, a privilege that she has not enjoyed since the War of 1812. As soon as the northern wilderness began to be explored by Canadian adventurers it became evident that some means must be established of facilitating transportation between Lake Superior and the lower lake system. In 1798 a beginning was made, and a canal was finished ten years later across St. Mary's island, connecting the two lakes, and ample for all purposes of navigation at that early day. This was originally undertaken by one of the Northwestern fur companies, but the property was eventually transferred to the Hudson Bay Company. The canal was 300 feet long and 45 feet wide, and with a lock 38 feet long and 9 feet wide, which seems ridiculously small in comparison with the requirements for lake navigation at the present day. Early in the War of 1812 a company of 150 American volunteers, led by Major Holmes, crossed the strait and destroyed the canal so effectually that it never was rebuilt. The construction of a canal on the American side was begun shortly afterward, and pushed rapidly to completion. (For a history of this canal and its improvements, see "Annual Cyclopædia" for 1889, page 744.) As this was made available by international treaty for the uses of

commerce, no steps were immediately taken by the Canadian Government to provide a canal on its own territory. During the Riel rebellion of 1870 it became necessary to transport men and munitions of war to the head of Lake Superior. Sir Garnet Wolseley (now Lord Wolseley, commander in chief of the British army) sought permission to use the American canal, but this privilege was refused by the United States, in accordance with the laws of nations. The trouble was overcome by landing troops and supplies on the Canadian side of the strait, sending the empty boats round through the American canal, which was available by treaty, and re-loading on the Lake Superior side of the carry. This was the first incident that forced upon the Canadians the importance of a canal of their own. The second occurred in 1892, when the rates on American cargoes passing through the Welland Canal were raised. The Government of the United States immediately notified that of Canada that tolls on Canadian vessels passing through the Sault Ste. Marie canal would be forthwith raised in retaliation. Upon this the Canadians withdrew their excessive tolls, but the need of a canal was still evident, more perhaps from a military than from a commercial point of view, since only about  $3\frac{1}{2}$  per cent. of the total commerce passing the American canal is of Canadian ownership. The new Canadian Canal is 1,106 feet long in its masonry section, and 3,500 feet altogether, with a total length, including approaches dredged in the natural channel, of about 18,000 feet. The lock is 900 feet long and 60 feet wide, 22 feet below the lowest recorded stage of the water. There are 5 sets of lock gates. Two 45-inch turbines, of 150 horse power each, operate the generators for the electric plant. Water power is taken from Lake Superior and carried through a large pipe to the power house, where it divides, one branch going to each of the turbines. One turbine is capable of doing all the work, the other being kept for emergencies. The turbines can also be used to operate 2 centrifugal pumps to empty the lock chamber in case of need. This work can be effected at the rate of about 32,000 gallons a minute, emptying the chamber in six or seven hours. Two dynamos for electric lighting, and motors of 22 horse power for gates and valves, are provided for the ordinary working requirements of the locks. The work of construction was under the general supervision of Collingwood Schrieber, chief engineer of the Department of Railways and Canals. William Crawford was resident engineer. The gate machinery, with the exception of the electric plant, was designed by J. B. Spence. The total cost of the entire work was about \$4,000,000.

**Harlem Ship Canal.**—Considering the magnitude of the interests involved, it is singular that until the present year no ship channel has been made connecting the East river and the Hudson along the line of Spuyten Duyvel creek, which bounds Manhattan island on the north. This tidal stream was by nature only deep enough for the passage of small boats, and as it was very tortuous in the westerly part of its course, it was evident that costly engineering would be necessary to make it available for large craft. Congress ten years ago authorized

the construction of the canal, which was opened on June 17. The cost was to be \$2,700,000; it was to be 400 feet wide, with 16 feet of water at low tide and 21 feet at high tide. The appropriation has not been exhausted, but the work is not yet complete according to the original plans. The canal follows a curved course of about 1 mile from the Hudson to the Harlem, which is naturally navigable, or can easily be made so by dredging, to the East river proper. The principal engineering difficulty was Marble Hill at King's Bridge, where a straight cut 1,000 feet long was made to avoid the natural curves of the creek. The approaches to this rock cutting were through meadows on either side offering no special difficulties. As finished the canal has 15 feet depth at high water and 9 feet at low water, except in the Marble Hill cut, where the full depth is provided. The remainder of the line can be readily dredged to the required depth. One difficulty to be encountered in the use of this canal is the number of bridges that cross it, carrying the various railroads entering the city from the north and east. Some of these are high enough to admit the passage of vessels having masts or smokestacks of considerable height, and most of them permit the free passage of barges. The opening of the canal was the occasion of a celebration, more than 100 vessels taking part in the procession that passed through the new channel. United States war vessels were stationed in the Hudson and in the East river, off the outlets of the canal, and fired national salutes. On land a parade, military and civic, with strong detachments from the regular army and the National Guard, and many officials representing the nation and the State, lent interest to the event.

**Amphibious Navigation.**—Marine railroads on which large boats can be drawn from one water level to another are not uncommon, but the "Svanen" of Copenhagen is the pioneer of her class, capable of self-propulsion on land and sea. The inventor is a Swede, Lector C. J. Magrell, and the vessel was built in Sweden. She is 46 feet long, 9 feet 6 inches beam, with a maximum draught of 3 feet 6 inches. She is capable of carrying 70 passengers, and plies upon 2 lakes near Copenhagen, the Fure Sø and the Farun Sø. These lakes, which afford a favorite excursion, are separated by an isthmus about 1,100 feet wide. Across this a track has been laid with ordinary railroad iron, descending into the water at either side by an easy gradient of 1 in 50. Funnel-shaped approaches are provided similar to those in American ferry slips, but narrowing almost to the width of the boat over the submerged rails. The "Svanen's" machinery is a screw-propeller engine, the shaft of which is connected by beveled wheels with an axle running athwart ship near the bow and carrying 2 wheels protruding through the bottom of the boat and adjusted so as to take the track of the roadbed. These are more like rollers than wheels, being only about 18 inches in diameter, and not intended to attain or endure a high rate of speed. Another similar pair of wheels is provided near the stern, but these last are merely carriers, not being fitted with driving gear. The boat, on approaching the land, heads straight for the slip, guided by the piles that form the ap-



proach, until the forward wheels strike the rails and her momentum starts her up the incline. At this moment the engineer throws the terrestrial machinery into gear, and with scarcely a perceptible pause the boat begins to mount the gradient by wheel power. The screw continues to revolve in the air all the way across the isthmus, as the inventor did not deem it worth while to provide a disconnecting device. The land speed on the up grade is about 250 feet a minute, and the same speed is maintained on the down grade by applying brakes so that the limit of safety shall not be exceeded. On reaching the water on the other side, the boat launches herself gently, the screw catches the water, the land-propelling machinery is disconnected, and the aquatic voyage is resumed. The frame of the boat is unusually strong, to sustain the jarring unavoidable in transportation, but she has stood the test of her first season, carrying altogether 20,000 passengers.

**Bridges.**—While the construction of concrete bridges is by no means new, it has experienced a considerable revival within a short time. The careful and economical Germans apparently take the lead in this movement, having lately constructed 2 monolithic bridges over the upper Danube, near Reichenstein. The first of these has a single span of 164 feet, and a total width, including 2 foot walks and a carriage way, of about 26 feet. A few interesting features of the construction may be noted. False work was erected for the entire sweep of the arch, and on this the concrete blocks were placed and allowed to harden. Solid rock was available for one of the abutments; the other could only be carried down to a solid natural foundation by deep and somewhat difficult excavation through wet gravel. To overcome this, piles were driven at an inclination of 15 degrees toward the bridge center, the tops of the piles being at least 18 inches under low-water mark. Around and over the piles a cement concrete was spread and carefully tamped, and additional precautions were taken to distribute the strain equally upon the heads of the piles. The arch is very flat, the rise at center being one tenth of the span, and its thrust correspondingly heavy, but this artificial foundation stood so firmly after the false work was removed that the actual settlement was a trifle less than had been calculated. The thickness of the concrete arch at the center was 3.28 feet, and 3.61 feet at the spring of the arch. The spandrels, in order to save weight and material, were made hollow in 2 series of arched chambers, 36 inches wide, concrete walls 24 inches thick separating them, the sides of the spandrels being 40 inches thick, of concrete, with exterior facing of stone. German Portland cement was used, in the proportion of 1 part cement to  $7\frac{1}{2}$  of sand and broken limestone. The total cost of bridge and approaches was \$22,500, the pay for common labor being 65 cents a day. The cost per square yard of road and footway was \$30. The bridge was designed by Government-Director Leibbrand, of Stuttgart, and constructed by Technical-Councilors Enting and Braun. The other bridge referred to has 2 spans, of  $75\frac{1}{2}$  feet each, with a central pier 8 feet 2 inches thick. In this bridge, the construction of which does not differ materially

from the other, provision was made for expansion and contraction by introducing pads of rolled leather between open joints at the crown and spring of the arch.

A concrete-arch bridge of 60 feet span and 32 feet wide was shown at the Antwerp Exposition, in 1894, by the North Portland Cement Works Company. The arch was 1 foot  $7\frac{1}{2}$  inches thick at the crown, 6 feet 6.314 inches at the spring. The percentage of cement to sand and broken stone was very low—1 to 15 for the abutments and 1 to  $8\frac{1}{2}$  for the arch—but the structure was intended merely for exhibition.

**Strength of a Truss Bridge.**—The deliberate breaking down of a bridge in order to test its limits of endurance and observe the peculiarities of the final crash was probably never thought of until conditions suggested it in the case of a truss bridge over the Emme river, on the Jura-Simplon Railway, of Switzerland. The failure of a similar structure a few months before, and the increasing traffic of the railroad, led the management to determine upon replacing the bridge in question, and it was decided to see how much strain the old one would bear after more than twenty years of service. The trusses were to all appearance rather light in structure, 157 feet long and 19 feet high—1 foot less in height than were the trusses of the bridge that gave way—and therefore somewhat less able, probably, to endure a heavy strain. On April 9 the work of loading the bridge was begun, gravel and rails being piled upon one half of the roadway, from the middle of the span to one end of the bridge. The work continued until April 24, when the strain was reported at 7,800 pounds to the linear foot of half the bridge. Slight deflections now became apparent, but the loading was continued. At nine o'clock on the morning of April 25 the load had increased to 9,400 pounds to the linear foot, and, although small cracks, increasing in number, became visible at various points, it was not apparent to the expert who watched the progress of events where the break would finally occur. At forty minutes past nine the collapse came, so suddenly that nobody could note where the initial break occurred. By a most unfortunate oversight, no provision had been made for photographing the fall of the bridge, as might easily have been done; and the only satisfactory conclusion seems to be that the structure, in spite of its supposed untrustworthiness, held an ample margin for safety—nearly three times what is required by the bridge-building rules of some of the best railroads in this country. The usual test of such a structure is to send across it 2 or 3 heavy locomotives, and if it endures a strain of 3,000 pounds to the linear foot of roadway, its security is deemed well within the requirements of safety.

**The Jeddo Tunnel.**—In 1888 a system of coal mines near Hazleton, Pa., was flooded by the invasion of surface water, which entered so rapidly as to defy all efforts for its exclusion. The works were totally submerged and abandoned, but the topography of the neighboring country was such that it was possible to drive a tunnel from Butler valley, 5 miles distant beyond a mountain range, which should tap the flooded mines. Work began in 1891. Two

shafts were sunk in the intervening mountain ridge, and headings pushed both ways from each of them, as well as from the Butler valley end. The main tunnel is 7 by 9 feet, and progress was slow, owing to the hardness of the rock encountered and to a considerable local inflow of water, which had to be pumped out as the work went on. The connection between the tunnel and the flooded mine was made by drilling a smaller hole for 440 feet, through which, it was estimated, 500,000,000 gallons of imprisoned water would discharge in about two months, the estimated rate being 8,000 gallons a minute. Not a single life was lost during the progress of this necessarily hazardous work, and only 4 men were injured. The Ingersoll-Sargent rock drills were used, and forcite was employed for blasting, as this gives comparatively little smoke and is less violent.

**Improved Carriage-Roads.**—Few persons realize what enormous engineering interests are involved in the improvement of ordinary carriage roads. A report lately issued by the United States Bureau of Agriculture embodies information collected by the Department of Road Improvement. Returns were received from about 1,200 counties, showing that the average length of haul from the farm to market or railroad is 12 miles; the average weight of load for 2 horses, 2,002 pounds; average cost per ton per mile, 25 cents, or \$3 for the round trip. The total volume of farm products in the United States is estimated at 219,824,227 tons, and at this rate, the aggregate expenditure for road hauling amounts to \$659,472,681 per annum. If the average load could be doubled by improving the roadbed the cost of transportation would be halved. If 10 per cent. of this enormous sum—or, in round numbers, \$50,000,000—could be devoted annually to the improvement of roads few would be disposed to question the wisdom of the expenditure. The cost of transportation determines the producer's profit, and the prices of farm produce, on which more than on anything else the general prosperity of the country rests, is fixed at the commercial centers. The great problem, then, is to bring down the cost of transportation. While freight by rail costs from 4 mills to 1 cent a ton for each mile, that by ordinary country roads costs often fifty times as much; therefore, inferior roadways make an enormous and generally unsuspected drain upon the resources of the nation. The same power that hauls 1 ton on an ordinary country road can haul 4 or 5 tons on hard roads, such as are being constructed in many States. The introduction of bicycles has been a powerful incentive for the improvement of roads. Manufacturers of these vehicles for sound business reasons advocated roadways favorable for the use of wheels, and the users of the wheels themselves naturally advocated anything that would render their favorite recreation more enjoyable. As they are for the most part young men active in public affairs, their influence soon made itself felt in voting appropriations for roads in town meetings and elsewhere; and now that wheeling has grown to be vastly more than a mere recreation its influence will be correspondingly increased in this most important department of engineering.

**High Buildings.**—Modern construction of very lofty buildings necessitates extreme care in the preparation of foundations, and where it is necessary to excavate to a great depth in order to reach bed rock or so-called "hardpan" the question of expense becomes very serious. A new system of construction has been introduced recently in New York by the Hydraulic Construction Company, with the approval of such engineers as H. W. Brinckerhoff, G. W. McNulty, and John Bogart, all members of the Society of Civil Engineers. It consists of an adaptation on a large scale of the well-known device of sinking piles or hollow iron columns by hydraulic action. In the case of foundations, large iron cylinders, or caissons, 8 or 10 feet in diameter, are made of boiler iron or some similar material. They are in sections of a length to be conveniently handled and transported on trucks. A shallow excavation is made in the surface earth where the foundation is to be laid, and the cylinder is stood on end at the place where wanted. A set of water pipes passes down within the caisson and connects with a perforated foot that extends around the entire lower edge. Through these pipes and out at the perforations water is forced at a pressure sufficient to wash away the earth under the edge of the caisson, which is ordinarily loaded on top with pig iron or kentledge resting on timbers, and, if necessary, an additional weight is provided at the sides. As the top of each section reaches the level of the earth the current is checked until the weight can be removed and another section bolted on. Then the weights are readjusted, the current is turned on again, and the caisson eats its way downward. The only delay in sinking these caissons to almost any desired depth arises from the necessity of providing against a dangerous pressure from without. So long as the caisson is filled with water or with earth pressures are equalized, but when these are removed there is danger of collapse. To obviate this, timber frames are inserted when the material is removed from within. These are placed crosswise and tightened by means of wedges, an open space being left in the center of the caisson between the timbers, so that soil can be hoisted up by means of a small derrick. Some care is requisite in managing the valves that control the flow of water through different sections of the cutting edge, in order to maintain the caisson in a vertical position. In one instance a careless foreman permitted the caisson to sway about 16 inches out of plumb by the time it reached the rock. It was, however, successfully straightened, in about ten hours' work, by the help of two jacks and the use of water jets discharged through those sections of the cutting edge opposite the jacks. When the caisson is finally settled to its position on the rock, the contents are removed and measures are taken to make the lower edge fit the inequalities of the rock. Cement is poured in at the bottom, and sometimes on the outside. In case of quicksand or of any material that finds its way under the edges of the caisson, extraordinary measures may at times be necessary; but no difficulties have as yet been encountered that have not been readily surmounted by the exercise of ordinary ingenu-



ity. Sometimes the edge of the caisson has encountered boulders, but these have ordinarily yielded to the action of the water flowing around them and forming a pocket in the soil, either within or without the caisson, until progress can be resumed. Often the downward motion of the caisson is so rapid that it can be followed readily by the eye, and from six to thirty-six hours apiece is the record for sinking each of twelve caissons, some of which were 30 feet long.

Water to the amount of about 50,000 gallons a day is drawn from the mains and delivered direct to the pressure pumps, and after doing its work is allowed to flow into a settling tank, whence it is drawn and used over again. It has been found practicable to use one of the caissons as a settling tank after it has been placed in position and the bottom sealed with cement. The caissons are placed by the engineer in charge along the lines where the structural load will rest. When all the material has been removed from the interior of the caisson the whole space is filled up with a concrete formed of cement, sand, and broken rock, or, if preferred, the whole interior can be built up with masonry of stone or brick. Solid columns of artificial stone are thus provided, reaching down as far as may be necessary, re-enforced by the adjacent earth, and growing harder with process of time. The iron or steel caisson may disappear through corrosion in the course of a few years; but this is not of the slightest consequence, as the surrounding earth must at once take its place without danger to the superstructure.

**Wind Bracing.**—With the construction of buildings having 15 to 25 stories and towering 300 feet above the street pavement the problem of resistance to wind pressure forces itself upon the attention of architects and engineers. A paper entitled "Wind Bracing in High Buildings," read before the American Society of Civil Engineers by Guy B. Waite, attracted deserved attention, and called forth protracted discussion at a meeting of the association, which brought out many facts and opinions drawn from the experience of different members, some of whom are very distinguished. One difficulty encountered in such structures is that the forces to be resisted are not as yet very well understood. The resistance of modern walls and partitions crosswise and lengthwise, particularly at great heights, has not been determined with trustworthy accuracy. The tables of resistance for open-work structures, like bridges, trestles, and Eiffel towers, are better understood. The fact that such structures have endured uninjured the storms of many years proves that the calculations of the constructing engineers have not been very far out of the way. It is a fact, however, that many buildings, large and small, are erected without any special provision against wind forces, which, in view of the large areas exposed above surrounding structures, must be formidable. The conclusion would seem to be justified either that the modern method of construction is peculiarly adapted to resist, or that the force of the wind has been largely overrated. The force of storms varies according to laws not yet wholly understood. For instance,

the storm of Oct. 10, 1894, in New York, according to George A. Just, C. E., reached a maximum velocity of 60 miles an hour for a short time, but was far more destructive than the storm of March 28, 1895, which registered 75 miles an hour and averaged 55 miles for a period of nearly twelve hours. The first-mentioned storm was from the northeast, and was accompanied by heavy rain; the other was from the northwest, without rain. Moreover, the point of observation for the second storm was 126 feet higher than that for the first. Allowing for all these differences, the March storm ought apparently to have been far more destructive than its predecessor. The records of the two storms as taken at the Central Park and at the United States Signal-Service Station vary considerably in all details except rainfall. This is explained in part by the difference in altitude. Mr. Just very properly urges the preparation of more exact data of the total resultant effect of wind rather than the maximum pressure, as it has heretofore been termed. The fact appears to be that a wind accompanied by dampness or by rain has far more destructive power than one that is comparatively dry.

The best modern practice in the construction of lofty buildings appears to be to anchor the outer walls and the interior steel cage securely together, utilizing floors and partitions, and cross bracing between columns so that strains will be distributed from one wall to another, and the whole structure be united in absolute rigidity. This method should form a far more enduring structure than was possible under old forms of construction. With a steel interior framework properly put together, the strength of the walls and their power of resistance to all forces from without is enormously increased.

One of the chief dangers in steel construction is corrosion. An instance is given in the case of a building in New York, less than a generation old and very recently demolished to make way for a modern structure, where the ends of the beams had so rusted away that the flanges could be broken off with the fingers. Of course such a destructive process as this must necessarily render a building less capable of resistance to wind pressure in the course of a few years than it was when first completed. The difficulty of adequately protecting steel beams, even when they are properly imbedded and anchored in masonry, was instanced in one of the great modern buildings in New York, where an excellently laid brick wall nearly 4 feet thick was found to be so readily permeable by water under violent wind pressure from northeast storms that a considerable flow of moisture trickled down on the inside. This was corrected by painting the outside of the wall. Another danger is that when the parts of a steel structure do not join accurately, as, for instance, when a column is not vertical on being set in position, it is too common a practice for the workmen to correct the slight fault by driving a few nails under the edge of the column until it is perpendicular, or, which is a little better, but still not commendable, by using thin bits of iron, called "shims" or "Dutchmen," instead of nails. Of course, such makeshift devices set at naught all calculations for the permanent distribution of

strains, since the columns carrying perhaps the entire weight of the building, instead of bearing on solid flat surfaces bear at best upon several distributed points. When the building settles, or corrosion sets in, these points are the first to feel its effect and yield to the tremendous pressure. In the case of the recent collapse of a building in New York it was shown by investigation that the disaster was probably chargeable to precisely this kind of work. Floor beams of different depths were made to fit by makeshift devices, and, so far as was ascertainable, the bearing of the principal column upon its base was so ill adjusted that a collapse was inevitable sooner or later. Fortunately, it took place before the building was finished.

Conscientious supervision on the part of architects, engineers, and city officials seems to be the only guarantee that steel-frame construction will not become more and more insecure the older it grows. If not properly protected, such a structure must necessarily weaken by corrosion, and eventually become incapable of resisting excessive wind pressure.

**Strength of Brickwork.**—A fund for experimental research has been established by the Royal Institute of British Architects, and their first investigations are directed to brickwork, as being upon the whole the most generally useful form of masonry. The phenomenal endurance of bricks for all crushing strains has been recognized time out of mind, even the scriptural Tower of Babel having been built of brick. Its strength under what may be termed beam strains is known to comparatively few. A brick wall about fifty years old was available for the experiment, which was conducted by Mr. A. G. Lyster, and is described in the journal of the Institute. The wall was two feet thick, and an opening twelve feet square was cut through it. Near the ground a lintel or bridge of bricks was left, reaching across the opening. At first this bridge was seven courses thick, but it would not break under all the iron that could conveniently be placed upon it, so the load was removed and three courses of brick were knocked off and the ends cut clear of the surrounding brickwork. This left four courses of bricks. Then the iron weights were replaced to the amount of 6 tons 9 hundredweight and 23 pounds upon the center of this seemingly slender support. The brick beam carried this load for thirty hours without any apparent sign of giving way. When finally it did break, the fall took place at night when it could not be observed. All the materials in this wall were of the best kind—the lime and mortar was strongly hydraulic and the bricks hand-made. It is not likely that average brickwork would stand anything like such a test, but the experiment tends to increase confidence in brick or terra-cotta work of all kinds, provided reasonable care is taken in the construction and in the preparation of mortar. Especially is this true of the floors of modern buildings, which are to a very great extent practically of brickwork resting on iron floor beams. The pieces of which these floors are composed are or should be so shaped that they bind firmly together and sustain their load by thrust as well as by the adhering surfaces that are covered with mortar or cement.

**A Novel Coal Dump.**—The Excelsior Iron Works of Cleveland have lately constructed, from the plans of Timothy Long, a new device for unloading coal cars, which promises to be superior to anything of the kind thus far introduced. A strong cylindrical frame is constructed of steel truss work, of sufficient dimensions to allow an ordinary coal car to run through it on tracks that extend from end to end and "register" with the rails of the permanent way. The loaded cars, as they come up, are successively run into it, the wheels are blocked, and powerful clamps, actuated by hydraulic power, grip the car along its platform and framework. This is effected by a very simple adjustment, which acts almost automatically on all cars ordinarily used for coal transport. When the clamps are fixed, a set of machinery is thrown into gear and the entire cylinder revolves, rolling up an inclined cross track until the car is upside down and every particle of coal tumbles out into a chute below. The cylinder is then allowed to roll back to its original position, the clamps are loosed, and the empty car goes on its way, to be followed by a succession of loaded ones. In a test case—doubtless prearranged for purpose of record—it is said that 3 fully loaded cars were discharged into a vessel lying alongside the wharf in three minutes. The whole apparatus is operated by an engine of moderate size, and the services of only 3 men are required.

**Laying a Gas Main.**—In the course of the construction of the Harlem Ship Canal it became necessary to lay a 12-inch gas main across and under the navigable channel at Kingsbridge. As the work must necessarily be submarine, it was desirable to finish it quickly so as to interfere with navigation for the shortest possible time, and to lay the section of pipe in one piece, so that water should not find its way inside. The problem involved the laying of a section 378 feet long, weighing about 50,000 pounds, in water 20 feet deep. By means of a suction dredge a ditch of the required dimensions was cut across the bottom of the canal, inequalities being cleared away from its bottom and everything prepared for the reception of the pipe. Twelve pontoons were constructed of heavy hemlock timber and painted with coal tar; they were each 50 feet long and 5 feet square. They were arranged in pairs with crosspieces holding them 3 feet apart. Between these pairs of pontoons the sections of pipe were suspended, so that they hung just clear of the water. A central section of 78 feet was put together, the joints being of the Ward flexible pattern, and floated on its pontoons to the middle of the channel, leaving spaces open for navigation between either end and the shore. Along the shores 2 other sections, each 150 feet long, were floated and joined on similar pairs of pontoons. On Oct. 13, at slack low water, navigation was stopped, and the 2 shore sections were swung out till the ends touched the middle section already in position. Workmen were ready, the pontoons were securely anchored, the connections were made between the sections of pipe, and ropes were adjusted to derricks, which stood on the pontoons ready for lowering. A large number of men had been drilled to work these

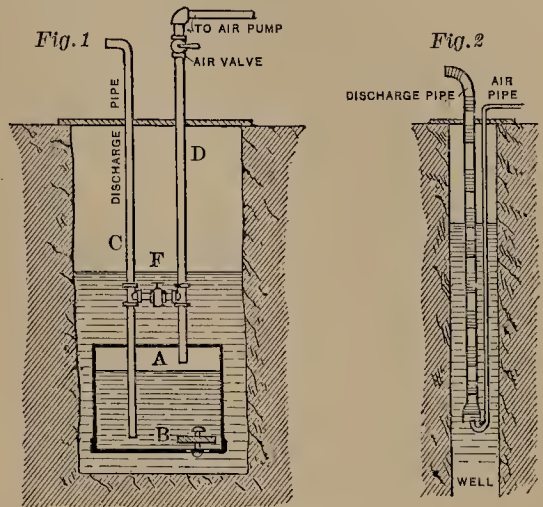


ropes, which were marked off with red paint in 1-foot lengths. At a signal each man slacked away on his rope, lowering it slowly 1 foot. Then, without waiting for orders, he made it fast. In the meantime other men, at the 2 shore ends of the pipe, were adjusting the vertical section, the connecting elbow of which should sink under water with the main pipe. This done, the lowering proceeded, 1 foot at a time, and in about four hours the entire length of pipe was safely deposited in its bed at the bottom of the canal. The pontoons were swung out of the channel, and the blocked fleet of barges and canal boats resumed its course. On attempting to adjust the vertical stand-pipes, however, it was found that something had gone wrong, and a diver discovered that as the pipe settled into position it had buckled slightly upward, so that several lengths did not rest upon the bottom. In order to correct this, the engineers resorted to an ingenious and somewhat daring expedient. The hoisting ropes were re-adjusted, but not "plumb." Each rope where it encircled the pipe was moved a short distance out of the perpendicular, so that when raised clear of the bottom the whole length of pipe would tend to swing a few inches, and so straighten itself. The lifting power of the rising tide was trusted to do the work, the men standing by to slack away when the word was given. Slowly the floating pontoons rose with the water, and as soon as the point was reached where the tendency to swing overcame the holding power of the bottom the whole length of pipe swung itself gently into position, the signal was given, the ropes were cast off, the long pipe settled easily into its bed, and the adjustment was found to be perfect. No leaks developed, and this ingenious piece of engineering appears to have been entirely successful. The credit of the affair is due to Messrs. W. H. Bradley and C. C. Simpson, consulting engineers of the Consolidated Gas Company.

**Compressed Air.**—Electricity is not enjoying a monopoly in the distribution of power and the operation of new mechanical appliances. In France street cars are successfully operated by compressed air. On the Chicago Drainage Canal powerful compressors force air at working pressure through pipes 2 or 3 miles long, distributing power to rock drills along the route; flexible connections are also made with small engines used for various purposes on the works. Pneumatic hoists and other appliances have been made very simple and convenient, and are coming largely into use. As a refrigerating medium for freezing wet soils, where it is difficult to prepare foundations, compressed air has been successfully used.

One of the most remarkable discoveries in this direction, and one apparently destined to revolutionize much of the most familiar machinery in domestic establishments as well as in manufacturing, is known as the "air lift." It was originally devised by Dr. J. G. Pohlé in 1884. He was superintending mining operations in Colorado. In the works under his management was a tunnel about 1,200 feet long, and at the end of it a shaft 65 feet deep. This shaft became filled with water, which had to be pumped out. An air compressor was available outside

the tunnel, driven by water power, and he decided to pump the water out of the shaft by one of the ordinary methods of using compressed air. An apparatus was constructed, as shown in Fig. 1, except that the connecting pipe at F



between the air pipe and the discharge pipe was not at first introduced. An iron box, A, with an upward opening valve, B, in its bottom a discharge pipe, C, and D, an air pipe by which the compressed air was forced downward into the box. The box was lowered nearly to the bottom of the shaft, and the compressed air forced in at the top until nearly all the water contained in the box was driven out through the discharge pipe, whence it fell into a drain, and ran out of the tunnel. The principle is exactly the same as that of the familiar water siphon, or like the less popularly familiar contrivance used by chemists in laboratories, known as the Berzelius washer. This simple apparatus worked well enough until a leak developed in the iron box, releasing part of the compressed air, which made a considerable disturbance in the surrounding water. This proved to be one of those lucky accidents that lead to important discovery. Instead of stopping altogether, the flow of water continued from the discharge pipe in diminished volume at a height of 65 feet above the leaky box, and Dr. Pohlé's curiosity was naturally aroused. After studying the problem for some hours, he conceived the idea of connecting the two pipes, as shown at F, the new pipe being provided with an air cock. When all was ready the compressor was started and the cross connection opened, admitting air into the discharge pipe near the surface of the water. The immediate result was a largely increased and quite violent discharge of water at the top of the pipe. It was further found that the expenditure of power by the compressor pump could be largely reduced, while the discharge of water still increased in volume, though the air pressure was only half what was required before the leak developed in the box.

This discovery called for reconstruction and resulted in what is now known as the "Air lift." A discharge pipe with a bell mouth at its end is lowered into the well and firmly fixed there, with its mouth as far below the surface of the water

as is convenient or practicable. Beside this is a smaller compressed-air pipe going down to an equal distance and bent so that it opens upward and delivers compressed air under the mouth of the discharge pipe. When the lift is not working the water level is identical in the well and in the discharge pipe. When the compressed air is turned on a bubble immediately fills the base of the discharge pipe and lifts the water above it as far as it can by the combined force of expansion and buoyancy. Another bubble forms instantly as the water rushes in below bubble number one, and adds its lifting effort, assisted instantly by bubble number three; and so they follow one another, each pushing its quota of water up the pipe and expanding so rapidly that the discharge at the surface is apparently continuous. This operation of what may almost be termed a natural law was mysterious so long as metallic pipes were used, but working models were constructed with glass pipes, and the explanation of the phenomenon became evident at once. The height to which water can be lifted depends upon the depth to which the bell mouth of the discharge pipe can be submerged. With such an apparatus as has been described Dr. Pohlé has lifted water several hundred feet, but he regards 150 feet as the limit beyond which it is desirable to use a series of lifts one above the other, connected with a common pipe for furnishing compressed air.

The great practical value of this discovery has been generally recognized only within a year or two. Practically it overcomes the limitations of the old-fashioned pump as defined by atmospheric pressure, and does away altogether with the direct lifting appliances necessary in the case of the force pump. At Asbury Park, N. J., a trial was made in a 4-inch well 570 feet deep, which did not discharge naturally at the surface. With the air lift it discharged 178 gallons a minute. When applied to a 6-inch well near by which had a natural flow at the surface the discharge was increased nearly fourfold, and the surface discharge ceased. Thus it is seen that wherever a small power is available—either water power or any of the small motors used for domestic purposes, or even hand power—compressed air can be made largely to increase the water supply, and, in fact, provide running water in localities where it has previously been unknown except by the introduction of costly waterworks. Probably the most available power for this purpose will be found in windmills, which can be used to compress air into reservoirs conveniently located, whence its own elasticity will carry it wherever needed.

While we are on the subject of compressed air, a device may be mentioned which is expected to bring the top stories of lofty city buildings within reach of fire extinguishers. Heretofore it has been necessary to provide tanks at least 10 feet higher than the highest ceiling in the building. These tanks have to be filled with water, and kept full, and in case of fires they afford inadequate protection to the top floor because the head pressure is not sufficient to throw an effective stream. The new plan is known as the pressure-drum system, and has been placed in several large buildings. A series of drums is provided, each 5 feet in diam-

eter and 9 feet high, capable of resisting an interior pressure of 200 pounds to the square inch. A service pipe runs from the end drum to the top of the building, with hose and the necessary appliances on each floor. Into these drums compressed air is forced, and as it retains its elasticity indefinitely, the attendants in the building have nothing to do but turn on water at any floor, and a powerful stream is at once available. This, it is calculated, will continue for about twenty minutes, by which time the fire department should be on hand, when the engine hose can be attached to the drum and the supply of water kept up as long as it is needed. The device, it is understood, has been approved by the Board of Fire Underwriters in New York.

**A New Sectional Side-launch Dock.**—The launching of vessels, seagoing and otherwise, sidewise instead of endwise is not uncommon on the Great Lakes, and several permanent sets of launching ways have been constructed. The first of this kind on the Mississippi river is a few miles below St. Louis. It is used mainly for the construction and repair of river boats, which are flat-bottomed, seldom drawing more than 4 feet of water, and of such width that ordinarily they do not need to be shored up. Steamers of 1,000 tons burden have been raised on this dock, some of them 360 feet long, 50 feet wide, and 9 feet in depth of hold. The general slope is formed of heavy timber ways, shod with iron 8 inches wide and forming tracks for the iron wheels that support the cradles. Other wheels, running on each side of the ways, keep the cradle wheels on the tracks. At the upper end of the sloping ways is a long iron or steel shaft running the full length of the dock, and above this a counter-shaft with sprocket wheels carrying a heavy iron chain, which connects with the cradles. The large chains known as the carriers have links 9 inches long made of 1½-inch iron. These follow the sides of the ways extending under water and passing around pulleys at the lower edge of the framework, where the water is deep enough to float any river craft. When a steamer or other craft is to be docked the cradle is allowed to run down the ways until it is submerged to the required depth when the vessel is floated upon or over it, the shaft is revolved, and the cradle emerges easily from the water, carrying its load up the slope. Adjustments are made to guard against any possibility of unequal motion among the cradles when the shaft is revolving, and it is found that the largest of river steamers may be safely and expeditiously handled by this machinery.

**Electricity for Elevated Roads.**—Chicago has taken the lead in the application of electricity as a motive power on the elevated lines. A number of these lines were constructed during the Columbian Exposition, and did excellent service with ordinary steam rolling stock during that crowded period. Since then they have been run at a loss, and the electric appliances have been introduced partly with a view to diminish expenses, partly to attain higher speed, and partly to get rid of much of the dust and noise incident to steam service. The tracks in use for the electric motors are laid with 90-pound T-rail, each securely bonded to the supporting structure. A third or trolley rail is a 45-pound T-rail placed



on one side of the track. This trolley rail is supported on blocks of Georgia pine impregnated with paraffin, and these, in turn, rest on iron pedestals without further insulation than that afforded by the wood. The conducting quality of these rails is perfected by light fish-plates and copper strips. On the Metropolitan line the motor cars are 40 feet long, the controlling devices being in the corners of the car and occupying but half of the platform, each car carrying a 3-horse-power motor and a small air pump for working the brake. The cars seat 40 persons. The motor cars are used as smoking cars, the trailers or regular passenger cars having a larger seating capacity. The power equipment of the motors is 2 100-horse-power motors, registering 2,000 volts. These are mounted in the trucks, and the current is taken from the trolley rail by sliding iron shoes depending on each side near the corner of the car. The 2 sliding shoes are made to break joints, so to speak, so that where interruptions occur at crossings and switches one shoe or the other will be continuously in contact with the trolley rail. In general, a train consists of 4 cars.

The power plant is believed to contain the largest dynamo in the world. It is at present capable of producing about 6,000 horse power, and it is understood that this can readily be doubled.

**Hydraulic Dredge.**—Probably the largest hydraulic dredge in the world, certainly one of the largest, has been designed by Lindon W. Bates, civil engineer of Chicago. It is building for the United States Government and is intended for work on the bars in the channel and at the mouths of the Mississippi river. The general dimensions of the float are, length, 172 feet by 40 feet; beam, 7 feet 10 inches deep. Nominally the boilers are 3,000 horse power, with a pumping capacity of 6,000,000 gallons an hour. To make a cut through an ordinary river bar 40 feet wide it is assumed that 25,000 cubic yards of material must be removed. To accomplish this in twenty-four hours a machine must be able to dredge at least 1,600 cubic yards an hour. It is claimed that under favorable conditions this machine can nearly double that performance. Briefly, the construction of the dredge is as follows: In front of the float are 6 hollow cylinders, each 5 feet in diameter and 35 feet long. These rest side by side, and can be projected forward and downward. Machinery causes them to revolve at will, each about its own vertical axle, and as they are lowered they cut into the bottom of the river, and by revolving loosen the soil, churning it into a semi-liquid mud, which is then pumped up through 30-inch pipes attached for the purpose to the cylinders. The pumping is done by 2 independent centrifugal pumps, which deliver the material dredged into larger pipes and discharge it at whatever height may be necessary for it to descend by gravity to the dumping ground. The dredge can be moved in any direction by the operation of anchor spuds.

**Harbor of Refuge.**—An interesting instance of adapting natural features to the requirements of commerce is found in a work lately completed at Block Island, off the coasts of Rhode Island and Connecticut. This little island,

about 9 miles long, lies in the track of coastwise and to some extent of trans-Atlantic commerce, 25 miles off shore, midway between Montauk Point and Martha's Vineyard. It is now something of a summer resort, but until a few years ago was inhabited only by fishermen. It has no natural harbor, and the boats used by the inhabitants had to be hauled up on the beach by means of tackle, usually operated by oxen. The island is nearly divided by Great Salt pond, which is separated from the ocean on both sides only by narrow strips of land. The pond, which has a maximum depth of 60 feet, covers about 1,600 acres, so that vessels of considerable size can find safe anchorage within its area. The work has thus far been done at the expense of the State of Rhode Island. Col. Mansfield, of the United States Engineer Corps, acting under orders from the department, has made a survey of the harbor, and reported in favor of deepening the channel to 25 feet, and widening it to 600 feet.

**EVANGELICAL ASSOCIATION.** The statistical report made to the General Conference of this denomination, held in November, represented that it had lost about 40,000 members by the division it had suffered, while the reduction in missionary contributions had not been more than \$5,000 a year. The publishing house in Cleveland, Ohio, had realized a gross profit of \$213,119 in four years, and its receipts during that period had been \$7,975 more than in the preceding quadrennium. Since it was instituted, in 1838, this concern had disbursed \$275,797 to annual conferences. Its various publications had an aggregate circulation of 232,105 copies. The branch publication house at Stuttgart, Wurtemberg, likewise made a satisfactory exhibit. The sum of \$26,000 was apportioned from the profits of the publishing house in dividends among the annual conferences. The missionary receipts for the past year had been \$135,538, and the total receipts for the past four years \$543,774, while the expenditures for the four years had been \$600,209. The missionary moneys were divided between the Home Mission and the European and Japan Mission funds, for which separate accounts are kept. All the missions were represented in the address of the bishops as being in a prosperous condition. The Home Missions included 497 stations, with 497 missionaries, 39,609 members, and 6,662 members newly received during the year, while 16 missions had been changed to regular stations and 40 new missions had been established. In the foreign fields were 84 stations, 119 missionaries, and 11,829 members, with 1,226 members received during the year, 7 missions changed to regular stations, and 1 new mission. Of the whole number of members returned, 11,112 were in the European missions in Germany and Switzerland. The Japan conference returned 17 pastoral charges, 19 missionaries (including 3 Americans), and 727 members, showing an increase of 77 members. A Deaconesses' Home was connected with the European mission. The contributions of the Woman's Missionary Society amounted to \$2,500. The Young People's Alliance was organized in 19 conference branches, with 768 local alliances and 28,743 members.

The twenty-first annual conference met at Elgin, Ill., Oct. 3. Among its more important

acts were the change of the "time limit," or the period during which a minister can be sent by annual appointment and reappointment to the same pastoral charge, from three to four years; the appointment of a commission to revise the language of the Discipline, whose work is to be submitted for approval and examination to another larger committee, and then reported to the next General Conference; the institution of an English and a German paper for the Young People's Alliance; and the adoption of a provision for lay representation in the General Conference on the basis of one lay delegate for each annual conference having 4,500 members, and two for those having 9,000 members, but no conference to have more than two; conferences having less than 4,500 members are to be formed into districts, which shall stand under the same regulation as those single conferences which are entitled to one and two delegates. Lay delegates were given equal rights with the ministerial delegates except in the trial of ministers, the reception of candidates into the ministry, the ordination of ministers, and the transactions of annual conferences concerning trials of ministers. Qualification for election to be lay delegates was limited to male members of at least thirty years of age and of seven years' standing as members of the Evangelical Association, and who "have proved themselves faithful." A commission was appointed to prepare nonresident and correspondence courses of study and reading for preachers, supplementary to the regular course for junior preachers, in English and German, and a course of reading in German and English in the various departments of knowledge adapted to the young people. Propositions to make presiding elders eligible for only two terms in succession, to insert a question concerning membership in secret oath-bound societies in the list of questions addressed to candidates for license to the ministry, to question such candidates concerning their use of tobacco, and to make the presidents of the colleges *ex-officio* members of the General Conference were not approved. To a request for a definition of the relation of baptized infants to the Christian Church, the General Conference responded that, whereas the membership of such children was divinely recognized and the Evangelical Association had received them from the time of its organization and had made provision for their registry and enumeration, no further action was necessary to explain its position. A rule was adopted that no preacher should be permitted to remain longer than two years in the itinerancy without appointment. Resolutions were passed favoring divorce on biblical grounds only, and recommending the harmonizing of the divorce laws of the different States on a sound moral basis; pledging opposition to all encroachments upon the sanctity of the Sabbath; expressing utter abhorrence of any method of dealing with the liquor traffic that provides for its continuance, and warning all members of the church using or trafficking in intoxicating liquors of the penalties prescribed against them in the Discipline of the Church; and discountenancing the use of tobacco and trafficking in it. The young people were urged to acquire a liberal and, if possible, a classical, education. J. J. Esher, Thomas Bowman, S. C.

Breyfogel, and William Horn, bishops for the past four years, were re-elected for another term of four years.

**EVENTS OF 1895.** The year 1895 opened with a great war in progress in the Eastern Hemisphere, and several lesser wars and insurrections elsewhere more directly involving European and Western interests. It closes with Japan the most formidable of the Oriental powers; with an allied European fleet anchored within easy reach of the Dardanelles; with the insurrectionary forces in Cuba threatening the approaches to Havana, the Spanish capital; with an armed but unauthorized British invasion of the Transvaal in South Africa; and a very grave diplomatic complication between Great Britain and the United States. The most deplorable conditions of the year have centered about Armenia in Asia Minor, where many thousands of Christians have been ruthlessly murdered by Moslems in spite of protests from the civilized powers and seemingly in deliberate defiance of half-hearted measures of repression on the part of the Sultan. On the whole, the year seems to mark a transition period rather than the realization of any great movement toward a higher civilization.

**January 1.** New York: Meeting of the Legislature at Albany; Hamilton Fish chosen Speaker of the Assembly. Kansas: Anderson Grey sentenced to be hanged for having committed a murder by hypnotizing another man. Dispatches from eastern Turkey confirm reported massacres of Armenian Christians.

**2.** United States Senators Wolcott, of Colorado, and McMillan, of Michigan, re-elected by the Republicans. England: A committee of the Privy Council reverses the decision of the Canadian Supreme Court in the Manitoba school case, giving the Dominion Government power to legislate in behalf of the Roman Catholics. Russia and England agree upon an amicable settlement of the Pamir dispute. Turkey: Mgr. Izmirlian confirmed Patriarch of Armenia. Brazil grants amnesty to participants in the late rebellion.

**3.** Washington: The President nominates Col. G. Norman Lieber to be judge-advocate general of the army. Georgia: County elections show heavy Democratic gains. Maine: United States Senator Fry unanimously renominated by the Republicans. San Francisco: A civic federation organized to begin a crusade against vice.

**4.** Austria: The Government protests against a discriminating duty imposed by the United States tariff as being against treaty rights. Turkey: The Porte applies to the powers under the Berlin Treaty for protection against Great Britain and Russia in regard to Armenia.

**5.** Washington: A meeting of Cabinet officers considers the German protests against alleged treaty violations on the part of the United States. John Burns, M. P., the English agitator, sails for home. France: Captain Dreyfus, of the army, is publicly degraded in Paris for having sold French military secrets to foreign governments. Italy: Dissolution of the Parliament.

**6.** Washington: The publication of Revolutionary archives in the custody of his department recommended by the Secretary of State. California: The Governor scandalizes the public by appointing a notorious sporting man as police commissioner in San Francisco.

**7.** Tennessee: Senator Isham G. Harris renominated by the Democrats. England: The Royal Yacht Squadron agrees to the terms of the New York Yacht Club for an international yacht race in September.

**8.** Chicago: Debs and his associates of the Ameri-



can Railway Union are committed to jail for contempt of court. London: An anti-lynching committee sends a message of sympathy to the colored people in the Southern United States. France: Brisson is re-elected President of the French Chamber. Korea: National independence formally declared. Newfoundland: The city of St. John's in possession of a mob demanding work or bread. Royalist uprising in Hawaii; suppressed by the Republican government.

9. North Carolina: The Legislature organizes by the election of Republican nominees. Wyoming: Ex-Senator Warren and Congressman Clark nominated for the United States Senate by the Republicans. Massachusetts: Senator Hoar renominated by the Republicans. New York: Influenza or grip is regarded as almost epidemic.

10. The Democratic Congressional Campaign Committee decides to establish permanent headquarters at Washington. California: The election is confirmed of James H. Budd (Democrat) as Governor. New Hampshire: United States Senator Chandler renominated by the Republicans. Cincinnati: Archbishop Elder promulgates a papal decree against Odd Fellows, Knights of Pythias, and Sons of Temperance. Belgium: All gambling houses in Brussels ordered closed.

11. California: Senator Perkins renominated as the Republican candidate for the Senate. West Virginia: Stephen B. Elkins, Republican, is unanimously nominated for the United States Senate. Indiana: Gov. Mathews recommends that prize fighting be made a felony.

12. Idaho: A constitutional amendment granting suffrage to women passes the Senate without a dissenting vote.

13. Ohio: Col. A. B. Hoyt, who ordered the militia to fire upon a mob of lynchers at Washington Court-house, has been indicted for manslaughter. Russia: Observance of the national New Year festival, the Czar distributing honors. Germany: Chancellor Hohenlohe visits Prince Bismarck at Friedrichsruh. France: Resignation of the Cabinet. Hungary: Formation of a new Cabinet by the Baron Banffy, who will act as Premier. Belgium: Sixteen anarchists on trial for the dynamite outrage at Liège. France: M. Casimir-Périer resigns the presidency of the French republic. Africa: Serious encounter between Italians and the Abyssinians. Prussia: The Diet opened by the Emperor, who reads a speech from the throne.

16. Washington: Annual conference of the Board of Indian Commissioners and religious associations working among the tribes. Sacramento: Twenty-fourth annual convention of the American Chronological Society. Prussia: A repeal of the anti-Jesuit laws is discussed. Siam: The King issues a decree appointing a legislative body.

17. Senators Cullom and Dolph are renominated by the Republicans of Illinois and Oregon. Idaho: A resolution to submit the woman's suffrage question to the people is adopted by the Legislature. Washington: A writ of error denied in the Debs case before the Supreme Court, but leave is granted to petition for *habeas corpus* returnable Jan. 28. Indianapolis: A threatened bread war brings down the price to 3 cents a loaf. France: Félix Faure elected President of the republic. Argentine Republic: Resignation of the Cabinet because the President refuses amnesty to political offenders. Italy: Signor Celli, the public prosecutor, murdered in his office by an anarchist. England: The Duke of Argyll retires from public life.

18. The Mayor of Brooklyn calls upon the Governor for troops to suppress a strike of trolley employees. Albany: The Lexow Committee submits its report to the Legislature. New York: The Mercantile National Bank is swindled out of \$144,000 by a bond broker named Quigley, who is arrested. France: The new President invites ex-Minister Bourgeois to form a Cabinet, which he fails to effect. Canada: A bread

riot is forcibly suppressed by the police in Montreal. Korea: The Japanese rout a strong force of rebels with great slaughter.

19. Washington: The President nominates James D. Tillman, of Tennessee, to be minister to Ecuador. Brooklyn: State troops disperse threatening mobs of strikers at the point of the bayonet. New Orleans: A convention in the interests of Socialists under the title of a ballot-reform league fail to excite any popular interest, only about 50 delegates attending. Syracuse, N. Y.: Fitzsimmons, the pugilist, indicted for killing his sparring partner Riordan. Hawaii: The ex-Queen arrested on charges of complicity in the recent revolt.

20. San Francisco: United States steamship Philadelphia sailed for the Sandwich Islands in consequence of renewed agitations there. Brooklyn: Many conflicts, some of them fatal, between troops and riotous strikers. England: The Admiralty requires £25,000,000 to put the British navy in a state of complete efficiency.

21. Washington: Debs and his associates are admitted to bail in \$2,000 each by the United States Supreme Court. The Supreme Court declares that the Sugar Trust is neither a conspiracy nor a combination, Justice Harlan dissenting.

22. Cincinnati: Meeting of the National Manufacturers' Convention. Germany: Negotiations opened with Japan for a commercial treaty.

23. Minnesota: Election of Gov. Knute Nelson to be United States Senator (Republican). South Dakota: Both branches of the Legislature pass a bill resubmitting the prohibitory law to a popular vote. China: Marines have been landed from various foreign war ships to protect Christian missionaries at Chefoo.

24. Washington: The "silver-bribe case" to compel the Treasury to coin silver bullion in standard dollars is dismissed by the Supreme Court. Chicago: Debs and his associates placed on trial for conspiracy in the United States court. Wales: A deficit of £552,968 found in the accounts of the National Bank at Cardiff.

25. Nebraska: The Legislature appropriates \$50,000 for seed for distressed farmers. Belgium: A violent quarrel in the Chamber of Deputies between Catholic and Socialist parties; the President of the Chamber resigns, and the sitting is adjourned.

26. China: Severe fighting continues between the Japanese and Chinese, the Chinese continually falling back. Australia: A large meeting in favor of federation is held at Melbourne, the Chief Justice of Victoria presiding, and the Premiers of New South Wales, South Australia, and Victoria being present.

27. Brooklyn: The trolley strike shows signs of weakness. Ohio: An encounter takes place between glass-works strikers and troops called out to preserve order. Baltimore: Eighth annual convention of the Improved Order of B'nai B'rith. France: A new ministry is announced, M. Ribot assuming the treasury portfolio as well as the premiership. Preliminary session of the European commission of inquiry into Armenian outrages. Mexico: A boundary dispute with Guatemala assumes serious shape, and war is anticipated. Rome: The papal encyclical to the American episcopate is made public.

28. Washington: The United States Government undertakes to arbitrate between Mexico and Guatemala. Brooklyn: The trolley strikers intimate their readiness to return to work. West Virginia: Defeat of the woman's suffrage amendment in the Senate. France: The new President sends his first message to the Chamber of Deputies. Turkey: The Porte intimates its intention to reform Armenian abuses by removing certain accused officials.

29. Arkansas: United States Senator Berry re-elected. Rhode Island: A bill passed prohibiting pool selling. Chicago: Receivers appointed for the "Whisky Trust" by the Federal Court. San Francisco: It is discovered that the will of the late ex-Senator Fair has been stolen from the county clerk's



office. Georgia: Mrs. Grant, widow of the general, stops at Atlanta on her way South, and receives a delegation of Confederate veterans. Washington: Through the mediation of Secretary Gresham a conference is brought about between the ministers of Mexico and Guatemala. Russia: In a speech to deputations from the chief cities of the empire the Czar declares his intention to uphold autocracy. Australia: Formal organization of the federation conference.

30. Washington: A preliminary agreement reached by the Mexican and Guatemalan ministers. President Eliot, of Harvard, declares in his annual address that football is no longer a fit game to be played by college students. New Hampshire: A defalcation discovered in the National Bank of Dover amounting to \$97,595. Hawaii: Formal abdication of the late Queen.

31. Arizona: Masked robbers hold up a Southern Pacific train near Wilcox and secure some \$10,000 in Mexican silver. Atlanta, Ga.: Annual convention of the American Woman's Suffrage Association, Susan B. Anthony in the chair. China: The Japanese capture Wei-Hai-Wei, the great Chinese stronghold. Norway: The tariff question causes the resignation of the Cabinet. France: A political amnesty bill adopted in the Senate. Colombia: Government troops gain a victory over the insurgents. Peru: The city of Arequipa captured by the rebels.

February 1. Washington, D. C.: Lawrence Maxwell, Solicitor-General, resigns; Holmes Conrad, of Winchester, Va., appointed his successor. Washington (State): Congressman John L. Wilson elected United States Senator by the Legislature. Newfoundland: Prime-Minister Green resigns; Sir William Whiteway succeeds him.

2. New York: Conference of Assistant-Secretary Curtis of the United States Treasury with foreign bankers regarding a new bond issue. Brooklyn: The president of the trolley lines vainly requests permission to arm his employees to resist further violence.

3. Chicago: At a meeting of the Order of Railway Conductors action is taken renouncing connection with the American Railway Union. Japan: The Chinese peace envoys are requested to withdraw, their credentials being insufficient.

4. Brooklyn, N. Y.: 2,000 strikers assemble at the City Hall, and the Board of Aldermen passes a resolution annulling the franchises of the trolley companies (this action was subsequently vetoed by the mayor). Washington: The Supreme Court decides adversely to Mr. Chapman who declined to testify in the matter of the Sugar Trust. Argentine Republic: In the general elections the Radicals secure large gains.

5. Chicago: The Home Saloon Association opens the first of its refectories where none but temperance drinks are served with free lunch and reading matter free for the use of patrons. North Carolina: Annual session of the National Farmers' Alliance and Industrial Union at Raleigh. England: Parliament reassembles. Germany: The Economic Union urges Government to call a bimetallic conference at Berlin.

6. Washington: The President decides in favor of Brazil in the boundary dispute between that country and the Argentine Republic. Tennessee: Henry Clay Evans takes oath as Governor at Nashville and will contest his claim to the office in the courts. South Carolina: An attempt to reorganize the Republican party at Columbia assembled 125 delegates, of whom only 20 were whites. Australia: A conference of prime ministers at Hobart approve the federation bill.

7. Oregon: A resolution passes the Legislature extending the suffrage to women. New York: A bill passes the State Assembly prohibiting sparring exhibitions. Minnesota: The Rev. John White elected Bishop of Indiana by the diocesan convention of the Episcopal Church. England: In the House of Commons Government announces its intention of considering the distress due to a want of work in the

country. China: Two Chinese war ships sunk off Wei-Hai-Wei by the Japanese. Chili, South America: The Chamber of Deputies adopts a bill for the conversion of paper money.

8. The President nominates Brig.-Gen. T. H. Ruger to be major general. Brooklyn: Indictment of several of the trolley strikers. China: Further naval engagements off Wei-Hai-Wei, three more Chinese war ships sunk.

9. Hawaii: A court-martial imposes the death sentence upon several leaders in the late royalist uprising.

10. Colombia, South America: Large detachments of insurgent troops surrender to the Government.

11. The President announces in a message to the Senate that the Bering Sea regulations are insufficient. New York: Arrival of the overdue French steamer *La Gascogne*. Gov. Morton signs the bill authorizing Mayor Strong to remove heads of departments. England: John Redmond, the Parnellite leader, submits an amendment asking that the question of home rule be submitted to the country, lost by 20 votes. Germany: A majority of the Reichstag adopts a measure to grant pay and traveling expenses to members. Chili, South America: The Government decides to buy all railroads.

12. Chicago: A new trial of the Debs case ordered because of a juror's illness. Ohio: Meeting of the United Mine Workers of America at Columbus. Albany: Bill Cook, the notorious Western outlaw, sentenced to forty-five years in the penitentiary. Illinois: The shortage of \$360,000 in the State Treasurer's accounts refunded by the banks that were on his bonds. Brazil: Celebration at Rio in honor of President Cleveland's decision in the boundary dispute. England: The Lord Mayor of Dublin petitions the House of Commons to release Irish dynamite prisoners. Italy: Radicals and Socialists defeated in communal elections.

13. Brooklyn: Railway officials indicted for alleged violation of the ten-hour law. China: Final surrender of the fleet and the remaining forts at Wei-Hai-Wei to the Japanese; several Chinese officers high in command commit suicide in anticipation of execution by the Imperial Government because of their failure to achieve victory.

14. North Dakota: Defeat of the proposition to re-submit the prohibition amendment. Ohio: A considerable number of Knights of Labor secede from the General Assembly at Columbus and organize as the Independent Knights. England: The House of Commons rejects by a vote of 299 to 111 the motion to reconsider the dynamiters' sentences. France: An international silver conference is urged by the Society of French Agriculturists, which declares in favor of bimetallicism. Mexico and Guatemala: A satisfactory settlement of the boundary dispute is announced. Massachusetts: By a vote of 8 to 3 a legislative committee on woman's suffrage reports in its favor. New York: A committee of the Legislature begins to investigate the Brooklyn strike, for participation in which 27 persons have already been indicted. Germany: In the Reichstag a proposition is considered for an international monetary conference. Colombia, Central America: The United States minister at Bogotá announces the revolution at an end.

15. The President appoints Right Rev. Dr. Henry D. Whipple, Bishop of Minnesota, as a member of the Indian commission in place of Charles C. Painter, deceased. Brooklyn: Knights of Labor decide to call off the strike on the trolley railroads. Germany: By an overwhelming vote the Reichstag decides in favor of a monetary conference. France: By a vote of 305 to 205 the Chamber of Deputies rejects a motion for the separation of Church and state.

17. New York: The Morgan-Belmont Bond Syndicate deposits \$22,000,000 in the Subtreasury. Boston: A gang of men who compel boys to beg for them broken up by the police. Armenia: Reports of further atrocities by the Turks.

18. New York: Thomas C. Platt organizes a polit-



ical campaign against Mayor Strong of New York city, the latter refusing to make certain appointments to office. Annual meeting of the League of American Wheelmen. Washington: Second triennial session of the National Council of Women. England: The Chamberlain amendment to the reply to the Queen's speech is defeated in the House of Commons. Peru: Insurgent forces attack Lima, and the city is in a state of siege.

19. Philadelphia: Warwick elected mayor. New Jersey: Gov. Woertz signs the bill to prevent the destruction of the Palisades on the Hudson. Cleveland: Annual Convention of the National Educational Association, also of the National Electric-light Association. Washington: Meeting of the Society of the Daughters of the American Revolution; Miss Frances Willard and her companions present the "Polyglot Temperance Petition" to the President. Chicago: The civic federation submits to the Legislature a new plan for city government. Norway: In opening the Parliament King Oscar announces negotiations for important foreign commercial treaties. Egypt: The Khedive signs a marriage contract with his favorite slave.

20. Washington: The President issues the annual proclamation in regard to fur seals. The War Department decides to purchase the right to manufacture and use a high explosive known as "emmonsite," the invention of Dr. Emmons of New York. Germany: Repeal of the anti-Jesuit laws.

21. Washington: A decision of the Supreme Court rules that a jury in a criminal case must take the law from the judge. William H. Heard, of Pennsylvania, nominated minister to Liberia. Tennessee: A legislative committee begins to investigate the late election for Governor. California: A bill passes the Legislature prohibiting the manufacture and sale of cigarettes. New York: A strike of the building trades begins. The bill prohibiting the display of foreign flags on public buildings becomes a law.

22. South Dakota: Defeat of the woman's suffrage bill by a small majority. Missouri: Meeting of Populist-leaders at Kansas City. Ohio: Final session of the A. P. A. annual convention at Toledo; a membership of 115,000 claimed in the State. Kansas City: Meeting of the National Reform Press Association. Germany: A resolution in support of the gold standard adopted by the Chambers of Commerce. London: The Bimetallic League favors the proposed international monetary conference. Sir Henry Brougham Loch is recalled from the governorship of Cape Colony, owing to a dissension with Cecil Rhodes, the native Premier. Russia: The Mediterranean naval squadron is ordered to the Pacific Ocean. Africa: A large number of French soldiers killed by natives.

23. Senator Matt W. Ransom, of North Carolina, confirmed as minister to Mexico.

24. Washington: Acquittal of Capt. H. W. Howgate on trial for embezzlement while disbursing officer of the United States Signal Service; the jury was out nearly seventy-two hours. New York: A strike among the electrical workers becomes serious. France: Prohibition of the importation of American cattle. London: An epidemic of influenza prevails; the Prince of Wales, Lord Rosebery, and many other prominent men are victims.

25. In consequence of protests on the part of Great Britain, the President suspends until further notice the operation of the newly adopted rules of the road at sea. New Orleans: Celebration of the annual Mardi Gras festival. England: Introduction of the Welsh disestablishment bill in the House of Commons.

26. Washington: Mary Lowe Dickinson elected President of the National Women's Council. Meeting of the National Dairy Association. New York: Gov. Morton and Mayor Strong appoint several Platt men to office. Ohio: Great destitution among the miners in Hocking valley district. England: Passage of a resolution favoring a monetary conference by the House of Commons. Inquest on the victims of the

Elbe disaster at Lowestoft. Cuba: Revolutionary uprisings are reported in various districts, and martial law is proclaimed.

27. Washington: Resignation of Postmaster-General Bissell. New York: "General" William Booth, commander of the Salvation Army, sails for home. Africa: Sir Hercules Robinson is appointed to the vacant governorship of Cape Colony, and is made High Commissioner for South Africa.

28. The President nominates the Hon. W. L. Wilson, of West Virginia, as Postmaster-General, also Commodore William A. Kirkland to be rear admiral, and Capt. Francis M. Bunce to be commodore. Texas: An express train held up and robbed near Dallas. Virginia: Charles Morgan, the train robber, sentenced to eighteen years' imprisonment. Chicago: The Board of Trade offers to supply destitute farmers in the Northwest with seed grain to be paid for when the crop is sold. St. Louis: More than 35,000 persons vaccinated within two weeks because of a smallpox epidemic. England: It is resolved by the House of Commons to give precedence to Government business. Germany: The Emperor confers upon Francis Joseph of Austria the rank of field-marshal general in the German army.

March 1. Germany: The Reichstag votes a credit for the new naval cruisers. Nova Scotia: Import duties to be reimposed, owing to the decline of revenue receipts; these were abandoned under the reciprocity clauses of the McKinley tariff. Belgium: The episcopate receives a papal brief condemning the Christian socialists. Spain: 7,000 troops ordered to Cuba.

2. Washington: Adjournment of the National Council of Women, resolutions adopted setting forth the principles of the association; session of the Republican National League. Germany: Rejection of the Emperor's request for a credit to build torpedo boats; more than 150 members of the Reichstag are ill with influenza. Hawaii: Commutation of death sentences of the leading conspirators. Italy: Celebration of the seventeenth anniversary of the Pope's coronation and his eighty-fifth birthday.

3. Chicago: Consolidation of the Chicago "Times" and the "Herald" under the name of the "Times-Herald."

4. Washington: Decision of the Supreme Court that such telephone patents as are free abroad are also free in this country.

12. Indiana: Adjournment of the Legislature with a disgraceful riot. Pennsylvania: By a large vote the Legislature prohibits the wearing of any religious garb or insignia by teachers in the public schools. Colorado: Several Italians killed at Walsenburg for murdering an American. Louisiana: A labor and race riot on the levee at New Orleans, six negroes killed and an officer of a British steamship wounded. Minnesota: Nearly every town votes for license at the local elections. Newfoundland sends delegates to confer with the Dominion of Canada with a view to union.

13. New York: Defeat of the Gerry whipping-post bill in the Legislature. In New York city an agreement was reached for the consolidation of several great libraries under the provisions of the Tilden trust. Australia: The conference of colonial premiers at Hobart prepares a bill providing for Australasian federation. Hawaii: The ex-Queen is sentenced to five years' imprisonment and a fine of \$5,000.

14. New York: The Legislature passes a resolution submitting the question of woman's suffrage to the people (80 to 81). Minnesota: A bill passes for the taxation of unused railway land. Connecticut: Repeal of the last of the so-called blue laws. Louisiana: The police and militia are obliged to guard negroes at work on the levees at New Orleans. Holland: The States-General makes a large appropriation to equip the army with new rifles. Japan: The Japanese move upon the island of Formosa.

15. California: The United States Government files a claim for \$15,000,000 against the estate of the late Senator Stanford. Illinois: The Supreme Court de-



cides the eight-hour or "sweat-shop" law unconstitutional. Colombia, South America: A considerable engagement between the insurgents and Government troops at Baranca.

16. England: An extensive strike among bootmakers. Egypt: Escape of Slatin Bey from the Mahdists who have held him captive since the death of Gen. Gordon.

17. Germany: A decision is reached by the Imperial Counsel not to recommend new measures regarding the importation of American cattle. China: The Viceroy sails for Japan with a suite of 130 persons.

18. Washington: The Court of Appeals holds that racing and pool selling are prohibited by statute within the District of Columbia.

19. Nevada: Discovery of a shortage of more than \$80,000 in the United States mint at Carson. Georgia: A party of 200 negro emigrants sails for Liberia from Savannah. New York city: Indictment by the extraordinary grand jury of Police-Inspector McLaughlin, 7 police captains, and 3 detectives. Ohio: Arrest at Dayton of Dr. and Mrs. Hatten on charge of manslaughter through the practice of "Christian-science" theories. England demands reparation from Nicaragua for expelling the British representative at Blue Fields. Ecuador, South America: According to a dispatch from Quito the insurrection has been suppressed.

20. Louisiana: 15 indictments found by the grand jury charging murders during the recent riots on the levee. Cuba: 8,000 fresh Spanish troops on their way to suppress the insurrection. Madagascar: Sentence by the French authorities of John L. Waller, formerly United States consul, to twenty-one years' imprisonment on charge of corresponding with the Hovas.

21. Washington: Exchange of treaty ratifications between Japan and the United States at the State Department. Appointment of William Martin Aiken, of Cincinnati, to be supervising architect of the Treasury. Indian Territory: Appointment of ex-Congressmen Springer, of Illinois, and Kilgore, of Texas, to be United States judges. Chicago: Gov. Altgeld signs the civil-service-reform bill intended to overthrow partisan abuses in that city. Opening of peace negotiations between China and Japan at Shimonoseki.

22. Arizona: Adjournment of the Legislature in disorder leaving the Territorial institutions without funds for their support. Philadelphia: Meeting of the International Christian Workers' Association. Detroit: Annual conference of the Presbyterian Sunday-school Missionary Association. Great Britain: By a vote of 176 to 153 the House of Commons recommends that members shall receive pay for their services. India: A detachment of 46 British troops waylaid and killed in the Hindu-Kush mountains. Germany: Appointment of Prince von Rodolin as German ambassador to St. Petersburg and of the Baron Thielman as German ambassador to the United States. The Japanese fleet attacks Pescadore island, between Formosa and the Chinese mainland, but is repulsed. Canada: The Governor General and members of the Cabinet sign the order re-establishing separate schools in the province of Manitoba.

23. Cleveland: Decision by Judge Ricks that a foreign-born woman becomes an American citizen upon marriage to an American. New York city: 18 arrests of men indicted by the grand jury for violating the election laws. Chicago: Resignation of the receivers of the Whisky Trust, Mr. McNulty being continued by order of the court as sole receiver. San Francisco: Indictment of C. P. Huntington, President of the Southern Pacific Company, by the United States grand jury for violation of the interstate commerce law. Germany: Rejection by the Reichstag of a congratulatory resolution to Prince Bismarck on his birthday. Hungary: Passage by the House of Magnates of the bill providing for the free exercise of religion. France: First meeting of the Bimetallic League.

24. Germany: Great excitement over the affront offered to Bismarck by the Reichstag yesterday. Belgium: The State Department at Washington is notified

that the duties against American food products have been repealed by royal decree. Japan: Li-Hung-Chang, the Chinese peace envoy, is wounded in the face by a pistol shot in the hands of a Japanese fanatic.

25. Japan: Resolutions passed by the Parliament deploring the attempt to assassinate the peace envoy. Germany: The recent affront to Prince Bismarck arouses an outburst of popular enthusiasm in his behalf, and he is overwhelmed with letters and dispatches from all over the world. Washington: The State Department is notified that Russian restrictions upon foreign commercial travelers have been modified.

26. Washington: Appointment by the President of Col. T. H. Stanton to be paymaster general of the army in place of Gen. William Smith, retired; the appointment of Senor Dupuy d'Lome is approved as Spanish minister to the United States; conclusion of the argument in the Debs *habeas corpus* case before the Supreme Court. Venezuela: The Claims Commission renders judgment in favor of the United States for about one third of the amount demanded, namely, \$143,500. Kansas: 12 indictments found by the grand jury against election officers. Germany: The Emperor visits Prince Bismarck and presents him with a sword.

27. England announces an ultimatum in regard to her demands upon Nicaragua.

28. Washington: The Spanish minister notifies the State Department that shipments of arms and ammunition to the Cuban revolutionists have been made from many points in the United States.

29. Great Britain: Adoption by the House of Commons (126 to 102) of a resolution declaring for home rule in England, Scotland, and Wales. Canada: Adjournment of the Manitoba Legislature. China-Japan: An unconditional armistice declared because of the attack on the peace envoy.

30. Ohio: The direct inheritance tax levied by the last Legislature declared unconstitutional by the circuit court. Great Britain: Nomination of William Court Gully to be Speaker of the House of Commons to succeed Sir Arthur Wellesley Peel. Oxford defeats Cambridge in the fifty-seventh annual boat race. Japan: Sentence of the soldier who attempted to assassinate Li-Hung-Chang to penal servitude for life.

April 1. Local elections held in Connecticut, Ohio, and Michigan. Germany: Prince Bismarck celebrates his eightieth birthday. Great Britain: Passage to a second reading in the House of Commons of the Welsh disestablishment bill (304 to 260).

2. Delaware: A deadlock exists in the Legislature over the election of a United Senator. Illinois: The Supreme Court sustains the validity of the Democratic apportionment law of 1893. Iowa: The State Supreme Court affirms the constitutionality of the liquor law. California: Judge Clark, of Los Angeles, decides that a minister who utters a slander in a public prayer is liable to prosecution. Mexico-Guatemala: Final settlement of the boundary dispute on terms satisfactory to both countries.

3. Appointment by the President of a board to investigate and report upon the feasibility of the Nicaragua Canal route. Boston: The Governor of Massachusetts presides at a meeting in Music Hall, where a testimonial is presented to Dr. S. F. Smith, author of the hymn "America." London: The Right Hon. A. J. Balfour speaks in favor of bimetallicism at the meeting of the league.

4. Washington: The new Postmaster-General, Hon. W. L. Wilson, enters upon his official duties. Alabama: Meeting of the South and West Grain Trade Congress at Mobile. Election of Dr. Thomas A. Brown, of the Massachusetts Institute of Technology, to be President of Lehigh University. Canada: Conference of the Newfoundland delegates with representatives of the Dominion Government at Ottawa.

5. New York city: Indictments against former park commissioners handed in by the extraordinary grand jury.



6. Kansas: Acquittal by the State Supreme Court of a man charged with murder on the ground that he was under hypnotic influence; the alleged inspirer of the crime is convicted. Florida: Meeting of the American Institute of Mining Engineers at St. Augustine.

7. Utah: Conclusion of the sixty-fifth annual conference of the Mormon Church at Salt Lake City.

8. Washington: The Supreme Court decides that the income tax is constitutional. The President appoints Henry Herwig to be chief engineer in the navy. Mexico: For the first time in the history of the republic the treasury does not show a deficit.

9. Delaware: Mr. W. T. Watson succeeds J. H. Marvel, deceased, as Governor. Chicago: Installation of George D. Swift as mayor of the city. New Jersey: Republicans generally successful in the Charter elections. Ohio: Extended strike of coat-makers in Cincinnati and vicinity.

10. Brooklyn, N. Y.: A number of rioters arrested during the trolley strike are sent to the penitentiary. Philadelphia: Launch of the American Line steamship *St. Paul*. Great Britain: William Court Gully elected Speaker of the House of Commons by a majority of 11.

11. Massachusetts: Rejection of the Norwegian liquor bill by the General Court. Colorado: Highwaymen rob a Wells, Fargo Express wagon of \$15,000, the express messenger wounded. New York: Escape of five inmates of the State Asylum for Insane Criminals, including the notorious Perry, the train robber, who was feigning insanity.

12. Washington: Issue of supplementary instructions for the collection of the income tax. Tennessee: Adoption by the Senate of a resolution favoring the free coinage of silver.

13. Utah: Adoption of a woman's suffrage clause by the Constitutional Convention.

14. The President writes a letter strongly expressing himself in favor of a sound financial policy.

15. Commissions appointed by the Governors of New York and New Jersey, looking to the protection of the Palisades on the Hudson. New York city: At its annual election the Tammany Society reinstates Richard Croker in full power.

16. Washington: Session of the National Academy of Sciences. New Jersey: Capture of Perry, the escaped train robber. China-Japan: Conclusion of the treaty of peace. Canada: Adjournment of the Ontario Legislature.

17. Philadelphia: Ex-Mayor W. D. Smith recovers a verdict for \$45,000 against Col. McClure, of the "Times" for libel. Washington: The Secretary of the Navy designates the Columbia, New York, San Francisco, and Marblehead to represent the United States at the opening of the North Sea and Baltic Ship Canal. Cincinnati: Compromise of the great coat-makers' strike on an advance of 25 per cent.

18. New York: The State Senate confirms the resolution of the Assembly favoring a popular vote on the woman's suffrage constitutional amendment. Florida: The House of Representatives designates April 26 Confederate Memorial Day and a legal holiday. Pennsylvania: Convention of the Young Women's Christian Association in Pittsburg. Canada: Opening of Parliament at Ottawa. The Pope condemns officially the attendance of Catholics upon Protestant or neutral schools in Manitoba.

19. New York: The Governor signs the bill for free public baths in large cities. St. Louis: Strike of garment workers for clean shops and modern sanitary conveniences. Loudon: Inauguration of a new American society, presided over by Ambassador Bayard. A papal encyclical is addressed to the English people in regard to the union of the Anglican and Roman Catholic Churches.

20. Alabama: Five negroes lynched near Greenville.

21. Illinois Democrats organize an honest-money league. Japan: The Emperor ratifies the treaty of peace.

22. Installment of Mr. Gully as Speaker of the House of Commons. Appointment of the Very Rev. Archibald Farrar, D. D., to be Dean of Canterbury.

23. Three British war ships reach Corinto to enforce the demands against Nicaragua. Germany: Reassembly of the Reichstag. Russia concentrates a large fleet in Japanese waters.

24. Brig.-Gen. Wesley Merritt promoted to be major general, and Cols. Bliss and Coppinger to be brigadier generals in the regular army. St. Louis: The garment workers win their strike against the sweat-box contractors. Washington: Meeting of the American Society of Religious Education. Connecticut: Meeting of the American Oriental Society at New Haven.

25. Meeting of the American Association for the Advance of Physical Education in New York. Virginia: The Supreme Court refuses to admit Mrs. Belya Lockwood to practice.

26. Washington: The German ambassador presents his letters of recall to the President. Massachusetts: A bill passed by the General Court prohibiting the manufacture and sale of cigarettes.

27. North Carolina: Indictment of the agent of the Standard Oil Company at Asheville on the ground that the company is a trust and contrary to the laws of the State. Chicago: Dedication of the Willard fountain, presented by the children of the Temperance Union. Nicaragua: English marines seize the customhouse at Corinto to compel payment of the indemnity demanded.

28. Arrival in London of the Queen Regent of Holland and the young Queen Wilhelmina for a fortnight's visit.

29. The Secretary of the Navy orders war ships to Nicaragua to protect American interests. New York city: The police census shows the population to be 1,849,866.

30. Minnesota: A decision of the Supreme Court grants the right of eminent domain to telephone and electric-light companies. Baltimore: Strike of the Garment-workers' Union against the sweating system.

May 1. New York: The Assembly, by vote of 91 to 25, condemns the Federal administration for its Nicaraguan policy. West Virginia: Strike of 10,000 miners in the Pocahontas coal region. Boston: Annual Congress of the Sons of the American Revolution. Europe: Few May-day riots. Decision of the coroner's jury that the sinking of the steamer *Elbe* was due to carelessness on board the *Craithie*.

2. New York: The State Senate adopts a resolution of sympathy with the Cuban insurgents. England and Nicaragua have reached an agreement, Salvador guaranteeing the payment of the indemnity within two weeks. Italy demands satisfaction from Brazil for losses sustained for Italian subjects. Germany: The customs tariff amendment bill passed.

3. Washington: By order of the Attorney-General, all legal proceedings against members of the American Railway Union charged with rioting at Oakland, Cal., have been dropped. New York: The State Assembly passes a resolution assuring Lord Rosebery of its interest in the cause of home rule. West Virginia: The Federal Court issues an injunction against striking miners for interference with the United States mails. New York city: Convention of naval militia officers, a general association formed.

4. Baltimore: Annual meeting of the American Academy of Medicine. New York city: Dedication of the Washington Memorial Arch. Virginia: Annual meeting of the Geographical Society at Fredericksburg. Ohio: Joint conference of miners and operatives at Columbus; about 24,000 miners on strike at this date.

5. Evacuation of Corinto by the British forces. Formosa: British and German marines land to protect foreigners. Germany: Sixty-one cities protest against the antirevolution bill in the Reichstag. Rome: The Pope issues a letter of sympathy with the Armenian sufferers.

6. Washington: The State Department receives



from Spain an apology for the firing on the Alliança. The Supreme Court begins a rehearing of the income-tax cases. New York city: Theodore Roosevelt, Andrew V. Parker, and Col. Frederick D. Grant assume office as managers of the New York city police force.

7. The President appoints Herman Kretz superintendent of the Philadelphia Mint. Mobile, Ala.: The Nicaragua Canal Board sails for Greytown on the cruiser Montgomery. Texas: The insolvency of the State treasury is announced.

8. Washington: Conclusion of the argument on rehearing of the income-tax case. South Carolina: The United States circuit court permanently enjoins local registration and election laws and the State dispensary laws, declaring them unconstitutional. Wisconsin: Meeting of the Supreme Council of the American Protective Association at Milwaukee. Tennessee: Reinauguration of Peter Turney as Governor. Springfield, Mass.: International convention of the Y. M. C. A. of North America. Philadelphia: The coat-makers win in their strike, and most of them return to work. London: O'Donovan Rossa creates a disturbance in the gallery of the House of Commons, and is expelled. Canada and Newfoundland practically abandon ideas of confederation. Ratification of a treaty of peace between China and Japan.

9. New York: Charles S. Fairchild succeeds William K. Grace as chairman of the State Democracy. Defeat of the Greater New York bill in the Senate at Albany by a vote of 15 to 14. Delaware: Adjournment of the Legislature in some confusion over the election of a United States Senator. Mississippi: By an almost unanimous vote the State Bankers' Association opposes the free coinage of silver.

10. Washington: Retirement of Brig.-Gen. T. L. Casey, Chief of Engineers. Col. W. P. Craighill appointed his successor. New York: The Governor signs the city police magistrates bill. South Carolina: State constables ordered to seize all shipments of liquor imported for other than personal use. London: The House of Commons reimposes a duty of 6d. per gallon on beer with a view to overcome an estimated deficit in the treasury. Chili-Bolivia: A treaty concluded, giving Bolivia a strip of coastwise territory.

11. Washington: Appointment of Henry E. Alvord, formerly President of the Maryland Agricultural College, to be a chief of division in the Department of Agriculture. Germany: By a unanimous vote the Reichstag rejects the antisocialist bill.

12. Mexico: The Senate ratifies the boundary treaty with Guatemala.

13. Admiral Meade, U. S. N., declines to answer the inquiries of the Naval Department as to his criticism of the Administration. Washington: Annual convention of chiefs of police from the principal cities of the United States and of the Southern Baptist societies; meeting of the street railway commissioners. Georgia: Biennial convention of the Order of Railway Conductors at Atlanta. New York: National Convention of the Ancient Order of Hibernians. Europe: A scheme of reform in Armenia submitted to the Porte by some of the powers. Germany: The Emperor accepts the resignation of Freiherr von der Goltz, commander in chief of the navy. His successor is Admiral von Knorr.

15. Utah: Representatives from 17 States and Territories attend a silver convention in the Mormon temple at Salt Lake City. Italy: Catholics are forbidden by the Pope to take part in the parliamentary elections. Spain: The commander of the Spanish gunboat that fired on the Alliança is censured and relieved of command.

16. New York: Adjournment of the State Legislature. New Jersey: Semicentennial of the New Jersey Historical Society at Newark. London: Payment of the indemnity by Nicaragua. Austria: Count Goluchowski appointed Premier in place of Count Kalnoky, resigned. Prussia: The Parliament, by a vote of 72 to 38, urges the Imperial Government to bring about international bimetallicism.

17. The President grants Admiral Meade's request for retirement, but without relieving him from the liability of court-martial. New York city: Cardinal Gibbons sails for Rome. Cambridge: In the Yale-Harvard athletic games Yale scored 65 points to Harvard's 47.

19. The Pennsylvania miners decide to continue their strike. Florida: Three negroes lynched in Lafayette County.

20. Washington: The Supreme Court, reconsidering its former decisions, declares the unconstitutionality of the whole income-tax law. Pittsburg, Pa.: Adoption by the Presbyterian General Assembly of a report favoring the control of seminaries by the Church; the vote stands 432 to 98.

21. Commodore Lester A. Beardslee, U. S. N., becomes rear-admiral in place of Meade, retired. Cleveland, Ohio: Convention of the Association of Iron and Steel Workers of America. Texas: Reunion of the United Confederate Veterans at Houston. Pittsburg: The General Assembly declares against individual communion cups. London: A committee in the House of Commons reports against the right of peers to sit in that body. South America: Confirmation of the boundary treaty between Chili and Bolivia.

22. Chicago: General strike in the brickyards. China-Japan: Diplomatic relations resumed between the two governments. Texas: Grand reunion of Confederate veterans at Houston.

23. Memphis, Tenn.: Opening of the sound money convention of the Southern States. Michigan: Passage of an antitreaty bill by the House of Representatives. Oklahoma: Opening of the Kickapoo reservation; 15,000 settlers enter and establish claims. Pittsburg: The Presbyterian General Assembly discriminates against students of the Union Theological Seminary on the ground of heretical instruction.

24. Washington: John M. Harlo takes oath as the civil-service commissioner. Ballington-Booth and his wife become naturalized citizens of the United States. New Haven, Conn.: Session of the Conference of Charities. Houston, Texas: Gen. J. B. Gordon re-elected commander in chief of the Confederate Veterans. England: Celebration of the Queen's birthday. Among those knighted were Henry Irving, Louis Morris, and Walter Besant.

25. Illinois: Two men taken from the jail at Danville and lynched, because the mob was determined that Gov. Altgeld should never have a chance to pardon them. South America: A French expedition in Guiana is fired upon by Brazilian rangers, and nearly 70 were killed on both sides.

26. New Orleans, La.: Secretary Carlisle hanged in effigy on account of his antisilver speech. Italy: General elections result in the return of Premier Crispi. Scotland: Launch of the yacht Valkyrie III, challenger for the America's cup.

27. Denial by the Supreme Court of a motion for a writ of *habeas corpus* in the case of Debs and his associates. The court also decides that the Geary Chinese exclusion act is constitutional. New York city: Retirement of Chief-of-Police Byrnes.

28. Rhode Island: Inauguration of Charles Warren Lippitt as Governor. Boston: Anniversary meeting of the American Unitarian Association. Saratoga: Meeting of the American Baptist Union in convention. London: Prominent bankers and merchants form a gold defense association.

29. New York: Gov. Morton signs the Raines bill for a blanket ballot. Cleveland, Ohio: National conference in favor of good city governments, also meeting of the National Municipal League. Flushing, Long Island: Bicentennial celebration of the establishment of the New York Yearly Meeting of Friends.

30. Chicago: Dedication of the monument to the Confederate dead in Oakwood Cemetery with an oration from Gen. Wade Hampton, late C. S. A.

31. Pennsylvania: Defeat of the apportionment bills in the Legislature. Chicago: Prof. E. E. Bar-



nard, astronomer of the Lick Observatory, takes charge of the great telescope at the Chicago University.

June 1. Washington: Count de Reventlow, the retiring Danish minister, presents his letter of recall to the President. Ohio: The striking coal miners reach an agreement at Columbus.

2. Chicago: Judge Baker decides against the Attorney-General of Illinois in a suit to annul the charter of the Pullman Company. New York: A law goes into effect closing barber shops on Sundays except in New York city and Saratoga.

3. The Supreme Court decides that the tariff act became operative on Aug. 28, 1894. Rhode Island: Part of the unemployed operatives at Olneyville resume work. Spain: The Captain General of Madrid is mortally wounded by an officer thought to be insane. Washington: The Chilean minister receives a dispatch from his home Government announcing the resumption of gold payments. Syria: A fleet of 17 British war ships reached Beyroot.

4. North Carolina: The Populists have declared in favor of an income tax. New Jersey: The Legislature reconvenes to receive the report of its investigating committee. New York: Annual communication of the Grand Lodge of Freemasons begun at the Masonic Temple. Great Britain rejects the offer of the Pope to mediate in the dispute with Venezuela.

5. Illinois: Free silver Democratic Convention at Springfield. Washington: The District Court of Appeals sustains the pension commissioner in reducing the pension of Judge Long. New York: Conference for promoting international arbitration at Lake Mohonk. Carson City, Nev.: The \$80,000 in gold supposed to have been stolen is found buried in the garden of an employee of the mint. New York: The new American Line steamer St. Louis sails on her first voyage to Southampton. Execution of the assassin of the Captain-General of Madrid.

6. Iowa: Conference of Free-silver Democrats at Des Moines. Washington: The Spanish minister complains of many expeditions in aid of the Cuban insurrection fitting out in the bayous of the lower Mississippi. Missouri: Dedication of the new buildings in the State University at Columbia. Paris: Meeting of the International Miners' Conference. The English, German, Belgian, and French delegates decide in favor of an eight-hour day.

7. President appoints Richard Olney, of Massachusetts, Secretary of State, and Judson Harmon, of Ohio, Attorney-General. The Chinese minister presents a letter to the President from the Emperor of China thanking him for his kindly offices in furthering peace with Japan. Illinois: The Legislature passed a bill taxing inheritances, gifts, and legacies. New York: Gov. Morton signs the bill to prevent naturalization frauds.

8. Pennsylvania: Adjournment of the Legislature. Washington: The Post-Office Department issues a new form for money orders.

9. Rome: A permanent Russian legation established at the Vatican.

10. Washington: Richard Olney sworn in as Secretary of State.

11. Richmond, Va.: Judge Goff's decision in the South Carolinian registration case reversed by the United States Court of Appeals. Chicago: Annual session of the Ancient Order of the United Workmen. Turkey: The British, French, and Russian ambassadors formally demand the disarmament of the dangerous tribes that have recently attacked some of the consulates.

12. Proclamation by the President forbidding American citizens to aid Cuban insurgents. Debs and his colleagues begin to serve their sentences. Archbishop Ireland defends the public schools in a speech at South Bend, Ind. New York city: Twenty-second annual session of the Supreme Lodge of the Knights of Honor.

13. Appointment by the President of Allen Thomas to be United States minister to Venezuela. By or-

der of the President Government printing-office employees are made subject to the civil-service rules. Illinois: The Supreme Court declares the Whisky Trust illegal. New Jersey: The Legislature adjourns after passing several bills over the Governor's veto. Central Africa: A protectorate for Uganda is announced by Great Britain. Completion of the Canadian Sault Ste. Marie Canal (see article on ENGINEERING).

14. Celebration of the anniversary of the adoption of the American flag. Canada: The Parliament by a majority of 4 defeats a measure to increase the duty on spirits, beer, and tobacco.

15. Three revenue cutters detailed by the Navy Department to prevent the importation of yellow fever from Cuba.

16. London: Lady Somerset opens the World's Women's Christian Conference.

17. The President and family leave Washington for their summer residence on Buzzard's Bay. Opening of the Harlem Ship Canal connecting the Hudson river and Long Island Sound (see article on ENGINEERING). Oxford and Cambridge Athletic Club challenge Yale and Harvard to a contest.

18. Omaha: Meeting of the National Council of the Junior Order of American Mechanics. Illinois: Gov. Altgeld calls a special session of the Legislature. Missouri: The Supreme Court declares unconstitutional the law forbidding the discharge of employees for connection with labor organizations. England: Lady Somerset elected President of the British Women's Temperance Association.

19. Commodore Bunce succeeds Admiral Meade as flag officer of the North Atlantic squadron. New York: Ex-Police-Commissioner McLaughlin sentenced to two years and a half in States Prison for extortion. Massachusetts: Annual convention of the American Society of Civil Engineers at Hull. London: Opening of the Convention of the World's Women's Christian Temperance Union.

20. Lexington, Va.: Seventh Annual Congress of the Scotch-Irish Society. Germany: Opening of the Baltic Canal from Brunsbittel to Kiel, powerful squadrons represent the great maritime powers, and royal guests are present from all over Europe. England notifies Russia that she is about to make a naval demonstration in the Dardenelles.

21. Ex-Capt. Howgate, of the United States army, convicted of forgery and falsification of accounts. England: Defeat of the Rosebery ministry in the House of Commons by a vote of 132 to 125. Germany: The Emperor lays the keystone of the Kiel canal and names it the Kaiser Wilhelm Canal, in memory of William I. Constantinople: Detection of a plot against the Sultan among students in the university, 30 arrested.

22. New York city: Convention of American Bacteriologists. Toledo, Ohio: An injunction against Sunday ball playing made permanent by the circuit court. Cuba: Mutiny among Spanish troops, their commander commits suicide.

23. Chicago: Convention of the United Irish Societies, representing 133 organizations. England: Resignation of the Rosebery ministry. Italy: Bribery charges preferred against Premier Crispi by Signor Cavalotti.

24. New York city: Several indictments found for alleged complicity in a conspiracy to burn buildings. Poughkeepsie, N. Y.: Intercollegiate boat race on the Hudson won by Columbia; Cornell and Pennsylvania were the other contestants. Germany: The Emperor visits the United States flagship New York at Kiel, and sends thanks to the President.

25. Illinois: Opening of the special session of the Legislature. Schenectady, N. Y.: Centennial exercises of Union College. England: Lord Salisbury accepts the premiership and announces some of his Cabinet. Italy: Defeat of a motion aimed against Premier Crispi in the Chamber of Deputies (383 to 151).

26. First payment made by the Belmont-Morgan

syndicate on the new bond issue; the gold reserve raised to \$107,000,000. Providence, R. I.: Strike in the Atlantic Mills settled. Boston: Meeting of the International Supreme Lodge of Good Templars, membership more than 500,000. Germany: The Emperor and his admirals dine on board the flagship New York as guests of Admiral Kirkland. London: Fifth session of the International Railway Congress.

27. Ohio: The State Supreme Court decides that the direct inheritance tax law is unconstitutional. Pennsylvania: The Governor signs the religious garb bill. Chattanooga, Tenn.: Opening of the Second National Convention Epworth League. Albany, N. Y.: Session of the University Convocation. Newfoundland: Appointment of Sir Graham Bower to succeed Gov. O'Brien as chief executive.

28. Detroit: American Society of Mechanical Engineers in convention. New London, Conn.: Yale wins the annual boat race against Harvard. Niagara Falls: Session of the American Institute of Electrical Engineers. New Orleans: Officers of labor associations indicted for interfering with interstate commerce during the late strike.

29. San Francisco: Judge Ross of the district court decides in favor of the Leland Stanford estate in the suit brought by the Government. Chicago: Indictment of 13 men charged with defrauding the city by falsifying pay rolls. Chautauqua: Opening of the twenty-second Annual Assembly. Westminster, England: Foundation stone of a Roman Catholic cathedral laid by Cardinal Vaughan.

30. The annual summer religious services open at Ocean Grove and Asbury Park, N. J.

July 1. Detroit: Organization of the International Protective Association, intended to unite interests of the Canadian and American Protective Associations. Bristol, R. I.: Launch of the yacht Defender.

2. Washington: Sentence of ex-Capt. Howgate to eight years in the penitentiary (he was subsequently admitted to bail pending decision on appeal).

3. Washington: Appointment, as chief of the Weather Bureau, of Willis L. Moore to succeed Prof. Mark Harrington, who has accepted the presidency of the University of Washington at Seattle. The State Department is notified officially that China is to pay Japan 288,000,000 in Mexican silver dollars as indemnity. Madagascar: Sharp engagement between the French troops and natives, the French victorious.

4. East Boston, Mass.: A "Little-Red-Schoolhouse" parade in which the A. P. A. and Orange Lodges and kindred organizations take part is attacked by a Roman Catholic mob; 1 man killed, several hurt. New York city: Escape of 3 post-office robbers from Ludlow Street jail. Dayton, Tenn.: Several Seventh-Day Adventists fined for working on Sunday; they are sent to prison in default of payment.

5. Washington: Arrival of the new Portuguese minister, Senhor d'Seguiria Thadieu. Denver, Col.: Convention of the National Educational Association. Italy: Duel between Signor Galli, Under Secretary of the Interior, and Deputy Marescalchi. Newfoundland: Startling legislative scandals discovered at St. John's.

6. Baltimore: Successful test of an electric locomotive in the Belt Line tunnel. Chicago: Wages of workers in the Pullman shop advanced 10 per cent. India: Riot between Hindus and Mohammedans, 3 killed and 200 wounded. Russia guarantees a Chinese gold loan of £16,000,000. Cambridge, England, University accepts Yale's challenge to an athletic contest.

7. Birth of a daughter to the President and Mrs. Cleveland at Gray Gables, Mass. Chicago: For the first time in the history of the city all barber shops are closed (Sunday).

8. Toledo, Ohio: Annual convention of the glass workers of America. England: The Queen signs a proclamation dissolving Parliament. Gen. Roberts declines to succeed the Duke of Cambridge as commander in chief of the British army.

9. Connecticut: Both Houses of the General Assembly pass a bill making Oct. 15 a legal holiday, to

be known as Lincoln Day. The New England Railroad sold under foreclosure for \$5,000,000. Russia: Alleged discovery of an extensive conspiracy against the Czar.

10. Saratoga: Meeting of the New York State Bankers' Association. Boston: Annual convention of the Christian Endeavor Society, about 50,000 members present. Canada: Crisis concerning the free-school system in Manitoba. England: Defeat of the Cornell oarsmen at Henley by Trinity Hall. Cuba: Election of Thomas Estrada Palma to be President of the Republic of Cuba.

11. St. John's, Newfoundland: Sailing of the steamer Kite with the Peary relief expedition bound for Greenland. Washington: Arrest of Morino, once Prime Minister of Hawaii, charged with criminal libel of the Italian ambassador.

12. England: General parliamentary elections begin. (Returns 338 Conservatives, 177 Liberals, 73 Unionists, 70 McCarthyites, 12 Parnellites.) Paris: Two duels fought between members of the Chamber of Deputies. Formosa: Considerable engagement between the Japanese and Chinese; the latter are defeated.

14. Paris: Celebration of the one hundred and sixth anniversary of the fall of the Bastille.

15. The Irish National Federation send \$5,000 to Ireland as a contribution to the election fund of the Parliamentary party. Michigan: 5,000 miners vote to go on strike. Bulgaria: Ex-Premier Stambuloff shot and stabbed in the streets of Sofia.

16. Michigan: General strike among the iron miners, who demand \$2 a day.

18. Toronto, Canada: Opening of the Pan-American Congress of Religion and Education, 5,000 delegates present.

19. The President extends the civil-service rules to include all employees of the pension agencies. Grand Master Workman Sovereign of the Knights of Labor announces a boycott of national bank notes beginning September 1. Turkey: Turks and Macedonians fight on the frontier; victory claimed by the Turks. Canada: By a vote of 13 to 6 the Toronto School Board sustains the right of teachers to wear bloomers.

22. Canada: Adjournment of the Dominion Parliament after postponing action on the school question in Manitoba.

23. Secretary Hoke Smith opens the sound-money campaign by a speech at Hayneville, Ga. The civil-service rules are extended to include employees of the Geological Survey, 125 in number.

24. United States troops ordered to the scene of Indian disturbances in Wyoming. British occupation announced of the island of Trinidad against the protest of Brazil.

28. New York city: General strike ordered of the Brotherhood of Tailors, 15,000 men stop work.

29. Boston: A considerable number of colored women assemble and form a national league.

30. Declaration by the Supreme Court of Oklahoma that all divorces previously granted in the Territory by probate judges are illegal. Vienna: It is announced that Bulgaria will accept the Greek Church to secure Russian protection. Lisbon: Riots in consequence of rumors that priests have been engaged in child stealing.

31. Chicago: Indictment by the grand jury of six election judges for fraud at recent elections.

August 2. Ohio: A Populist convention nominates "General" Coxey for Governor. Illinois: The Legislature adjourns its special session, passing only one of the measures desired by Gov. Altgeld. Wyoming: Gen. Coppinger reports that the trouble with the Bannock Indians is at an end. New York: United States cruiser Columbia arrives from Southampton, having made the run in six days, twenty-three hours, and forty-nine minutes, the longest and fastest run ever recorded for a war ship.

3. London: Close of the session of the Geographical Congress. Belgium: Sectarian education made com-



pulsory by the passage of a new school bill. Germany: Formation of a new political party demanding federal rights for Alsace-Lorraine.

4. Annual conference of Christian workers at Northfield, Mass. China: Mobs destroy the mission station at Kucheng, killing 10 British missionaries and wounding 2 Americans.

5. Chinese troops sent to the scene of the massacre at Kucheng and the Western powers are promised prompt reparation.

6. South Carolina: Judge Goff dismisses the case questioning the validity of the registration laws. Ohio: Annual encampment of Union veterans and the Women's Veteran Relief Union at Lima. Illinois: Riotous Italian miners in Spring Valley forcibly drive out all negroes in that region. China: Further outrages are reported in the burning of American missions. Germany: Discontented laborers create a riot at Argenau, 5 killed and 6 wounded by the police. Ireland: The Congress of Deaf and Dumb Associations opens at Dublin.

7. Illinois: It is believed that the race riot in Spring Valley is at an end. New York: Twenty-fifth annual convention of the Catholic Total Abstinence Union.

8. China: Further rumors of outrages directed against foreigners. Germany: Celebrations of anniversaries of victories over the French in 1870 are the rule of the day.

9. New York: Adjournment of the Catholic Total Abstinence Union with resolutions calling upon their brethren to keep out of the liquor business. Illinois: Negro miners return to work at Spring Valley under guard.

10. New York: End of the tailors' strike. Germany: An admiralty court sitting at Bremerhaven lays the responsibility of the Elbe disaster upon the British steamer.

12. England: Reopening of Parliament, Sir William Gully re-elected Speaker of the House.

13. England: The Irish Parliamentary party unanimously re-elects Justin McCarthy as chairman. Turkey: A large party of Bulgarians attack a village near the border, burn houses and kill many of the inhabitants.

15. Washington: Walter H. Davney, solicitor of the State Department, is elected Professor of Common and Statute Law at the University of Virginia. England: Reading of the Queen's speech in Parliament; an anti-Parnellite disturbance in the House of Commons.

16. Arrest of 23 Spring Valley rioters. Pittsburg, Pa.: Thirtieth annual reunion of the Brotherhood of Locomotive Engineers. Italy: Anarchists attempt to blow up the French consulate at Ancona. Belgium: Final sessions of the Arbitration Congress at Brussels.

17. Spain: Advantage has been taken by the disaffected to inaugurate revolutionary schemes during the absence of troops in Cuba.

18. North Dakota is overrun by an army of tramps who are numerous enough to terrify the inhabitants. New York: Arrival of the British yacht Valkyrie III. End of the jacket-makers' strike; the strikers win. Paris: 30,000 devotees start on the annual pilgrimage to Lourdes.

19. England: It is officially announced that the Duke of Cambridge retires and Field-marshal Lord Wolseley succeeds him as commander in chief of the British army.

20. General election of delegates to the South Carolina Constitutional Convention. Trial trip of the American liner St. Louis in the English Channel; she makes 22½ knots an hour.

21. The President extends the civil-service law to include printers and pressmen in the Executive Department. It is found in the Library of Congress that there is a shortage of about \$35,000, due probably to a lack of sufficient clerical help. Nebraska: A Union Pacific express train held up by robbers near Gothenburg. Scotland: 20,000 jute workers on strike at Dundee. Newfoundland: Signs of renewed trouble

between French and English in regard to fishing rights. Hawaii: It is announced that the Government has ratified a contract for a telegraph cable to San Francisco.

22. New York: Incorporation of the American Spirits Manufacturing Company, to succeed the late Whisky Trust.

23. New York: Cardinal Gibbons returns from his trip to Rome.

24. Evacuation of Port Arthur by the Japanese, the fortifications having been dismantled.

25. Reopening of trouble between the Bannock Indians and cattlemen in Diamond valley. Colorado: Bull fights have been introduced at Cripple Creek, and appear to be very popular. England: A train on the West Coast Railway breaks the record for fast time by running 540 miles in 512 minutes.

26. Niagara Falls: Power sent out for commercial use for the first time from the dynamos of the Cataract Construction Company. Madagascar: Advance of the French forces toward the interior with much suffering from sickness.

27. New York: The Liquor Dealers' Association approve the resolution to close saloons on Sundays. Boston: National Conclave of Knights Templars opens. Detroit: Meeting of the American Bar Association. Michigan: The United States Government turns over the old military reservation on Mackinac Island to the State as a public park.

29. Nebraska: Populist convention at Lincoln, 700 delegates present. Springfield, Mass.: Annual meeting of the Association for the Advancement of Science.

30. New York: 322 saloon keepers plead guilty to violation of the excise law and are fined \$25 each. Selection of the yacht Defender to meet Valkyrie III in the cup races. China: Li-Hung-Chang has been reinstated Imperial Chancellor.

31. Utah: The Supreme Court decides that only men are entitled to vote under the new State Constitution.

September 1. Germany: General celebration of the twenty-fifth anniversary of the fall of Sedan. Russia makes a present of 10,000 modern rifles and ammunition to Montenegro; England objects. Munich: The Catholic Congress adopts resolutions favoring temperance and a stricter observance of Sunday.

2. Labor Day: Parades, picnics, and speech making in all the large cities. Saratoga: Meeting of the American Social Science Association.

3. Saratoga: Meeting of the New York State Prohibition Convention. New York: The whole police force is warned against contributing to any fund raised to further legislation. Philadelphia: Annual Convention of the National Association of Letter Carriers. Panama: Laborers engaged to resume work on the canal.

4. Naval court-martial of Capt. George W. Sumner for careless docking of the Columbia in England. New York: The Oxford-Cambridge Cricket Team defeats the New Yorkers at Stapleton. Washington: Convention of Agricultural Chemists. Chicago: 11,000 children turned away from the public schools for lack of room. England: The British Trades Union Congress passes resolutions favoring the abolition of the House of Lords. Parliament adjourns till Nov. 15.

6. China: Arrest of 130 of the Kucheng rioters. An investigation into their conduct will be conducted by United States officials. Russia: Arrest of 900 nihilists at St. Petersburg and Moscow. Ecuador, South America: It is officially announced that the revolutionists have victoriously entered Quito, the capital.

7-13. International yacht races off Sandy Hook (see YACHTING).

9. Landing of 15,000 Spanish troops in Cuba. 10. South Carolina: Opening of the Constitutional Convention. Louisville: Annual meeting of the Grand Army of the Republic.

12. South Carolina: As submitted the new Constitution excludes negroes from holding office.

13. Brooklyn: Capt. Sumner of the Columbia found guilty by court-martial, suspended and reprimanded.

14. Washington: Payment of the long-outstanding Mora indemnity by Spain to acting Secretary Adee at the department. Germany: Opening of the first electric street railway at Berlin.

15. Iowa: Conference of Latter-Day Saints at Council Bluffs, 3,000 members present. Italy: Twenty-fifth anniversary of the occupation of Rome by Italian troops.

16. New Mexico: Opening of the Irrigation Congress at Albuquerque. Pennsylvania: The university team wins the intercollegiate cricket match against Oxford and Cambridge by 100 runs.

17. Minneapolis: Annual Convention of the Association of Labor Statisticians. The United States battle ship Maine placed in commission at the Brooklyn Navy Yard. Cuba: According to semiofficial Spanish authority the rebellion is now far more formidable than it was in the spring.

18. Opening of the Atlanta Exposition. Dedication of State monuments on the battlefield of Chickamauga, Tenn. China: Seven leaders of the recent riots at Kucheng decapitated.

19. Cuba: A court-martial at Havana condemns the captain of the American steamer Mascot and some of his crew to imprisonment for landing cartridges.

20. Charles D. Rose, of London, challenges for the America's cup. Great Britain sends a squadron of war ships up the Yangtse-Kiang river to protect Europeans. Italy: Unveiling of a monument to Garibaldi at Rome; opening of a Methodist Episcopal church at Rome.

21. Atlanta, Ga.: Gathering of prominent ex-Union and ex-Confederate officers, to commemorate "Blue and Gray Day" at the exposition. New York: International club games, the Americans defeat the English in all the 11 contests, breaking several world's records. St. John's, Newfoundland: Return of the Peary relief expedition with Peary and his companions on board.

22. Madagascar: A notable French victory reported over the Hovas.

23. By order of the President the civil-service laws are extended to include all consular officers whose compensation does not exceed \$2,500 a year. Philadelphia: Defeat of the local cricket club by the Oxford and Cambridge eleven.

24-28. Four races sailed between "Spruce IV" (English) and Ethelwynne (American), small yachts. Ethelwynne the victor.

24. New York: State Democratic Convention. Chicago: Delegates of the Irish National Societies meet and advocate the use of force to free Ireland. St. Louis: Annual Convention of the Catholic Young Men's Union. Newfoundland: Sir Hubert Murray appointed Governor of the province.

25. New York: Parade of the societies favoring more liberal Sunday laws. A train of the New York Central Railroad makes a new record by running from Albany to Syracuse, 147  $\frac{5}{8}$  miles, at 67 miles per hour.

26. Minneapolis: Meeting of the American Humane Association; resolutions passed condemning unrestricted vivisection. Louisville, Ky.: General Convention of the Brotherhood of St. Andrew. England: The Duke of Cambridge makes a speech in regard to his own record as commander in chief of the British army.

27. Boston police notify Jews to close their business establishments on Sunday; the order will be contested in court. Germany: Quarantine ordered for all foreign live stock after Oct. 1. British steamer Alene fired upon by a Spanish gunboat off Cape Maysi, Cuba. Rear-Admiral Kirkland, flag officer of the Mediterranean squadron, reprimanded by the Secretary of War for a private congratulatory letter to President Faure of the French republic. Major George A. Arnes, U. S. A., retired, addresses an insubordinate letter to Maj.-Gen. Schofield; he is arrested and placed in confinement.

28. Gen. Nelson A. Miles becomes commander in chief of the army of the United States in place of Gen. Schofield, retired. Atlanta: The attendance at the fair was 30,000, the largest yet recorded. New York: In the yacht race for half-raters Ethelwynne wins, defeating the English yacht Spruce II.

29. St. Louis: Four hundred cases of diphtheria are reported by the health authorities.

30. International cricket match at Philadelphia, the "Gentlemen of Philadelphia" defeat the Oxford and Cambridge eleven. China: At the demand of England the Viceroy of Szechuen is degraded for acts offensive to England. Hungary: The Diet adopts bills recognizing the freedom of religious worship. Madagascar: Capture of the capital of the island by France after an arduous campaign costing many lives from sickness. Russia: Several thousand deaths reported by cholera during the month.

October 1. Kentucky: The convention of the Methodist Episcopal Church votes to admit women as delegates to the General Conference. France: A contract is signed to lay a telegraph cable from Brest to New York. Corea: The Queen murdered in her palace at Seoul.

2. Nebraska: The State Republican Convention opposes monometallism and demands an honest dollar. Minneapolis: The Protestant Episcopal Church of America begins its thirtieth annual convention. Washington: First Eucharist Congregation of the Catholic Church in America. Albany: Sixth annual convention of the Societies for the Prevention of Cruelty. Philadelphia: Launch of the United States cruiser Brooklyn from Cramp's shipyard. Italy: Twenty-fifth anniversary of the plebiscite; a number of pardons are granted in honor of the occasion.

3. Newport: Charles B. McDonald wins the national golf championship.

4. Trial trip of American liner St. Louis; she makes 20  $\frac{1}{2}$  knots. Salt Lake City: Sixty-fifth semiannual conference of the Mormon Church. England: Prorogation of Parliament till Dec. 23.

5. New York: Yale defeats Cambridge by winning 8 out of 11 athletic contests.

6. A note of remonstrance addressed to Turkey for her action in Armenia by the western European powers.

7. Washington: Decision reached by the district court favorable to the Government in the famous Potomac Flats case, involving several million dollars. Chicago: Electric car held up in the suburbs by masked men; all the passengers robbed.

8. Indiana: Defeat of the Republicans in the municipal elections, probably due to rigid enforcement of the excise law. Atlanta: Meeting of the American Institution of Mining Engineers, also of the Southern Irrigation Congress; the Liberty Bell is received at the exposition grounds with great ceremony.

9. Syracuse, N. Y.: Triennial convention of the Congregational Church. Easton, Pa.: Convention of the Evangelical Lutheran Church.

10. Washington: Major Armes released from arrest and Gen. Schofield censured by Judge Bradley of the district court.

11. By request of Minister Terrill the United States cruiser Marblehead is ordered to the Gulf of Alexandria to protect American interests.

12. Atlanta: The National Congress of Farmers adopt resolutions favoring reciprocity with the South and Central American states; H. F. Clayton, of Indiana, is president of the congress. California: In the Court of Appeals a decision is rendered favorable to Mrs. Leland Stanford in the suit brought by the Government against her husband's estate. Korea: Marines land from the Yorktown to protect the American legation.

13. Turkey: Further cases of cruelty and bloodshed are reported in Armenia and other of the provinces.

14. Washington: Meeting of the Supreme Court. Baltimore: Meeting of the American Purity Alliance.



15. London: Publication by Lord Sackville-West, once minister to the United States, of a pamphlet reflecting upon Mr. Bayard, now United States minister to the court of St. James. Brooklyn: Eighty-sixth annual meeting of the American Board of Commissioners to Foreign Missions. Atlanta: Twenty-first session of the American Bankers' Association.

16. St. Louis: Meeting of the American Institute of Architects. Washington: Annual convention of the Military Society of the Loyal Legion, Gen. John Gibbon elected commander in chief. Turkey accepts proposed scheme of reform, but the massacres continue. Milwaukee, Wis., celebrated her fiftieth birthday.

17. Washington: A national convention of colored men denounces Cleveland's administration, declares allegiance to the Republican party, and favors McKinley for President. Minneapolis: The Episcopal House of Deputies rejects a report looking toward the unity of the different churches.

18. Trial trip of the United States battle ship *Indiana*; she makes 15½ knots, winning a handsome premium for her builders. Baltimore: Twenty-second convention of the National Women's Christian Temperance Union.

19. Newport News, Va.: Launch of United States gunboats *Nashville* and *Wilmington*. England sends an ultimatum to Venezuela demanding reparation for arrest of British officials.

21. Rear-Admiral Kirkland relieved from the command of the Mediterranean squadron; he is succeeded by Commodore Selfridge. Washington: Biennial session of the Supreme Council of the World Thirty-third Degree Masons.

22. Arrival of the President and party at Atlanta to celebrate what has been designated as "President's Day." Minneapolis: Adjournment of the Episcopal General Convention. Baltimore: Re-election of Miss Frances E. Willard as President of the Women's Christian Temperance Union. Meriden, Conn.: General conference of the Universalist Church of the United States. Vicksburg, Miss.: Meeting of the Deep Water-ways Convention. Great Britain sends to Venezuela an ultimatum regarding the arrest of 2 British officials. Austria: Opening of the autumn session of the Reichstag.

23. Secretary Carlisle orders the stoppage of silver coinage after November 1. England: C. D. Rose withdraws his challenge for the America's cup.

25. Atlanta: Meeting of the Manufacturers' Association, 300 delegates present from New England, 200 from the Southern States. A train on the Lake Shore Railroad runs from Chicago to Buffalo, 510 miles, at an average of 65½ miles per hour, excluding stops.

26. Cleveland, Ohio: Annual convention of collegiate alumnae. New York: National Congress of Freethinkers, S. P. Putnam, of Chicago, elected president. Armenia: Continued massacres of Christians by Turks are reported, and no efficient measures taken for their protection.

27. Arrival at Washington of Sir Charles Tupper and the Hon. Mackenzie Bowell, of Canada, to take part in the Bering Sea negotiations.

28. The postal deficiency for the fiscal year officially stated at \$2,807,044. Atlanta: The National Congress of Women discusses suffrage. Paris: Resignation of the French Cabinet, the House of Deputies having passed a vote of censure.

29. South Carolina: The Constitutional Convention decides against woman's suffrage by 121 to 26. Washington: The Commissioner of Pensions reports 295 convictions for frauds during the year. Cuba: Alleged landing of a filibustering expedition from Canada.

30. New York Bay: The fort at Sandy Hook is formally named Fort Hancock by the Secretary of War. Texas: Negro lynched at Tyler. France annexes two of the Society islands. Scotland: End of the shipbuilders' strike at Glasgow and Belfast; wages advanced 5 per cent.

31. Washington: Grand jury of the District of

Columbia declares the Government printing offices in an unsafe condition. The Bank of England pays the first installment of the Chinese indemnity to Japan, £8,000,000 sterling, the money remaining in bank, probably for the purchase of naval and military stores in England.

November 2. Trial trip of the United States war ship *Katahdin*. She fails to make the required speed. A board of officers recommend her acceptance at a reduced cost. Chicago: Mr. J. D. Rockefeller gives to Chicago University \$1,000,000 unconditionally and \$2,000,000 conditioned upon receipt of a like sum from other sources. Francis M. Hatch appointed minister to the United States from Hawaii.

4. Alaska: Canadian police fortifying strategic points along the border. Promotion of Commodore Selfridge, U. S. N., to be rear admiral.

5. Pittsburg, Pa.: Dedication of Carnegie Music Hall, Library, and Art Galleries; a further endowment of \$1,000,000 promised.

8. Washington: Civil-service rule extended to include many post offices and their employees.

17. China: Retrocession of the Liaotung peninsula, the Japanese receiving 30,000,000 taels.

18. Sentence of members of the American Railway Union connected with the strike of 1894 by the Supreme Court. This is in confirmation of the sentence of the California Court, and they must serve eighteen months in prison.

20. Departure of the United States steamship *Minneapolis* for Turkish waters.

28. Thanksgiving Day: 100,000 persons present at the Atlanta Exposition.

29. Rome: The Pope creates Monsignor Satolli a cardinal.

30. During the whole month murders of Armenian Christians continued without efficient effort at restraint on the part of the Sultan. The fleets of Europe remain at anchor near the Dardanelles awaiting orders for action. Several thousand Armenian Christians have been massacred.

December 2. Meeting of the Fifty-fourth Congress.

3. Germany: Opening of the Reichstag.

4. Adjournment of the South Carolina Constitutional Convention, its work having been completed.

10. Turkey: The Sultan grants permission for extra guard ships of the European powers to enter the Bosphorus.

12. Switzerland: Adrian la Chenal elected President of the republic. Great Britain: Parliament prorogued until February.

14. Election of Samuel Gompers President of the American Federation of Labor.

17. Washington: A message to Congress from the President regarding the boundary dispute between Great Britain and Venezuela causes instant apprehension of war and unsettled financial markets all over the world. Philadelphia: General strike of the employees of the street railway lines with riotous proceedings and many arrests.

20. Philadelphia: Street-car strike declared off. Ninety indictments have been found against rioters.

21. Celebration at Plymouth, Mass., of the two hundred and seventy-fifth anniversary of the landing of the Pilgrims. An oration delivered by Senator Hoar.

**EXPOSITION, COTTON-STATES AND INTERNATIONAL.** This great fair, held in Atlanta, Ga., during the closing months of 1895, in importance ranks third among those held in the United States; and in some of its features, as in the display of electrical apparatus and inventions, it even surpassed the Centennial. It had its origin in the fact that the South, with its wonderful agricultural, mineral, and manufacturing resources, was not adequately represented at Chicago in 1893, the legislatures of the Southern States being prohibited by their several constitutions from making appropriations to

that end. It had also the further object of fostering the trade relations already existing between the Southern States and the Latin-American republics and promoting commercial intercourse with Europe.

**Finance and Administration.**—This Exposition was inaugurated by private enterprise, the originator of the idea being Col. W. A. Hemphill, business manager of the Atlanta "Constitution." The citizens of Atlanta subscribed \$225,000, the City Council appropriated \$75,000, and the county (Fulton) gave convict labor to the amount of \$50,000. A committee (which contained three negro members, Prof. Booker T. Washington, Bishop W. J. Gaines, and Bishop A. Grant) visited Washington to request an appropriation of \$200,000 from Congress for a Government building and exhibit, which was passed on June 30, 1894. The Legislature of Georgia voted \$17,500 for an exhibit of the agricultural and mineral resources of the State; but the first State to take official action of the kind was Louisiana. In addition to the \$350,000 raised, the revenues calculated upon were: Issue of bonds based on a mortgage upon two thirds of the gate receipts, \$300,000; returns from sale of 100,000 square feet of floor space at \$1 a square foot, \$100,000; concessions, \$200,000; and gate receipts, estimated at \$1,500,000. By Nov. 1, 25 per cent. of the face value of the bonds was reimbursed to the bondholders. On Nov. 4 Samuel M. Inman, one of the foremost promoters of the enterprise, headed a subscription list with \$50,000 (half of the amount required) to pay off the floating debt.

Invitations to participate in the Exposition were sent to foreign countries through the State Department of the United States, and commissioners were appointed to Mexico, Central and South America, and a commissioner general to Europe, with headquarters in London, under whose direction special commissioners were sent to Great Britain, France, Germany, Italy, Austria-Hungary, Belgium, and Russia. The regulations issued by the Treasury Department governing the free importation of articles for exhibition at the World's Columbian Exposition at Chicago, and all other regulations governing the customs business at that Exposition, were applied to this Exposition, so far as practicable, the grounds and buildings constituting a bonded warehouse and the leading transportation lines being bonded from the principal ports to Atlanta. The Pacific Mail Steamship Company agreed to transport free of charge all exhibits from points in Central and South America reached by its lines. Fourteen States of the Union and the District of Columbia participated through their legislatures or principal commercial bodies, 7 having buildings of their own. Fourteen foreign countries were represented, those of Europe unofficially. The total cost of the Exposition was placed at \$2,000,000, and it is a notable fact that in every instance the cost of constructing the buildings came within the estimate given.

**Location.**—The site was Piedmont Park, 2 miles from the center of the city, an inclosure of 189 acres, traversed by the rifle pits over which Sherman threw the first shell into Atlanta thirty-one years ago. The grounds were not level, as were those of Chicago and Philadelphia,

but hills formed a natural cup in which an artificial lake, named "Clara Meer," was constructed, which covered 13 acres, while the buildings crowned the surrounding elevations. Nearly all had water frontage. Gondolas and electric launches plied on the lake, and in it rose an electric fountain, designed by Luther Steiringer. The landscape effects were especially fine. In front of the lake stretched a plaza reached by broad terraces and traversed by wide gravel walks. A happy effect was produced by the paving of the avenues with crushed blue limestone, and further ornamentation consisted of fountains, statuary mounted on high pillars and balustrades, and electric lights in the evening. The architectural effect of the buildings was secured by lines rather than by ornamentation, and the materials used were simply lumber, glass, and shingles. The color scheme, which was very pleasing, was confined to a Puritan gray body for the main buildings, with white trimmings and moss-green roofs. The Fine Arts Building was white. The leading idea was Romanesque. Much bas-relief work was done in exterior decoration, and on the buildings appeared the seals of the 11 cotton States. In the interior decoration were employed cotton, corn, various cereals and grasses, and Spanish moss. The superintendent of construction was Grant Wilkins, of Atlanta, and the supervising architect was Bradford L. Gilbert, of New York, who designed 10 of the 13 larger buildings. The grounds were reached by several lines of electric cars, and also by a steam railway. The total amount expended on the grounds was \$300,000.

**Inauguration.**—The formal opening of the Exposition took place Sept. 18. The procession that entered the grounds at one o'clock was led by Col. W. L. Kellogg, of the United States army, and in line were the Fifth Regiment, United States army, the Washington Artillery, of New Orleans, commanded by Col. John B. Richardson, the Fifth Regiment of Georgia, and various visiting State troops, including the Second Battalion of colored infantry and the colored Guards from Macon. In all there were 25 companies, with 5 bands. On reaching the Auditorium building, where the ceremonies were held, Gilmore's band rendered the "Salute to Atlanta," composed for the occasion by its leader, Victor Herbert; prayer was offered by Bishop Cleveland K. Nelson; an ode written by Frank L. Stanton was read by Col. Albert Howell; the president of the Exposition, Charles A. Collier, delivered the opening address, and was followed by Mrs. John Thompson, President of the Board of Woman Managers, in behalf of the Woman's Department. Booker T. Washington, principal of the Tuskegee Normal Institute, then spoke for the Negro Department. Mayor King spoke for the city, and at a late hour the electric button that set in motion the engine in Machinery Hall was pressed by President Cleveland in his cottage at Gray Gables, Mass.

**The Administration Building.**—This included the main entrance, from Fourteenth Street. It was a composite in architecture, being a reproduction of portions of Blarney Castle, the Tower of Loudon, Warwick Castle, the Rheinstein in Germany, and St. Michael's on the coast of Brittany. An iron-spiked portecullis





GENERAL VIEW OF THE EXPOSITION.



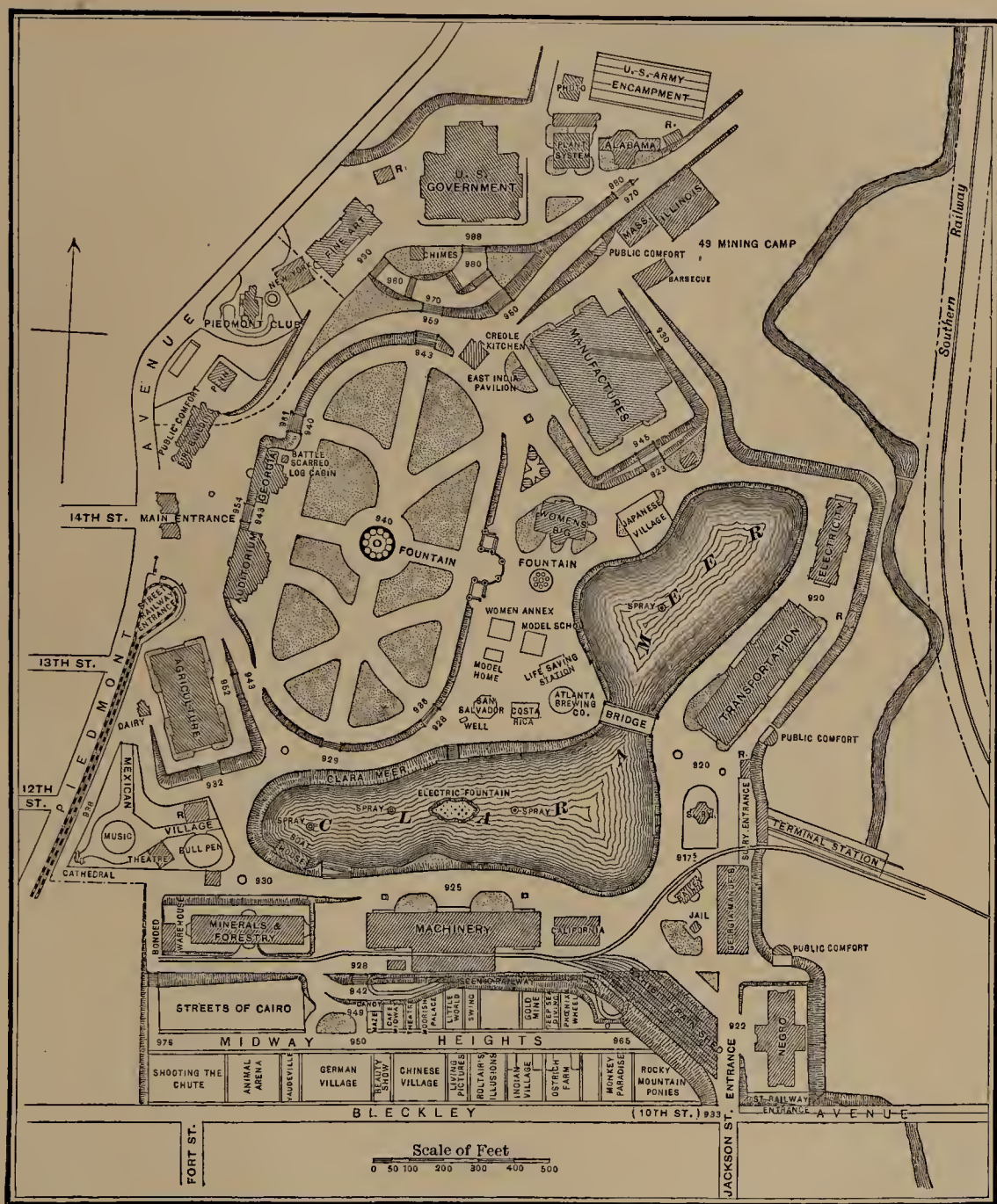


MANUFACTURES BUILDING.



ADMINISTRATION BUILDING.





was over the entrance archway, 30 feet wide, and the windows and loopholes, deeply imbedded, represented rough-hewn stone and the primitive construction of mediæval days. Old-fashioned leaded glass was used for all the windows, and all the details were in harmony with the antique design. The entire front of the building, including the gateways, was 250 feet. Immediately upon its right, at an elevation of 952 feet, stood

**The Auditorium.**—This was 200 feet long, 135 feet deep, and 4 stories high, with mezzanine stories, the dome surmounted by a statue of Music. It had a seating capacity of over 2,000, and a view of the stage was commanded from

every part of the hall, and from *cafés*, also, which opened into the main hall. Beneath were the police headquarters of the Exposition.

**The Agricultural Building** was south of the Fourteenth Street entrance, on a prominent elevation, and was reached by remarkably broad steps. It was 304 feet long and 150 feet wide, with a central dome 107 feet high, and covered 40,000 square feet. The interior was handsomely finished in native Georgia pine. Every section of the South made an elaborate agricultural display, that of Arkansas being one of the most complete and varied, and occupying nearly one fourth of the entire floor space of the building. It was in charge of W. G. Vincenheller, State



Commissioner of Agriculture, Mines, and Manufactures, assisted by J. C. Colquitt, Speaker of the Arkansas Legislature. The exhibit of Louisiana occupied the northwestern end of the building, and was in charge of Prof. W. C. Stubbs, head of the experimental station system of the State. While one of the last that entered the list, this exhibit was one of the most complete. North Carolina's exhibit of tobacco was made in a room finished in tobacco of various colors. In the rear of the building was the exhibit of live stock.

**The Minerals and Forestry Building** was the most unique and original in point of design of all the buildings. It was constructed entirely of woods of the South in their natural condition, with the bark undisturbed. The sides and ends of the building were covered with various kinds of bark, and the entrances were elaborately ornamented with twigs and small branches, festooned with moss. The whole had a length of 320 feet by 80 feet, with an imposing octagonal center 80 feet in diameter, extending 30 feet above the roof, on which a garden was constructed, with sides of palms and palmettos. From this roof garden the view was superb, and it was one of the chief banqueting resorts of the Exposition. The selection of exhibits in this building was made under the direct supervision of Dr. David T. Day, of the United States Geological Survey, and Dr. B. E. Fernow, Chief of the Division of Forestry of the Department of Agriculture. Of the 26,000 feet of floor space, 3,000 in the center of the building were given to forestry. Not only were the minerals of the South represented by a great variety of specimens, but a series of immense oil paintings, each 120 feet long, showed the geological formation of the Appalachian region, on a scale of one foot to the mile. These covered the ceiling of the mineral half of the building, and on the floor below were the minerals indicated as belonging to the sections, arranged by States in one direction and by classes in the other. Most valuable, of course, were the coal and iron exhibits; and, indeed, in the collection of coal from the various important seams in Alabama, Tennessee, Kentucky, West Virginia, Georgia, and North Carolina the Cotton States and International Exposition was held to have exceeded any previous exposition. At no time in the history of expositions, it is claimed, has such a comprehensive collection of coal sections been shown, the value of a "section" lying in the fact that its height represents the full thickness of the vein from which it is taken. The largest coal section ever mined in the United States was shown; it was 11 feet 6 inches high and weighed 5 tons, having been taken from the big vein at Elk Garden, Va., where several weeks were consumed in mining it. The display of iron ores and products began with the first blast furnace ever built in the United States—on the banks of Rappahannock river, in Virginia, which was shown by a model of that old ruin together with some of the ore, fuel, flux, and pig iron made. The clay products, which were conspicuous, were ranged along two sides of the building, and included many varieties, from those of Rockwood pottery to the earthenware household industry of Jugtown, N. C. The fact that the gran-

ite quarries of Stone mountain in Georgia, are filling an order for 2,500,000 cubic feet of granite to Baltimore, in competition with the well-known granite of Fort Deposit, Md., only 40 miles distant, and accessible by water transportation, testifies to the resources of the State in building stone, and the great industrial development in this line. Not only was a great diversity of ornamental building stone shown in the rough at the Exposition, but columns turned, fluted, and carved showed that much money and talent had been invested in quarries and dressing-plants in the South. The resources in road material were also illustrated. In the center of the Maltese cross into which the exhibit space was formed by the arrangement of aisles, stood a large case containing a complete collection of Southern gems, including diamonds, and showing the existence of fine rubies and sapphires in Georgia and North Carolina. This collection was made by George F. Kunz, of New York. A collection of Southern fresh-water pearls was included. The possibilities of the representative refractory ores that were shown, particularly those of the Carolinas, under the new processes for treating them, were particularly suggestive. Much interest attached to the exhibit of monazite sand from North Carolina, where it was recently found and is now mined on a large scale, superseding that formerly obtained only from Brazil at an exceedingly high cost. Its principal use is in the manufacture of the Welsbach incandescent gas burner, and the exhibit included the lighting of the entire building by the Welsbach Company. Another exhibit from the same State was that of the manufacture of acetylene gas. The manufacture of aluminium from Georgia bauxite ore was also exhibited, as was the progress of asbestos from the crude rock to the finest textile products. The only State north of Mason and Dixon's line that made a display of its mineral resources in this building was Pennsylvania. The entire economic exhibit of the United States Geological Survey was here made, and included a statistical column 40 feet high, showing the total production of each mineral in the South for every minute in the year. The most prominent feature was a cube of coal 11 feet on each side and weighing 55 tons, which was surmounted by a cube of iron 4½ feet on each side, weighing 7 tons, and above this was a huge barrel of petroleum containing 305 gallons. Opposite this column rose a similar one showing the quantity of wood cut for each second of time during the year in the 14 Southern States. The base, representing the amount of wood of all kinds cut for all purposes, contained 275 cubic feet. The second block presented the amount cut for lumber, and contained 35 cubic feet; while the others, in their diminishing succession, stood for the amount cut of the different timber trees of the South, beginning with the long-leaf pine, in 4 pieces, each 18 inches in diameter and 30 inches high. Parallel lines on the successive blocks showed the proportion of the product of each State, Tennessee being first in the total amount of wood cut and in the amount cut for lumber.

In addition to maps, charts, and other graphic illustrations, a series of 20 monographic displays presented each of the great lumber-pro-



ducing trees, in monster frames made of the trees themselves. More than 180 different kinds of Southern trees were represented by sections of the wood, botanical specimens, and descriptive labels. A series of exhibits such as have never before been attempted in the history of expositions was made of lumber displays. A machine for testing the strength of timber was in operation, which proved conclusively that no strength is lost by bleeding pines for turpentine. This demonstration will, it is estimated, add at least \$2,000,000 to the value of the turpentine orchards of the South. One of the most important exhibits was a set of three models. The first represented a 160-acre farm in the hill lands of the South deprived of its protective forest cover, eroded and gullied by rushing waters. The second showed the method of recuperating such a farm; and the third showed it as it should be, with proper proportions and locations of field, forest, and pasturage. Illustrations were given of trees that it is desirable to introduce into the South, notably the eucalyptus, for the protection of the orange groves of Florida; the cork oak, along the Gulf; and the wattle tree, for tanbark. Michigan made a display of veneers of the finest curly woods in sizes such as have never before been polished. Products of woods were also shown, of every form and variety, from the cradle in which Thomas Jefferson was rocked to a full-sized 18-foot church organ.

**The Machinery Building**, 486 feet long and 100 feet wide, had a floor area of 47,800 square feet. The roof, 30 feet high, was supported by heavy trusses, and large windows and skylights afforded ample ventilation and light. The building had four distinct fronts, each in a classical style, modified to suit the materials used. It stood at an altitude of 928 above sea level, and fronted north upon the lake. A basement 8 feet deep contained all the provisions for shafting and countershafting, so that all the space overhead was preserved clear. The power plant was contained in an annex building. About 4,000 horse power of engines were shown. A clarification plant in operation for the reduction of gold from the native auriferous rocks possessed especial interest.

**The Transportation Building**, on the eastern shore of Clara Meer, was the next large structure in order. It was 433 feet long and 126 feet wide, with two end galleries 48 x 117 feet each, and covered a floor area of 55,000 square feet. Five towers in the center rose to a height of 80 feet, and with lofty porticoes afforded an extensive view of the grounds and surrounding country. Two tracks were laid the entire length of the building, and in addition to the handsome exhibits of locomotives, steamships, cars, carriages, wagons, bicycles, trucks, etc., was shown a model of the projected Nicaragua Canal, 14 x 40 feet, such as was exhibited in Paris. The progress of the South in matters of transportation during the past quarter century was traced, and a historic interest attached to the war engines of the Western and Atlantic Railroad.

**The Manufactures and Liberal Arts Building** was, naturally, the largest of all. It was 370 feet long and 216 feet wide, covering 103,-

000 square feet of floor space. It overlooked the plaza in a southeasterly direction and commanded a view of every part of the grounds. At each corner towers three stories high added to the general effect, while the interior was one immense hall, finished in natural woods. There were galleries round all the sides, and a clear-story of 85 feet, the roof being supported by massive and gracefully turned trusses. Flags, streamers, gonfalons, and banners of all nations floated over exhibits of endless variety; the exhibits of many of the foreign countries being installed here, with those of the several States, and many individual exhibits. On the broad balcony, which extended along the four sides of the building, were arranged in at least 100 sections the educational exhibits—from many of the larger colleges and from the public schools of a score of cities.

**The Electricity Building**, which occupied one of the best locations on the grounds, contained perhaps the most remarkable electrical display ever seen, in view of the inventions made within the past two years. This building had a floor area of 21,000 square feet, being 262 feet long and 80 feet wide, with wide-arched portals and a central dome 60 feet in diameter, rising to a height of 100 feet above the floor line. In the evenings thousands of electric lights, great and small, reflected the outlines of the beautiful structure in the waters of the of the lake.

**The United States Government Building** occupied the most conspicuous position on the grounds. This faced the south and overlooked the plaza, which lay at least 60 feet below the level of its foundation. From its balconies every portion of the grounds and of each separate building was within easy view. It was 260 feet long by 180 feet wide, with an annex 140 x 80 feet, which gave a total area of 58,000 square feet. There were no galleries, and no part of the building was utilized above the ground floor, with the exception of three small rooms used for offices. The cost was \$50,000, and it was designed by and erected under the supervision of the supervising architect of the Treasury Department. The exhibit, which was in charge of Hon. Charles W. Dabney, Jr., Assistant Secretary of Agriculture, was the finest the Government has ever sent out. Every executive department was represented. The State Department made practically the same exhibit as at Chicago—of historical documents, state papers and treaties, portraits and relics, the seal of the United States, with illustrations of its development; the inner workings of the President's office and of the department itself in the form of letters to diplomatic officers, and documents of the consular service, as well as a map showing the growth of our official representation abroad. The Treasury showed specimens of money, bonds, and other Government paper, together with a coin-stamping machine in operation, statistical charts and diagrams, 28 portraits of the Secretaries of the Treasury from 1789 to 1893, models of lighthouses, illuminating apparatus, fog signals, etc., of the United States lighthouse establishment, while the life-saving station, with a crew and life-saving apparatus, was in a separate building on the banks of the

lake and gave exhibitions from time to time. The Patent Office, Bureau of Education, Indian Office, and Geological Survey, all under the Interior Department, filled the spaces allotted to them, the Patent Office sending, in particular, a series of models relative to cotton manufacturing and illustrations, never before exhibited, of the manufacture of glass and pottery and agricultural machinery. The United States Geological Survey made an elaborate display of the geological wealth of the whole South, especially of the Piedmont region. Work of the Indian schools was shown. Upward of 10,000 square feet were allotted to the United States Fish Commission, the aquarium of which was arranged in a grotto with the aisles lighted from the water. Both salt-water and fresh-water fish were exhibited, with all the methods of propagation, especial effort being made to show the food and game fishes, as well as the curious fishes of the South. The Agricultural Department, likewise, paid special attention to the fruits of the country, particularly the orange and citrus fruits, which were represented by models. Diseased conditions were set forth, together with the insects inimical to plant life, and the chemicals and instruments used to exterminate them. The cotton plant was fully treated in a similar manner, in a series of facsimile models. Diseases of animals were traced also. The Weather Bureau presented a full set of its working apparatus. The exhibits of the War and Navy Departments were contained in the annex. That of the War Department included many rare Revolutionary and other historic relics, battle flags, etc., while the arms and accouterments from the earliest days of the nation to the present were shown, with all forms of army wagons, pack mules, ambulances, many of them used on historic fields, with models of harbors and river works, and a field-signal outfit. Relics of arctic exploration found place here. In addition to the full illustration of the growth and history of the department, two companies of infantry remained in camp on the grounds to present the tactics, regulations, and discipline of the army. Models of our navy, from the earliest ships to the latest armored cruiser and battle ship, were shown by the Navy Department, with all the guns and projectiles in use in modern warfare, and on the dome of the building was placed one of the powerful search lights of our battle ships, which assisted in the illumination of the grounds. The entire postal service of the Government from the earliest times was exhibited, with all mailing equipments, the workings of the dead-letter office, and a collection of all the stamps ever issued by the Government. The Department of Justice presented portraits of all the Attorneys-General of the United States from the time of Randolph, in 1789, many of whom were Southern men; while a series of photographs exemplified the discipline, employment, etc., of Federal prisons and prisoners. To the Smithsonian Institution and National Museum were assigned 5,300 square feet, the purpose of the exhibit being to convey an impression similar to that which they would receive in visiting the Smithsonian buildings in Washington. In point of value it was generally conceded that the exhibit

of the Government at Atlanta exceeded that made at Chicago, at about one seventh of the cost.

**The Fine Arts Building**, occupying the highest site in the grounds, was the most showy of all the buildings, and the only one finished in white. It was designed by Walter T. Downing, of Atlanta. It consisted of a main central building, with colonnade entrances, and two wide wings entered through semicircular porticoes on the north and south sides. The exterior was covered with cement plaster, and on the frieze appeared the names of noted architects and artists elaborately done in aluminite staff work. The interior presented three large galleries, the main one 110 feet long, 50 feet wide, and 40 feet high, and surrounded by a 12-foot balcony. The wing galleries were 50 feet wide, 100 feet long, and 20 feet high. The total wall space for hanging purposes was 30,000 square feet, while the ground area covered was 21,000 square feet. In comparative merit this department was one of the weakest of the Exposition, though many famous paintings were to be seen, and many excellent statues in bronze and marble.

**The Fire Building** served the double purpose of housing a modern and thoroughly equipped fire department and that of exhibiting all manner of apparatus and fixtures for protection against fire. It had a main frontage of 189 feet and a depth of 50 feet, and was connected with all the Exposition buildings by the Gamewell alarm system. A firemen's tournament was held here Oct. 11, in which 11 companies participated.

**The Woman's Building**, which competed with the Art Palace for the distinction of being the most beautiful structure on the grounds, stood in the center of the amphitheater, between the plaza and the lake. It was designed by Miss Elise Mercur, of Pittsburg. It was three stories high, in pale yellow and white, surmounted by a compressed dome, upon which stood a female figure of Enlightenment, with uplifted torch. There was a simplicity in its pure Greek design which made it unique among the buildings of the Exposition. The broad portico in front was supported by large columns. Its dimensions were 150 by 128 feet, and the dome was 90 feet high. All prominent pedestals of the roof balustrade were crowned with statues symbolic of woman. An annex building received the overflow of exhibits. The Model School Building also contained a portion of those belonging to the Woman's Educational Department. One large room in the building, used for exhibition of the finer arts, was fireproof. The most original feature was the practical illustration of the industrial and applied arts, woman being shown as engaged not only in the occupations conceded to her sex, but in those wherein she has trenchoned upon the domain traditionally masculine. In the department of household economics was shown an exhibit of cooking by electricity. A library of books written by women was contained in the main building, and their musical compositions, magazines, patents, and inventions, together with art work in all the innumerable forms of needlework, painting, sculpture, architectural designs, etc., received recognition, as well as their progress in the several professions.





TRANSPORTATION BUILDING.



AGRICULTURAL BUILDING.



ELECTRICITY BUILDING.



ART BUILDING.



**The Negro Building**, the movement for which was begun by colored leaders and heartily encouraged by the Exposition management, was at the southeastern corner of the park, at the main entrance for Jackson Street, and covered 25,000 square feet, being 276 feet long and 112 feet wide, with a handsome front, large windows, four-cornered pavilions, and a central tower 70 feet high. The pediment above the main entrance was artistically decorated in staff, with figures and groups representative of the life and character of the colored people. The building was the work entirely of negro labor, the contract for it having been let to two colored contractors. The total cost was \$10,000, which amount was paid by the Exposition Company, although the negroes proposed at first to erect their own building if allowed space upon the grounds. Floor space was given to them free, and appropriations were afterward made for a colored public-comfort department and for hospital purposes. I. Garland Penn was chief commissioner for the negro exhibit, and the result of this first opportunity of the kind vouchsafed the race was most creditable. Fourteen States were represented in the Negro Building, the exhibit made by the District of Columbia alone costing \$10,000. Thirty models of inventions by colored men were sent to the building by the Patent Office at Washington; the colored schools had an admirable showing, notably the industrial institutes of Hampton and Tuskegee; while the fine arts were not neglected. A statue by W. C. Hill, of Washington, D. C., representing a negro with "bonds broken, but not off," was pronounced remarkably fine, as was a bust of Charles Sumner by Edmonia Lewis. Several paintings of merit were also shown, much decorative hand work by colored women, and even a medical formula and set of surgical instruments of original design by a colored woman physician of Chicago. Exhibits were also made of books written and newspapers conducted by colored men. An autograph copy of the Emancipation Proclamation, written by President Lincoln at the request of the Ladies' Sanitary Commission, and a draft of the Civil Rights bill in the handwriting of Charles Sumner, were sent from Chicago.

**The Georgia State Building**, facing the Auditorium, was three stories high. The entrance from the plaza was in the basement, while the main entrance, from the west, was on the second floor, on a level with the Administration drive. The building had a frontage of more than 200 feet, with a central dome 100 feet high, over which appeared the model of the coat of arms of the State, "Wisdom, Justice, and Moderation," and on the pediment above the entrance was a bas-relief of its founder, James Oglethorpe. It contained a fine epitome of the native products and manufactures of Georgia, with a good representation of its progress in education, including the exhibit of the State Institute of Technology. Above the balcony, which extended entirely about the building, a series of eight paintings, representing life on Southern plantations, formed a deep and effective frieze. Many interesting relics of the war were to be seen, and near the building stood the "battle-scarred cabin" of Kenesaw mountain, from Cobb

County. Perhaps the most striking exhibit was that of an immense block of Georgia marble, 22 feet long, 4 feet wide, and 2 feet 6 inches thick, surmounted by 2 smaller blocks upon which was balanced a globe, 4 feet in diameter, of polished marble.

The Georgia Manufacturers' Building, which was erected by the recently organized association of the manufacturers of the State, presented the first effort ever made to illustrate the industrial progress of a Southern State. It was near the Jackson Street entrance, just south of the Transportation Building, and though it was not so large as many of the buildings, its massive central gable and large towers gave it a fine appearance. Its dimensions were 254 x 84 feet, and its architecture suggested the later Spanish Renaissance. It contained every kind of cotton and woolen fabrics, sawmill, flour and grist mill machinery, pumps, gins and cotton presses, cotton-seed oil and by-products, with fertilizers and the various ordinary lines of manufactured goods.

**Other State Exhibits.**—Besides Georgia, the following States participated: Alabama, Arkansas, California, Connecticut, Florida, Illinois, Louisiana, Mississippi, New York, North Carolina, Pennsylvania, South Carolina, and Tennessee, and the District of Columbia.

The largest appropriation of any State was made by Pennsylvania, which gave \$38,000, about equally divided between the cost of its building and its exhibit. The Pennsylvania Building was pronounced by some the finest of all the structures. It was low, finished in pure white, with a broad-tiled veranda and a double portico extending forward from each end of the building. In it stood the Liberty Bell, and among the interesting documents displayed was the original indenture or quit-claim deed given by James, Duke of York and Albany, to William Penn. Like most of the State buildings, it was arranged and utilized solely as headquarters for the commissioners, and a resort for those visiting the Exposition from the Commonwealth. The State exhibit of birds and animals was placed in the Manufactures and Liberal Arts Building, and was very fine. It was valued at \$15,000. The work done in teaching the deaf was also shown, and was of much interest.

New York and Massachusetts expended each \$25,000 on a building and exhibit, the former State erecting also a cottage that presented a model workingman's home, intended as an object lesson in household economics, showing the comfort and pleasure to be derived from an income of \$500 per annum. The New York Building, which was of stone and cost \$12,000, was on the site of the Piedmont Driving Club, and after the Exposition was over passed to that club by arrangement to be used as its club house.

The Illinois Building, on which was expended the total appropriation of \$15,000 made by the State, was of a bright canary color. It was in the extreme northeastern portion of the grounds, on the high bluff overlooking Peachtree creek. Near it was the Massachusetts Building, of a colonial yellow color, and the Alabama Building, for which \$20,000 was raised by private subscription, and which held a magnificent representation of the State's natural and developed resources. The appropriation made by Con-  
 nec-

ticut of \$7,000 was not expended upon a building, but upon numerous exhibits in Machinery and Manufactures buildings. The exhibit of Louisiana, for which \$10,000 was appropriated by the Legislature, included more than 100 varieties of sugar-cane stalk, rice in all its forms, 80 varieties of corn, ramie and jute, Perique tobacco (from the parish of St. James, where it is exclusively grown), cypress wood (of which this State cuts 300,000,000 feet yearly) salt (from the mines on Avery island, one exhibit of which was a gigantic statue, cut from a single block of salt and weighing 5 tons, representing Lot's wife), and lumps of sulphur from the vicinity of Lake Charles. On Louisiana day car loads of sugar cane were distributed. In the Louisiana room of the Woman's Building was exhibited a picture of the only woman to whom a public monument has ever been reared in America, the philanthropic Margaret Haugherty, of New Orleans.

South Carolina was represented by private enterprise. North Carolina sent, among other things, the entire collection from its State Museum. Arkansas spent her total appropriation of \$10,000 upon her exhibit, and a similar amount was given by Mississippi. California raised \$35,000, having a building of her own of the old mission type, on the south side of the grounds, near the Southern Railway entrance, which was erected under the auspices of the Los Angeles Board of Trade, while the State Board of Trade sent the material collected for the Chicago fair at a cost of \$100,000, which was installed in the Manufactures Building. On the exhibit of Florida \$25,000 was expended. It was contained chiefly in the building of the Plant System of railways and steamships, in the form of a pyramid 100 feet square at the base and 60 feet high, veneered with phosphate as a roof covering, Florida rock on two sides, Florida pebble on the third, and South Carolina phosphate on the fourth. It was entered by wide doors on the four sides, and the interior consisted of a room 100 feet square and 20 feet high. Another notable exhibit was made by the Southern Railway in a building of its own, octagonal and ornamented with bas-reliefs in plaster, showing the progress of transportation from the days of the stagecoach to the vestibule train. The exhibit of the resources along the line of this railway was very fine, and the total cost of the building and its contents was \$25,000.

**Foreign Exhibits.**—No European nation was represented officially, but half the space in the Manufactures and Liberal Arts Building was occupied by exhibits from those nations. Italy, which sent the largest number, showed important and beautiful collections of marble statuary, carved and artistic furniture of all descriptions, decorated panels and drawing-room ornaments, artistic bronzes, Roman and Florentine mosaics, Venetian glassware, artistic majolica and ceramics, Neapolitan corals and tortoiseshell ornaments, Roman cameos, artistic jewelry, tapestries, cloth and cotton fabrics, hats, bicycles, and sewing machines, chemical and pharmaceutical products, scholastic and scientific books and publications, and a great variety of exhibits of olive oils, wines, and liquors. From Great Britain came artistic pottery, electro-plate and

silverware, cut crystals, Sheffield cutlery, Birmingham goods, Bradford woolens and cloth, Coventry cycles, pianos, furniture, chemical products, terra-cotta, statuary, ship models and railway appliances, books, etc. The French exhibit consisted of tapestries, rich drawing-room furniture, bronzes, lamps, statuary, upholstery, scientific and electrical appliances, marine and mathematical instruments, Parisian novelties, jewelry and fancy ornaments, enamels, apparatus used at Pasteur's Institute for the discovery and treatment of bacteria and bacilli, perfumery, soaps, wines, and liquors. Austria and Germany sent pianos, artistic majolica, Dresden china and glassware, cut stones, new photo-paintings and scientific apparatus and appliances; Belgium sent Brussels lace, embroideries, patent hand-stitching machines, operative exhibits of glass engraving, fancy goods, chocolates, spices, etc.; while Russia was represented by a superb collection of furs, and by stuffed bears, seals, and other animals, Russian silversmith work and enamels, carved wood, and art fabrics.

Mexico appropriated \$25,000 for an exhibit at the Exposition, which was not installed until the first week in November. It occupied 4,000 square feet in the north end of the Transportation Building. The decorative work was in the national colors of the republic, and the exhibit represented its natural and industrial products. The assortment of Mexican onyx was especially fine, and mineral ores were displayed in large quantities, as were cereals and fibrous, medicinal, and food plants. Photographs on glass traced the progress of Mexico from the time of the Aztecs, and a special feature was the collection of the idols of the Aztecs, which have never before been sent out of the country, loaned by the Mexican National Museum.

The only foreign country that erected a building of its own was Costa Rica, which, with an appropriation of \$5,000, had two pavilions in the Moorish style, on the "peninsula" facing the lake opposite Machinery Hall. In the one, fitted up as a theater, were exhibited 2,000 stereopticon views of Costa Rica, while the other, as a restaurant and coffee house, was especially intended to interest visitors in the coffee production of the country.

The Argentine Republic was the first nation to participate in the Exposition, appropriating \$25,000, and its exhibit was in the Mines and Forestry Building, occupying the whole of one end. It consisted of valuable woods, many varieties of wools, and grains of all kinds.

In the Woman's Building was an exhibit of exquisite Natute lace handkerchiefs, made by hand by the women of Paraguay.

Adjoining the Mexican exhibit in the Transportation Building was that of Venezuela, consisting of 279 samples of woods, gold quartz, copper, and admirable displays of coffee, cocoa, hides, asphalt, petroleum, coal, cotton, ramie, marble, indigo, the milk of the cow tree, etc.

The exhibit of Chili, for which \$10,000 were appropriated, consisted in a great part of the most conspicuous export of that country—nitrate of soda, a natural fertilizer.

Mexican and Japanese villages were erected by natives of those countries without Government aid. The Mexicans had a theater and a



sham bull fight, and in the village were also exhibited some interesting archæological remains from the ruins of Palenque. The principal amusement features were found on the Midway Heights, between Piedmont Avenue and Jackson Street, and included a Cairo street, Chinese, German, and Dahomey villages, a Mystic Maze, Hagenback's trained-animal show, with a monkey house containing 740 monkeys; a Scenic railway, vaudeville theater, etc., closing with Buffalo Bill's Wild West Show. For the Chinese village, over 200 Chinese were brought from Hong-Kong. The Phoenix Wheel was modeled after the Ferris Wheel, but was much lighter, and was lighted by electricity at night. One of the special attractions was a pyrotechnic spectacular show of "The Storming of Wei-Hai-Wei."

The musical features of the Exposition included the performance on the grounds by the most celebrated musical organizations. Gilmore's, Sousa's, and Innes's bands were engaged, and Mexico sent her famous Eighth Regiment band. A chime of 13 bells was hung in a tower 150 feet high, near the Government Building and the palace of the fine arts.

The Exposition was well attended, particularly after Nov. 1. It was visited by a large crowd on Blue and Gray day, when 25,000 men of the Grand Army of the Republic, who attended the opening exercises at the Chickamauga National Park, Sept. 19, were met by the Confederate veterans at Atlanta. On Oct. 24 50,000 people were upon the grounds when President Cleveland, with the members of his Cabinet and ladies, was received. A day was given to each of the States, when, in most instances, the governors of these States attended, accompanied by their staffs and a large delegation. Nov. 12 was Chicago day, Nov. 14 Pennsylvania day, Nov. 15 Massachusetts day, Nov. 19 Georgia day, and Nov. 25 Manhattan day. Others especially to be noted were Liberty Bell day (principally intended for children) Atlanta day, Confederate day, Negro day, Plant day, and Inman day. On some occasions the attendance exceeded 100,000. On Dec. 31, the day appointed, the Exposition came to an end. During its continuance many important congresses were held, notably those of the National Educational Association, held the last week in October; the Woman's Temperance Christian Union, held the first week in November; and the colored congresses, held in November and December.

The Department of Awards was presided over and directed by Dr. Daniel C. Gilman, President of Johns Hopkins University, who devised an ingenious system of making these awards, combining the best features of the individual-judge

system and the jury system. He obtained the services of experts of ideal excellence for theoretical and practical knowledge in all the special lines involved, and the awards were made upon the merits of the exhibits themselves, without regard to the general reputation of the exhibitors. The jurors selected by Dr. Gilman were distributed in groups corresponding to the ten departments under which the exhibits were classified. Medals in bronze, in silver, and (in exceptional instances) in gold were awarded for high degrees of merit. The jurors met in Atlanta on Oct. 15, and reached their conclusions by Nov. 1.

The design of the official souvenir medals of the Exposition, which were struck by the United States Mint, showed on the one side a bale of cotton, on which was perched with outstretched wings a phoenix. Under the bale appeared rays of fire with the year "1865" printed, and above were the figures "1895." Around the edges of the medal were printed the words "Cotton-States and International Exposition," and at the lower side the words "Atlanta, Ga., U. S. A., September 18th, December 31st, 1895." On the reverse was a vignette of Henry W. Grady, and around the edges the words "Official Souvenir Medal." The medals were of bronze, the exact size of a silver quarter of a dollar.

The officers of the Exposition were:

C. A. Collier, President and Director General; W. A. Hemphill, First Vice-President; H. H. Cabaniss, Second Vice-President; W. D. Grant, Third Vice-President; E. L. Tyler, Fourth Vice-President, A. L. Kontz, Treasurer; J. J. Spalding, General Counsel; A. W. Smith, Auditor; E. S. McCandless, Assistant Auditor; J. R. Lewis, Secretary; E. F. Blodgett, Assistant Secretary; Grant Wilkins, Chief of Construction and Landscape Engineer; Bradford L. Gilbert, Supervising Architect; Charles F. Foster, Mechanical and Electrical Engineer.

Commissioners:

C. H. Redding, Commissioner to Mexico; I. W. Avery, Commissioner to South America; A. Macchi, Commissioner to Europe; Alfonso Faber, Commissioner to Austria.

The chiefs of departments were as follow:

Grant Wilkins, Construction; E. L. Tyler, Transportation; W. S. Cooper, Publicity and Promotion; I. H. Allen, Machinery; H. M. Atkinson, Electricity; D. T. Day, Minerals; B. E. Fernow, Forestry; Horace Bradley, Fine Arts; A. W. Smith, Public Comfort; W. J. Northen, Educational; E. A. Felder, Admissions; James R. Wylie, Agriculture and Dairy; E. P. Chamberlain, Manufactures and Liberal Arts; H. L. Wilson, Live Stock.

There was also a Board of Directors, composed of 63 men, and a Board of Woman Managers, with Mrs. Joseph Thompson as president.

## F

**FARMERS' CONGRESS.** The fifteenth annual session of this body met in the auditorium on the Exposition grounds, at Atlanta, Ga., Oct. 10. By previous arrangement, this meeting assumed a Pan-American form and continued for six days. This congress is the largest organiza-

tion of the kind in the world. It is distinctively a nonpolitical, agricultural organization, composed of true representatives of agriculture, appointed and commissioned by the governors of the several States and, in this instance, representatives of the German Empire, Chili, Vene-

zuela, and Mexico, by R. B. Baron von Hermann, agricultural *attaché* of the German legation, Señor Julio M. Foster, Señor Francisco Javier Yanes, and Señor M. Romero, minister from Mexico, in the order named.

After prayer by the Rev. Mr. Bryan, of Georgia, Hon. Porter King, Mayor of Atlanta, delivered an address of welcome, and was followed by Mr. Hunnicutt, in behalf of the Georgia Agricultural Association, and by Dr. H. C. White, in behalf of the Governor of Georgia. These addresses were responded to by Secretary Stahl, of Illinois, and by President Clayton, of Iowa.

President Clayton then delivered his annual address, in which he said:

The art of cultivating the ground and of obtaining from it the products necessary to support animal life was the first science in the development of the rich valleys watered by the Euphrates, the Tigris, and the Nile. Like the ancient settlers of the valley of the Nile, the emigrant from all civilizations came to cultivate the rich valleys in this great new continent of ours. And while they better understand the art of cultivating the soil, the mode seems primitive in comparison with the high art with which we are now blessed. Our forefathers in the beginning were farmers, carpenters, masons, merchants, and manufacturers, complete, though primitive, in the individual. First and foremost they were farmers, and used other avocations merely as incidental to the first and chief employment. Less than a half century has elapsed since the spinning wheel and the handloom were common and necessary in the American home. Fifty years ago the American farmer lived almost entirely within his own resources and within himself. He built his own cabin, constructed his own fireplace and chimney, and fashioned his own farm implements. A portion of the field was set aside for the flax, and when it was pulled, bleached, and broken, it was manufactured into textile fabric to supply the needs of the family.

As our country has been developed, the inventive genius has been called into activity, and under his inventions the American farm hand can accomplish the labor of nearly five men of the Old World, and he has so divided and diversified employment as to revolutionize the condition of things.

President Harrison, in a message to Congress, hinted that the establishment of the Department of Agriculture with its secretary as a Cabinet officer "was at the enlightened demand of a worthy class of people," and he congratulated the people on the great results accomplished by it. In a subsequent message to the same body he refers to the marvelous growth of the farming interest. He says its growth has been from \$1,363,000,000 in 1860 to \$4,500,000,000 in 1891, an increase of 230 per cent. The entire exports for the fiscal year ending June 1, 1892, reached the unparalleled amount of \$1,030,000,000, 70 per cent. or, in round numbers, \$800,000,000 of which were agricultural products, exceeding any previous year by \$150,000,000.

At the assembling of the second session of the Fifty-third Congress, Dec. 4, 1893, President Cleveland corroborated the statement of his predecessor as to the year referred to; but his message disclosed the fact that at the close of the fiscal year ending June 1, 1893, there had been a shrinkage in our exportations, nearly \$20,000,000 of which was on agricultural products. This could not be because of short crops, for the reason that the President in his message to the special session of Congress in August of the same year referred to the "plenteous crops, with remunerative production and manufacture."

In my judgment the Department of Agriculture is the most important of the Government. It represents greater interests than any single department; yet,

through all the history of the Agricultural Department, it has been characterized with timidity and a lack of boldness in demanding legislation and adequate appropriations to make the department effective.

There is scarcely a question that may be raised in this body affecting our agricultural interests but will have a political side to it, but let us discuss those questions without reference to its influence upon any political party. Let us take each other by the hand and make one common cause for our great interest.

The roll of States was called, and the following-named gentlemen were appointed a Committee on Resolutions:

Arkansas, Jeff D. Wellborn; Colorado, Lute Wilcox; Florida, T. S. Appleyard; Georgia, Dr. R. G. Norton; Illinois, Mr. O. S. Foley; Indiana, D. W. Haeggy; Iowa, A. V. Stout; Kentucky, Sam Brown; Massachusetts, W. L. Kilbourne; Michigan, J. G. Ramsdell; Mississippi, Dr. J. D. Hutchinson; Missouri, J. C. Denham; Nebraska, J. B. McDowell; New Hampshire, J. W. Sanborn; North Carolina, W. B. Meares; Ohio, W. Lawrence; Rhode Island, G. A. Stockwell; Pennsylvania, H. F. James; Tennessee, J. W. Roseman; Texas, Rev. R. F. Butler, "Unele Snort"; Vermont, ex-Gov. Levi K. Fuller; West Virginia, J. A. Myers; Wisconsin, John Bender; Maryland, H. R. Walworth; New Jersey, Franklin Dye; New York, Lorenzo D. Collins; North Dakota, H. E. Stockbridge; Virginia, C. T. Watkins.

The next order of business was the annual election of officers for the congress: Judge William Lawrence, of Ohio, nominated Hon. Benjamin F. Clayton, of Iowa, for re-election as president. This was seconded by Georgia and many other States, and Mr. Clayton was unanimously re-elected.

Dr. R. G. Norton, of Georgia, nominated Major G. M. Ryals, of Georgia, for re-election to the office of vice-president. This was seconded by Ohio, Indiana, Alabama, Texas, and other States. The election was then made unanimous.

Dr. John A. Myers, of West Virginia, nominated for secretary the present incumbent, Hon. John Stahl, of Chicago. Texas, Indiana, Tennessee, Georgia, Nebraska, and other States seconded the nomination, and it, too, was made unanimous. For first assistant secretary, Major W. G. Whidby was unanimously re-elected.

Mr. T. J. Appleyard, of Florida, was unanimously re-elected third assistant secretary, and Mr. Henry Hayden, of Iowa, treasurer.

The following resolutions were adopted:

1. That public interests require an increase of manufactures of cotton, wool, flax, hemp, and ramie, so that as soon as practicable all the wants of these goods by American people may be supplied by the skill and industry of our own citizens; and that the only obstacle in the way of such manufacturing in the States of the South and of the great West is the want of skilled labor; therefore, as a means of enlarging such manufactures in these States, the legislatures of all the States are respectfully urged to provide a department for instruction in textile industries in one or more of the universities in each State, and especially in those endowed or aided by the land-grant act of Congress of 1862.

2. That this Farmers' National Congress is emphatically in favor of both gold and silver as money of ultimate redemption and equally as standard of value; and to secure this object we favor a conference, to be called by the United States, of those nations ready to accept bimetalism with the ultimate coinage of both gold and silver on a rate to be agreed upon. That we favor a law requiring duties on commodities the prod-



uct of, or imported from, the mono-gold nations to be paid in gold coin; that we favor a law imposing duties on silver imported from mono-gold nations equal to the difference between the bullion value and the coinage value of silver at the date of the importation.

3. That we respectfully request the Honorable Secretary of Agriculture to harmonize and more closely unify the work of the crop statisticians of the weather service of the several States, and to utilize as far as possible statistics from the State organizations.

4. That American commercial and financial independence in foreign commerce, through proper balancing of trade and transportation, is of growing importance and necessity, not alone to prosperity, but to the character and destiny of the republic; therefore, the national interest, advantage, and safety require that American shipping be American built, owned, manned, freighted, and insured, to the end that our people shall have the fullest employment, and American commerce the best service and highest economy, with perfect independence.

5. Whereas, the evident prosperity of that section of our country known as the "cotton belt" is due to the fact that the farmer has become in a measure self-sustaining, and is learning to make his money crop a surplus crop: therefore we congratulate our brothers of the South on the result of their efforts on this line, to the end that their country may become rich and prosperous, as it was by Nature intended.

6. That the secretary of this body is hereby directed, so far as practicable, to procure and forward to each State library one copy of all the proceedings of this congress from its commencement, and two copies to the congressional library at Washington, D. C.

7. That we have listened with profound interest to the able and instructive address of Señor Francisco Javier Yanes, on "The Commercial Relations of the American Republic," and further, that, to secure reciprocal trade between the United States and the Spanish American republics, we favor legislation for reciprocity commercial treaties and aid for steamship lines sufficient to answer all the purposes of such trade.

8. That the growth of American tobacco gives employment to a large number of persons, and by the system of the "*régie*" contracts adopted by foreign countries this product is shut out from an open market, except in England and Germany; therefore, we respectfully request the Honorable Secretary of Agriculture and the members of Congress to investigate this matter, to the end that, by treaty or otherwise, proper relief may be secured.

9. That a committee be appointed, consisting of one member from each State, to prepare a memorial to the legislatures of the several States, asking for sufficient appropriation to defray the actual expenses of delegates attending these annual meetings; and that the secretary of this body be instructed to forward such memorial to the proper authorities, and tley be requested to present it to such Legislature when convened.

10. That during our colonial history bounties were authorized to be paid for various agricultural and manufactured products by authority of legislative assemblies; that similar bounties have since been paid in this and other countries by acts of legislatures; that similar bounties, in this and in other countries, have always been regarded as legitimate exercise of legislative functions and power; therefore, we favor the payment of sugar bounties authorized by act of Congress in 1890.

11. That the depressed condition of the staple agricultural and shipping interests demands the enactment of such legislation as will put both of these great industries upon a footing of equality with those now especially fostered by the Government, and that our efforts be pledged to the furtherance of a union between the shipping and the agricultural interests; and that a select committee of five be appointed to

attend a conference to be held under the auspices of the National Grange and other bodies, in furtherance of this proposition.

12. That we demand that free mail delivery be extended to towns and villages and into the rural districts as rapidly as possible without unnecessary increase in the expenses of the department; and that we are opposed to further reduction of the present rates of postage until this is accomplished.

13. That the money in circulation in the United States Sept. 1, 1895, was in gold coin, standard silver dollars, subsidiary silver, gold certificates, silver certificates, Treasury notes (act of July 8, 1890), United States notes, currency certificates (act of June, 1872), and national bank notes, amounting to \$1,605,738,609. While eminent statesmen advocate the policy of retiring from circulation, and the cancellation of United States notes (greenbacks) and the Treasury notes, thus reducing the currency by the amount of \$356,973,415, which would be a contraction ruinous to the business interests of the country, and further aggravate the evils of the gold-mono-metallism, we are utterly opposed to any such contraction of the currency and condemn it as hostile to public interest, until such time as an adequate amount of gold and an additional amount of silver coinage shall be provided to supply all needed money for public use.

14. It is an established principle with both of the great political parties that a tariff on imported goods adequate to meet the expenses of the Government should be levied; therefore we demand the same protection for farm products that is guaranteed to other industries of the country.

15. That we memorialize the Congress of the United States for aid in protecting the country from the ravages of the gypsy moth, which has so far been held in check by the efforts of a single State.

16. That we urge upon the Secretary of Agriculture, and upon the Congress of the United States, the importance of sufficient appropriations to employ expert civil engineers to investigate the possibility and the practicability of water storage and the best system of irrigation for the reclamation of the arid and semi-arid districts in the United States.

17. That, being convinced that the improvement of the navigation of the ports on the Atlantic, Gulf, and the Pacific coasts, the lakes and rivers, and the speedy completion of the harbors of refuge now begun, are to make navigation, life, and property more secure, and that this work means cheaper transportation, cheaper food, cheaper clothing, iron, coal, lumber, and other supplies to every inhabitant of the United States, we urge the Federal Congress to make liberal appropriations for these objects in the interests of wise economy.

18. That we memorialize the Federal Congress to enact a general law against the spread of the so-called Russian thistle on the public domain, and to make sufficient appropriations for the extermination of the pest on the Government lands, and to aid States in the suppression of the pest.

19. That we respectfully petition the Federal Congress to enact such laws as will protect the dairy farmers of the country against the manufacture of filled cheese.

20. That the vast agricultural products of the West are impeded in their passage to the Eastern market by want of deep-water ways connecting the Great Lakes with the sea, and the Dominion of Canada, through the aid of the British Government, is seeking to divert these products through other channels to foreign ports; therefore, we respectfully request the Congress of the United States to make sufficient appropriation to construct a continuous deep-water way from the Great Lakes to the deep waters of the Hudson river, at Albany, thereby connecting the lakes with the Atlantic.

21. That the secretary of this body is hereby directed to engross all resolutions asking for congressional legislation, and to forward a copy of the same to the President of the Senate and to the Speaker of the House, and request that the same be referred to

the agricultural committees of the two bodies, and that the same be printed and placed on the desks of the members of both houses.

Nashville, Tenn., was chosen as the place for holding the meeting in 1896.

**FAURE, FRANÇOIS FÉLIX**, President of the French Republic, born in Paris, Jan. 30, 1841. He was the son of an upholsterer, and was educated for mercantile life in a private commercial school, and sent to England for two years to learn the language and become familiar with English methods of doing business. He began his business career at Amboise, where he learned the currier's trade and mastered the leather business. At Amboise he married at the age of twenty-three the daughter of M. Guinet, then mayor of the commune, and in later years Senator for Indre. Settling in Havre as a commission agent and importer of hides, he became in time a large merchant and shipowner and President of the Chamber of Commerce. He once lectured on history to evening classes, and so became a ready public speaker. He was elected a member of the Municipal Council and became deputy mayor. During the war of 1870 he was sent to England by Gambetta to purchase arms for the Franc Tireurs and the Garde Mobile. As chief of a battalion of mobiles he aided in suppressing the Commune in Paris, and gained the ribbon of the Legion of Honor. The Broglie Cabinet deprived him of his office of deputy mayor in 1874, but he continued to give great attention to educational and charitable work, and rose constantly in the esteem of his fellow-townsmen, who in 1881 elected him to the Chamber of Deputies, and afterward renewed his mandate at every general election. When Gambetta formed a ministry on Nov. 14, 1881, he made Faure Under Secretary of the Ministry of Commerce and the Colonies. Jules Ferry selected him for the same post in making up his ministry of Feb. 21, 1883, which endured over two years. He returned to the office once more in the Brisson Cabinet of 1885, and a fourth time in the Tirard Cabinet of Dec. 12, 1887, the first one appointed by President Carnot. He was regarded in the Chamber, whether in or out of office, as an authority on all subjects connected with merchant shipping, foreign commerce, or colonial questions, and was marked out by experience and reform ideas for the new Ministry of Marine, to which he was called in the Dupuy Cabinet of May 30, 1894. He had also been selected to act on several committees dealing with commercial and financial questions of a more general kind, such as the Committee on Railroads and the Committee on the Conversion of the *Rente*, and was the author of a treatise on comparative European budgets. His technical knowledge, untiring industry, and progressive tendencies gave him a high reputation among politicians as a minister. The Chamber showed its regard for his character and ability by electing him regularly its vice-president. In politics he has been an Opportunist and a member of the group known as the Republican Union. In the caucus that was held by the Moderate Republicans to select a candidate for President to succeed Casimir-Périer when he suddenly resigned in January, 1895, the eminent lawyer Waldeck-Rousseau was nominated. But before

the balloting at Versailles on the following day, Jan. 17, many members of the Congress decided to vote for M. Faure, who received more votes than M. Waldeck-Rousseau on the first ballot, and was elected on the second.

**FINANCIAL REVIEW OF 1895.** Among the important features of the year was the ending of the war between Japan and China, the latter suing for peace, and the treaty of Shimonoseki was signed on April 30, China agreeing to pay 200,000,000 taels indemnity and ceding Formosa and the Liao-Tung peninsula. But later, through the influence of Russia, Japan relinquished possession of the latter, and she received £5,000,000 additional indemnity. Another feature was a wild speculation in South African mining shares, which began in London in May, and later extended to Continental centers, disastrously collapsing in November, and it was estimated that the losses were fully \$467,500,000. On Nov. 5, owing to reports of constantly recurring disturbances to the detriment of all nationalities in Armenia and other parts of the Turkish Empire, the ambassadors of the great powers separately went to the Porte to urge the immediate adoption of adequate measures to bring about the restoration of order, declaring that if such measures were not adopted the powers would decide in concert upon the steps to be taken. The Sultan promised reforms, and the majority of the powers remained in accord, but it was claimed toward the end of November that Russia and Germany, at least, were not disposed to act in concert with the other powers in an extremity, and the disturbances in Armenia continued to the end of the year. Another feature was the accumulation of the unprecedented sum of £44,724,581 bullion in the Bank of England, this amount being on deposit Dec. 12. Bar silver in London rose from 27½*d.* per ounce in January to 31½*d.* in October, due mainly to speculative manipulation based upon the expectation of large requirements in the far East, but there was a decline to 29½*d.* in December, and the price was 30½*d.* at the close. All Europe was in a state of political ferment at the end of the year, in consequence of the Turkish question and of complications in China and Japan; and the losses resulting from the collapse in mining shares in London and on the Continent and those incurred by the London speculators during the panic which followed the Venezuelan message of President Cleveland Dec. 18 caused more or less financial tension.

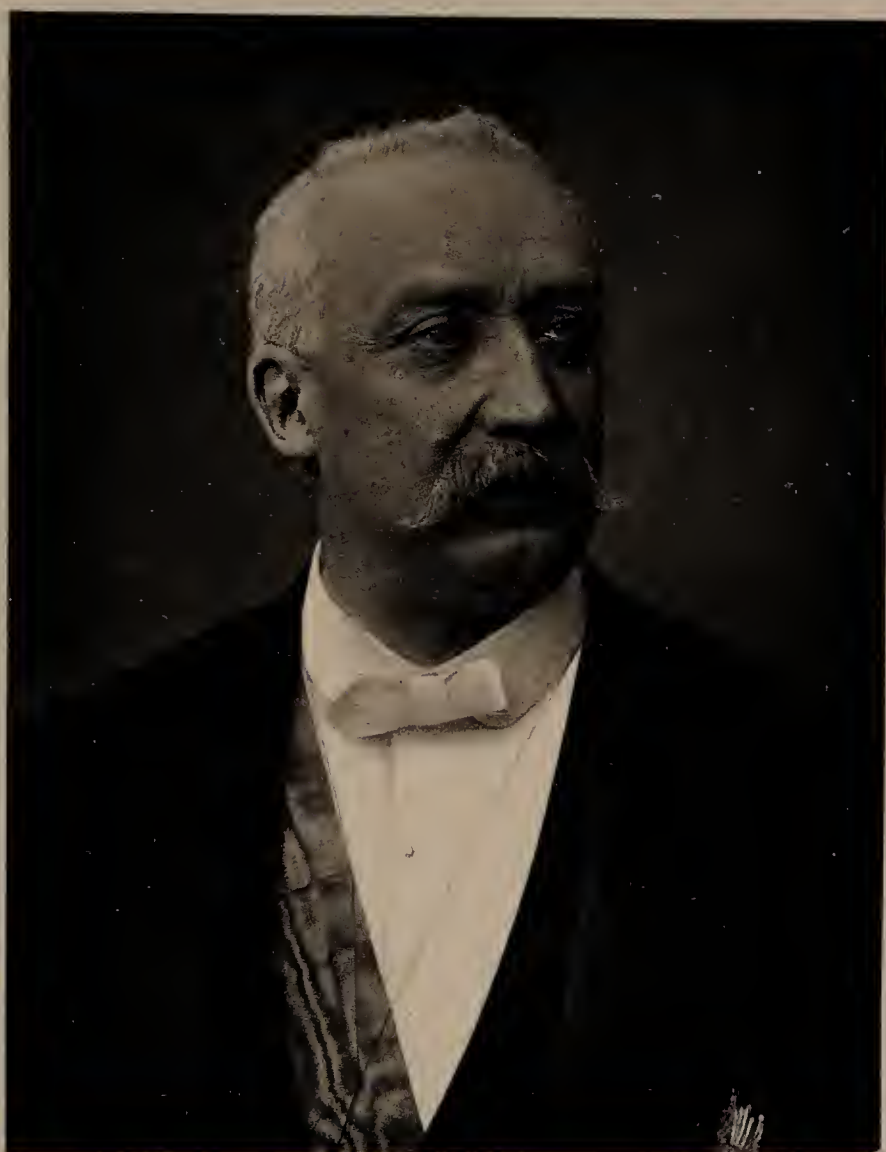
One of the most important events in this country during the year was the contract made by the Administration on Feb. 8, with Messrs. Belmont and Morgan, the former representing the London house of Rothschild & Co., and the latter the American house of J. P. Morgan & Co. and J. S. Morgan & Co. of London, for the purchase of 3,500,000 ounces of gold at \$17.80441 per ounce, to be paid for by the delivery of \$62,315,400 4-per-cent. thirty-year bonds, it being agreed that one half of the gold should be imported from Europe. On the day that the contract was signed the net gold in the Treasury had been reduced to \$41,340,181 by withdrawals for hoarding and for shipment to Europe, and these withdrawals during January amounted to \$45,117,738, and as Congress had refused to pass











New York, D. Appleton & Co.

*Alb. Davis*





a bill recommended by the President authorizing a 3-per-cent. gold loan, the only remedy was a resort to the authority conferred by the act of 1862, which provided for the direct purchase of gold. Immediately upon signing the contract the Bond Syndicate arranged for the importation of gold from Europe. At the same time a subsyndicate was formed, embracing the principal foreign bankers, several of the New York city banks, and a few institutions in the interior, for the purpose of facilitating the operations of the Bond Syndicate. The bonds were sold in Europe at £227 per \$1,000 bond, carrying a coupon of 3s. 7d. payable Aug. 1; and in America at 112½, bearing interest from Feb. 1. The contract was fulfilled June 24, but, after a large part of the gold, about \$15,500,000, had been received from abroad, the Secretary of the Treasury, in order to prevent disturbances in rates for foreign exchange at a critical period and avoid a condition which would have forced gold exports, and consequent withdrawals from the Treasury, acquiesced in a departure from the literal terms of the contract, that one half of the coin should be procured abroad, and accepted deposits of gold then held in this country to complete the delivery. After the fulfillment of the contract the Bond Syndicate continued to make deposits for the protection of the Treasury, and between June 24 and Sept. 11 they deposited \$16,127,432.94. They had paid into the Treasury Feb. 21 \$32,558,122.31, representing the amount due on the American half of the bonds. After full payment had been accepted for all the bonds the net gold in the Treasury stood, June 28, at \$107,550,976, and on July 9 it was reported at \$107,571,230. Gradually it was reduced by withdrawals of gold for export, and on Sept. 5 it stood at \$99,127,568. After the Bond Syndicate ceased to make deposits for the protection of the Treasury the reduction in the net gold continued, and at the end of the year the amount was reported at \$63,875,948. In his annual message to Congress President Cleveland called attention to the necessity for legislation for the relief of the Treasury, suggesting the retirement of the legal tenders. But this course was generally opposed, and on Dec. 28 a bill was passed by the House, providing for the issue of \$50,000,000 3-per-cent. certificates of indebtedness, to meet a deficiency in the revenue, and \$50,000,000 coin bonds to maintain the gold reserve. The bill was promptly sent to the Senate, but the measure

mainder at the option of the Government, said gold to be paid for by the issue of about \$202,000,000 4-per-cent. thirty-year bonds. There was much opposition manifested by members of Congress and by some bankers to this plan of the President, and on Jan. 6, 1896, the Secretary of the Treasury issued a circular inviting proposals for \$100,000,000 4-per-cent. thirty-year bonds, in denominations of \$50 and multiples of that sum, to be dated Feb. 1, 1895, said proposals to be received until Feb. 5; payment for the bonds to be made at any of the subtreasuries, 20 per cent. on notice of acceptance of the bids and 20 per cent. at the end of each ten days thereafter. It was understood that a syndicate would take all of the bonds not subscribed for under this circular.

The financial situation was severely strained immediately after the Venezuelan message of President Cleveland, by reason of a war scare, during which Europeans freely sold American securities; and later there was more or less selling by foreigners, because of apprehensions of a financial crisis in this country, resulting from the opposition of Congress to the financial plans of the President.

The following tabular survey of the economical conditions and results of 1895, contrasted with those of the preceding year, is from the "Commercial and Financial Chronicle":

ECONOMICAL CONDITIONS AND RESULTS.	1894.	1895.
Coin and currency in the United States, Dec. 31.....	\$1,802,991,088	\$1,796,803,237
Bank clearings in the United States .....	\$45,615,280,187	\$53,348,081,562
Business failures.....	\$172,992,856	\$173,196,060
Imports of merchandise (year).....	\$676,212,941	\$601,626,678
Exports of merchandise (year).....	\$825,102,248	\$824,896,522
Gross earnings 123 roads (year).....	\$509,910,983	\$538,237,271
Railroad construction, miles..	1,800	2,100
Wheat raised, bushels.....	400,267,416	467,102,947
Corn raised, bushels.....	1,212,770,052	2,151,138,580
Cotton raised, bales.....	9,592,766	6,500,000
Pig iron produced (tons of 2,240 pounds).....	6,657,388	9,446,808
Steel rails, Bessemer (tons of 2,240 pounds).....	599,120	1,159,000
Anthracite coal (tons of 2,240 pounds).....	41,391,199	46,845,761
Petroleum (runs) production, barrels.....	30,072,779	26,284,025
Immigration into the United States (year).....	248,983	324,542

The prices of leading staples on or about Jan. 1, 1896, compared with prices at the same date in 1895 and 1894, were as follow:

STAPLES.	1894.	1895.	1896.
Cotton, middling uplands, per pound.....	8	5½	8 <sup>5</sup> / <sub>16</sub>
Standard sheetings, per square yard.....	6½	5½	6
Wool, Ohio XX, per pound.....	24	17 to 18	18 to 19
Iron, American pig No. 1, per ton.....	\$14 00	\$9 50 to \$13	\$12 to \$14 50
Steel rails at mills, per ton.....	\$24 00	\$22 75	\$28 00
Wheat, No. 2 red winter, per bushel.....	65½	60½	66½
Corn, Western mixed No. 2, per bushel.....	43	51½	34½
Pork, mess, per barrel.....	\$14 to \$14 25	\$12 75 to \$13 25	\$8 75 to \$9 25

being unacceptable to the Administration, and there being little probability that satisfactory legislation could be secured, the President informally opened negotiations with J. P. Morgan & Co. for the purchase of 11,500,000 ounces of gold, deliverable one half promptly and the re-

**The Crops.**—With the exception of winter wheat and cotton the crops were abundant, and there was an unprecedented yield of corn and oats, estimates of the Department of Agriculture showing a yield of 2,151,138,580 bushels of the former and of 824,443,537 of the latter. Conse-

quently, prices were low, and at the end of December corn was 34½ cents, while oats were 23¼ to 23½ in the New York market. Wheat advanced early in the season on news of the damage to the winter crop, and in June the price here was 83 cents, but later there was a decline, and at the end of the year it was 66½ cents. The cotton crop was late and the yield was short. Planters who had been compelled to sell last year's cotton at what they regarded as ruinously low prices appeared disposed to take advantage of the short crop, and some were encouraged to hold back the staple. In September there was a speculative movement which advanced the price, and in October these speculators made an attempt to corner October deliveries of cotton, and this resulted in an advance to about 9 cents. Then the price gradually fell off, but at the end of the year it was 8½ cents.

Taking prices in New York, Jan. 1, 1896, if the whole of the crops could have been laid down at that point on that date, the values would have been as in the following table :

PRODUCTS.	CROP OF 1894.			CROP OF 1895.		
	Yield.	Price, Jan. 2, 1895.	Value.	Yield.	Price, Jan. 2, 1896.	Value.
Wheat, bushels.....	460,267,416	\$0 60½	\$293,420,478	467,102,947	\$0 66½	\$309,455,702 39
Corn, bushels.....	1,212,770,952	51½	621,608,502	2,151,188,580	34½	742,142,810 10
Cotton, bales.....	9,000,000	5½	255,937,500	6,500,000	8½	272,187,500 00
Total values.....			\$1,170,966,480			\$1,323,786,012 49

**Stocks.**—The lowest prices for the majority of stocks were recorded during the first quarter of the year, while the highest were in the last six months, though there was an important downward reaction in the industrials in November, and the whole market was more or less affected by selling of railroad stocks for European account in December, due to the panicky fall resulting from the Venezuelan message of President Cleveland. Influenced by the discussion of the Carlisle currency measure in the House of Representatives, by engagements of gold for shipment to Europe, and by the unsettled financial conditions, the stock market was irregular and generally lower in January. There was a fairly large short interest in leading stocks at the beginning of the month, and soon after some manipulation of Chicago Gas and an advance in the Grangers induced general rebuying to cover short contracts, which caused a gradual improvement, and the tone was strong until after the middle of the month, when continued withdrawals of gold for export to Europe and indications of hoarding of the coin by some of the banks in the interior, together with selling of stocks for European account, brought about a decline, and the tendency was downward until just before the close, when reports of an intended issue of bonds by the Government caused a sharp rally, and the tone was strong to the end of the month, with the greatest improvement, compared with the opening, in Sugar, Delaware and Hudson, Illinois Central, Lake Shore, Manhattan, New York Central, Omaha preferred, Pullman, and Rock Island, while the most important declines were in Tobacco, Canada Southern, Consolidated Gas, General Electric, Louisville

and Nashville, Missouri Pacific, Lead, Reading, Rubber, the Cordages, and Wheeling and Lake Erie preferred. The market opened strong in February, influenced by the contract for the sale of 4-per-cent. bonds to the Belmont-Morgan syndicate, and there was a good demand for all the leading stocks, which kept the market quite strong until the second week, when sales to realize profits and some pressure by the bears caused an irregular decline, and the market was generally heavy until a few days before the close, when there was a slight improvement. The weakest stocks, comparing the opening with the closing sales, were Tobacco, Canadian Pacific, the Grangers, Central New Jersey, Chicago Gas, Lake Shore, Louisville and Nashville, Missouri Pacific, Lead, Northern Pacific preferred, the Leathers, Western Union, and the Wheelings, and the only strong stocks were Consolidated Gas and Whisky. Immediately upon the adjournment of Congress, on March 4, there was a decided improvement in the market, led by Sugar and General Electric, and followed

by the Grangers, and the tone was generally strong, with occasional sharp advances in some of the specialties until the third week, when, owing to the elimination of the short interest, prices fell off, but good support at the decline again turned the market upward, and it closed quite strong, with the most decided improvement, compared with the opening, in Sugar, Cotton Oil, Atchison, Tobacco, Central New Jersey, the Delawares, General Electric, Louisville and Nashville, Missouri, Kansas and Texas preferred, Missouri Pacific, Lead, New England, Reading, the South-erns, the Leathers, Union Pacific, the Wheelings, and Western Union. The success of the Belmont-Morgan syndicate in restoring confidence at home and abroad in the financial situation had much to do with an improvement in the market during April, and there was a good demand by Europeans for American stocks and railroad mortgages. There was an irregular fall in Sugar soon after the opening of the month, caused by the closing of some of the refineries, and the Coal shares were broken down by a raid, and the whole market was more or less unfavorably influenced by rumors of an extra session of Congress in case the income-tax law should be declared unconstitutional. But gradually the tone recovered, and after the middle of the month there was good buying of stocks for European and domestic account, and the transactions in railroad mortgages were quite large. The market closed very strong, with the greatest gains, compared with the opening, in Sugar, Tobacco, the Vanderbilt specialties, Consolidated Gas, Whisky, Louisville and Nashville, Missouri, Kansas and Texas preferred, the Grangers, Northern Pacific preferred, and



the Leathers, and the only important losses were in Central New Jersey and General Electric. In the early part of May there was liberal buying of stocks for European account, stimulated by indications of the entire success of the Bond Syndicate in their operations, and the tone was very strong until the third week, when realizing sales caused an irregular decline, and the Grangers were especially influenced by reports of damage to the growing crops, and the movement was somewhat feverish for the remainder of the month. Comparisons with the opening showed gains in Sugar, Atchison, Tobacco, Canadian Pacific, Central New Jersey, Reading, the Grangers, Whisky, Louisville and Nashville, Missouri Pacific, the Vanderbilt specialties, New England, Pacific Mail, the Southwesterns, the Leathers, the Rubbers, the Wabashes, and Western Union. In June the market was irregular and generally lower, influenced by liquidation of speculative accounts, by selling of stocks of bankrupt roads in anticipation of heavy assessments, and by the indifference of European speculators, there then being an active movement at rapidly advancing prices in South African mining shares in London. One feature was a sharp fall in New York, Susquehanna and Western, caused by a rumor that the company was financially embarrassed, and there was a heavy decline in Rubber and in the Cordage stocks, the latter due to the appointment of a receiver. The tone was fairly strong during the first week, owing to a covering of short contracts induced by an improvement in the crop situation. Then came an irregular fall, and the market was generally heavy after the middle of the month to the close, when the weakest, compared with the opening, were Sugar, Tobacco, Chicago Gas, General Electric, Pacific Mail, and Lead, while the strongest were Missouri, Kansas and Texas preferred, Northern Pacific preferred, the Wheelings and New York, Susquehanna and Western, the latter being influenced by a change in the management. The market was heavy during the greater part of July. Chicago Gas was broken down early in the month by disquieting reports, and at the same time Sugar and Tobacco were strong, but subsequently these stocks were raided, and there was also selling of Leather preferred on the announcement of a new issue of stock. The fall in these specialties more or less affected the whole market until the last week in the month, when there was a general recovery, mainly due to closing of short contracts, and, compared with the opening, the improvements were greatest in Sugar, the Grangers, Cleveland, Chicago, Cincinnati and St. Louis, Illinois Central, Louisville and Nashville, Missouri Pacific, New England, Northern Pacific preferred, Southern preferred, and Wabash preferred, while the declines were heaviest in Chicago Gas and Leather preferred. There was an irregular and a lower market during the greater part of August, influenced by the tension in exchange and by exports of gold to Europe for mereantile and other account which seemed to threaten a new issue of bonds, and the feature was liquidation in the industrials. The Grangers were, however, well supported on the favorable crop prospects. Early in the

month there was free selling of the Leathers, caused by some dissatisfaction in regard to the course pursued by the directors with respect to the dividend, and the general market was affected by rumors that large amounts of securities which had been bought by Europeans would be returned. Later there came rumors, based upon Washington dispatches, of an intended issue of bonds in case the net gold reserve should be materially reduced by withdrawals for shipment to Europe, and this caused free selling of all the active stocks, including Sugar, Tobacco, the Leathers, the Grangers, Chicago Gas, Electric, and the Southwesterns. The short interest grew quite large by the third week of the month, and although then the exports of gold were heavy the market was sharply advanced in consequence of rebuying to cover short contracts induced by the action of the Bond Syndicate in depositing gold with the Sub-Treasury to replace that which had been withdrawn for shipment to Europe, thus obviating the necessity for a bond issue, and the rally was also aided by very encouraging news from the corn belt, which stimulated purchases of the Grangers. The market was generally strong thereafter to the close, though Tobacco was sharply raided on news of the beginning of the contest with the plug-tobacco manufacturers. The most decided gains for the month, compared with the opening, were in Sugar, Atchison, Central New Jersey, Reading, Chicago Gas, Illinois Central, Louisville and Nashville, Missouri Pacific, Minneapolis and St. Louis, the Grangers, Pittsburg, Cincinnati, Chicago and St. Louis, Tennessee Coal and Iron, Union Pacific, Western Union, and Wabash preferred, while the greatest losses were in Tobacco, Erie, Leather preferred, and Wheeling common. In September the market was generally lower, influenced by continued gold exports, and also by the wild speculation in South African mining shares in London and on the Continent which threatened a disastrous collapse. At the same time the movement of Cotton was light, thus contributing to the tension in the exchange market. One feature in the first week was good buying of Reading and the other Coal shares on rumors of a speedy settlement of the coal troubles. There was also an advance in Sugar and a good inquiry for the Grangers encouraged by excellent reports regarding the condition of Corn, and at the same time there was liberal selling of Tobacco. In the second week the large exports of gold more or less affected the whole market until the end of the week, when the syndicate announced that they would continue to protect the Treasury gold reserve. During the third week rebuying to cover short contracts brought about a decided improvement in Sugar, the Grangers, and Missouri Pacific, while Tobacco was feverish and lower. One unfavorable influence in the last week was the engagement of gold for shipment to Germany, but an easier tone for exchange by the close of the week arrested further shipments of the metal, and one feature was a rise in the Coal shares, caused by an advance in the price of anthracite coal, and there was a decided recovery in Tobacco. The most important gains for the month, compared with the opening, were in To-

bacco, Canadian Pacific, Chicago Gas, the Coal shares, Whisky, and Tennessee Coal and Iron, while the losses were heaviest in Sugar, Cotton Oil, Canada Southern, the Grangers, Cleveland, Cincinnati, Chicago and St. Louis, Illinois Central, Lake Shore, Michigan Central, New York Central, Missouri Pacific, Southern preferred, Union Pacific, the Leathers, Wabash preferred, and Western Union. The market was generally lower in October, influenced by almost constant fears of an unsettling collapse in the mining share speculation in London and Paris; by the firm tone for exchange, mainly caused by an attempt to corner October deliveries of Cotton; by liquidation of long accounts; and by bearish pressure, particularly upon the industrials. There was a sharp attack upon Leather and Tobacco during the first week, and at the same time good buying of Sugar, Chicago Gas, the Coal shares, and the Grangers. Early in the second week a very firm tone for exchange had a disturbing effect, but later the market rallied on a decline in sterling, due to more liberal offerings of Cotton bills. In the third week exchange again grew strong, and then there was liberal selling of Tennessee Coal and Iron, Missouri Pacific, Sugar, Tobacco, the Leathers, Manhattan, the Coal shares, and the Grangers. In the last week the political tension in Europe and disturbing declines in South African mining shares in London and Paris had more or less of an unsettling effect upon our market, and one feature was a fall in Reading, caused by a report that an assessment of 20 per cent. had been decided upon. The weakest properties, comparing closing with opening prices, were Reading, Tennessee Coal and Iron, the Grangers, Sugar, Tobacco, Chicago Gas, the Leathers, Cleveland, Cincinnati, Chicago and St. Louis, Denver preferred, General Electric, Hocking Valley, Illinois Central, Louisville and Nashville, Manhattan, Missouri Pacific, Northern Pacific preferred, Missouri, Kansas and Texas preferred, Pittsburg, Cincinnati, Chicago and St. Louis preferred, Southern preferred, Wabash preferred, and Wheeling common. The political tension in Europe, arising out of the vigorous protests of the six powers against the failure of the Sultan of Turkey to protect the Armenians, and the collapse of the speculation in South African mining shares in London and on the Continent, involving enormous losses, were the chief disturbing factors during November, though the firm tone for exchange and the resumption of gold exports had an important influence. The closing of some of the Sugar refineries affected Sugar, and the restriction of work at tanneries unsettled the Leather stocks, while the decision of the Attorney-General of New York to proceed against the Tobacco trust caused a sharp decline in that property. There was more or less selling of the Grangers, Reading, and of Louisville and Nashville for European account, and Manhattan was broken down by decreased earnings, while Western Union was unfavorably influenced by a decision of the United States Supreme Court, which deprived the company of the privilege of contracting with subsidized roads. After the middle of the month comparatively large gold exports contributed to the decline in the market. In the last week there

was an irregular recovery, due to rebuying to close short contracts, induced by a relaxation in the political tension in Europe, and also to indications that the liquidation in South African mining shares in London was at an end. The most important losses for the month, compared with the opening, were in Tobacco, Chicago Gas, Delaware and Hudson, Whisky, Hocking Valley, Louisville and Nashville, Manhattan, Missouri, Kansas and Texas preferred, Reading, Southern preferred, Tennessee Coal and Iron, Union Pacific, the Leathers, and Western Union. The market was irregular in December with the largest trading in the Industrials, Sugar advancing, followed by Chicago Gas, while Tobacco sharply declined on news of the passing of the dividend, but later this stock advanced, and one feature in the second week was a rise in Consolidated Gas and in Leather preferred, while Reading was weak on the announcement that the plan for reorganization had been agreed upon. The tone was heavy in the early part of the third week, with pressure upon the Industrials, Chicago Gas, Reading, the Grangers, and Missouri Pacific as the feature. The irritation in England caused by the President's reference to the Monroe Doctrine in his special message to Congress caused a sharp decline in American stocks in London on Wednesday, and this was reflected in our market. The action of Congress in sustaining the President seemed to increase the irritation on the following day, and on Friday and Saturday there was a panicky fall in the market, and compared with the opening of the week prices at the close showed declines of 11 per cent. in Sugar, 15½ in Central New Jersey, 21 in Consolidated Gas, from 8½ to 15½ in the Grangers, and from 4 to 11 per cent. in other stocks. There was a much better feeling in London in the following week, based upon evidence of the determination of Congress to support the President, and also upon the conviction that there would be no serious trouble between the two countries arising out of the Venezuelan controversy, and rebuying to cover short contracts caused a recovery there, while our market was favorably influenced by the action of the Bank Clearing House Committee in deciding to issue loan certificates if necessary, and by evidence that Congress would speedily act for the relief of the Treasury. The market was very strong until toward the end of the month, when the strained financial situation, the opposition of the Interstate Commerce Commission to the trunk-line agreement, renewed selling by the arbitrage houses, local liquidation, active money, and indications of the failure of the Senate promptly to act upon the bond bill, which had passed the House, caused an irregular decline, though the undertone was better at the close of the month, influenced by reports that a bond issue for \$100,000,000 had been decided upon by the Administration, and that a syndicate had been formed to negotiate the loan. The largest losses for the month, compared with the opening prices, were in Sugar preferred, Cotton Oil, Tobacco, Atchison, the Vanderbilt specialties, the Coal shares, the Grangers, Denver and Rio Grande, Whisky, Electric, Louisville and Nashville, Illinois Central, Missouri, Kansas and Texas, Missouri Pacific, Lead, New England, Pacific Mail, Pullman, the



Southerns, Union Pacific, the Rubbers, Western Union, the Wheelings, and Tennessee Coal and Iron. The only important gains were in Sugar common, Chicago Gas, and Manhattan.

Total sales of stocks at the New York Stock Exchange for 1895 were 66,583,232 shares, against 49,075,032 in 1894; 80,977,839 in 1893; 85,875,092 in 1892; 69,031,689 in 1891; 71,282,885 in 1890; and 72,014,600 in 1889.

The following table shows prices of leading stocks at the beginning of the years 1894, 1895, and 1896:

STOCKS.	1894.	1895.	1896.
New York Central.....	98½	98	97
Erie.....	14½	10	14½
Lake Shore.....	120	134½	141½
Michigan Central.....	95½	98	97½
Rock Island.....	63	61½	67½
Northwest, common.....	98½	96½	100
St. Paul, common.....	56½	55½	68½
Dela., Lackawanna and Western.	161½	160½	160
Central New Jersey.....	112	89½	100½

The following shows the highest prices of a few of the speculative stocks in 1894, and the highest and lowest in 1895:

STOCKS.	1894.	1895.	
	Highest.	Highest.	Lowest.
American Sugar Refining Co....	114½	121½	80½
Atchison, Topeka and Sante Fé..	16	2½	½
Central New Jersey.....	117½	116½	67½
Chicago, Burlington and Quincy.	84½	92½	69
Chicago Gas.....	80	78½	49½
Delaware and Hudson.....	144½	134½	118
Dela., Lackawanna and Western.	174	174	154
Distillers' and C. F. Co.....	30½	25½	8
Erie.....	18½	15½	7½
Lake Shore.....	189	153½	134½
Louisville and Nashville.....	57½	66½	39
Manhattan Elevated Consol.....	127½	119½	95
Missouri Pacific.....	32½	42½	18½
New York Central.....	102½	104½	90
New York and New England...	33½	65½	29
Chicago and Northwestern.....	110½	107½	87½
Northern Pacific.....	6½	8½	2½
Northern Pacific, preferred.....	28½	27	10½
Omaha.....	41½	46	25½
Omaha, preferred.....	116	123½	104
N. Y., Ontario and Western.....	17½	19½	11½
Pacific Mail.....	24	34½	20
Reading.....	23½	22½	4½
Rock Island.....	72½	84½	59
St. Paul.....	67½	78½	53½
Union Pacific.....	22½	17½	4
Western Union.....	92½	95½	82½

**Foreign Exchange.**—The imports of merchandise for the year ending Dec. 31, 1895, were \$125,313,697 above those for 1894, and the exports of domestic and foreign merchandise were \$205,726 less. The excess of merchandise exports over imports for the year was \$3,269,884, against \$148,789,307 for 1894. The excess of exports over imports of merchandise, coin, and bullion for 1895 was \$137,895,457, against \$267,221,467 in 1894. Gold exports were \$72,065,687 in excess of the imports in 1895, against \$81,212,363 in 1894.

The foreign exchange market was in an abnormal condition during the greater part of the year, being influenced soon after the beginning of the Bond Syndicate operations in February by manipulation having for its object, at first, the sale of bills at high prices, to be covered later by

drafts drawn against securities bought for European account; and next, by sales at still higher prices which it was expected could be covered with cotton or grain bills. Though during three out of the five months ending with June embraced by the Bond Syndicate operations rates for exchange were at or above the normal gold-exporting point, no gold was shipped, and from the end of January to the middle of July not a dollar of gold was sent abroad, and not until the end of August was any gold shipment made by a banking house of any prominence, all of the foreign bankers loyally co-operating with the Bond Syndicate in their efforts to maintain confidence in the financial situation. After the Bond Syndicate contract was fulfilled at the end of June these bankers for some time sought to reimburse the Treasury for the loss of gold caused by shipments for profit, first transferring the metal from their reserve fund, then procuring domestic gold from the smelters, and finally by inducing some of the banks to deposit gold with the Treasury in exchange for legal-tender notes. The gold shipments which began in July ceased on Sept. 28, but they were resumed in November and continued to the end of the year, and they were large in December by reason of the strained political and financial situation, but the volume was somewhat restricted by dearer rates for money.

The nominal rates for exchange at the opening in January were \$4.88½ for sixty-day and \$4.89½ for sight. Bills were scarce and the demand for remittance was so great by reason of the unsettled currency conditions then prevailing that \$4,550,000 gold was shipped to Europe on the 5th, followed by \$3,100,000 on the 12th, by which time nominal rates had been advanced to \$4.89 for sixty-day and \$4.90 for sight. On the 16th \$850,000 gold was exported, on the 19th \$4,400,000, on the 23d \$500,000, and on the 26th \$6,550,000. On the 28th the Bank of England reduced the price of American gold coin to 76s. 3½d. per ounce, but such was the urgency of the demand to remit the metal that nominal rates for exchange were advanced to \$4.89½ for sixty-day and \$4.90½ for sight, and on the 29th \$3,562,000, and on the 30th \$2,406,000 gold were exported, making a total for the month of \$25,912,000. Some assurances of negotiations for a new issue of bonds caused a fall of half a cent in nominal rates on the morning of the 31st, but there was a recovery in the afternoon, and the market closed firm at \$4.89 to \$4.89½ for sixty-day and \$4.90 to \$4.90½ for sight. The market opened strong on Feb. 1 at the closing figures for January, but in the afternoon news that negotiations for a new bond issue had been completed caused a fall to \$4.88 to \$4.89 for sixty-day and \$4.89 to \$4.90 for sight, and engagements for \$4,950,000 gold for export on the following day were canceled and the shipment was confined to \$500,000. The market then became unsettled and lower, nominal rates falling to \$4.87½ for long and \$4.89 for short by the 12th, but about the middle of the month there was a firmer tone by reason of a demand for remittance and rates advanced by the close of the month to \$4.88 to \$4.88½ for sixty-day and \$4.89½ to \$4.90 for sight. On the 20th \$1,250,-

000, and on the 23d \$1,470,000 gold arrived from Europe, being the first importations by the Bond Syndicate under their contract with the Government. In March the market opened at \$4.88 for sixty-day and \$4.89½ to \$4.90 for sight, subsequently advancing to \$4.88½ for the former, and remaining unchanged until the 25th, when \$4.89 was posted for long and \$4.90½ for short. The urgent demand for remittance was met almost wholly with bills drawn by the Bond Syndicate until toward the close, when some bills were drawn for the purpose of loaning the proceeds in the money market, which was then active. The tone for exchange was strong at the end of the month, but though rates for actual business were half a cent higher than they were in January, when gold was being shipped, none of the metal was sent abroad, partly because of the uncertainty regarding the quality of the metal which would be supplied by the Sub-Treasury, but mainly for the reason that the Bond Syndicate were willing to meet the requirements of remitters with bills. In April nominal rates for exchange were practically unaltered at \$4.88½ to \$4.89½ for sixty-day and \$4.90 to \$4.90½ for sight until the end, when the lower rate for long-standing was advanced to \$4.89, and the market closed firm. The Bond Syndicate had entire control, and they continued to supply bills to meet the demand for remittance, drawing against United States bonds and other securities which they placed abroad. The success of the Bond Syndicate, which was pretty fully demonstrated by the end of April, seemed to restore confidence abroad in the American currency situation, and large amounts of securities were sold to Europeans during May, not only by the syndicate, but by other bankers, and consequently the exchange market was liberally supplied with bills. The market opened easy at \$4.88½ to \$4.89 for sixty-day and \$4.90 to \$4.90½ for sight, and by the 14th there was a fall to \$4.86½ to \$4.87½ for the former and \$4.87½ to \$4.88½ for the latter. At these rates the Bond Syndicate began to rebuy the bills which they had sold at high figures, thus absorbing all offerings, and the market gradually grew firmer, rates advancing by the 22d to \$4.88 for sixty-day and \$4.89 for sight, and closing firm at \$4.88 to \$4.88½ for the former and \$4.89 to \$4.89½ for the latter. The market was strong in June, influenced by a demand to remit for stocks sold for European account, which selling was encouraged by the comparatively high prices ruling for some of the properties, but though the bond contract was fulfilled by the end of the month, the syndicate retained control of the market, meeting all demands for remittance with their bills. The nominal rates opened at \$4.88½ for sixty-day and \$4.89½ for sight, promptly advanced to \$4.89 to \$4.89½ for the former and \$4.90 to \$4.90½ for the latter, and they so remained to the close. In July the market was strong, opening at \$4.89 to \$4.89½ for sixty-day and \$4.90 to \$4.90½ for sight, and advancing to \$4.90 for the former and \$4.91 for the latter, which figures were unprecedentedly high, and these rates called for correspondingly high figures for actual business, these being \$4.89 to \$4.89½ for long, \$4.90 to \$4.90½ for short, and \$4.90½ to \$4.90¾ for cable transfers.

The Bond Syndicate were prepared to meet with bills all demands for remittance, and none of the bankers made the least attempt to ship gold, but on the 13th \$200,000 of the metal was shipped by a bullion house for profit, and this was followed by \$1,000,000 by a commercial house, and by the close of the month \$1,730,473 had been exported, but the Bond Syndicate reimbursed the Treasury, depositing \$2,000,000 gold on the 27th. The market was generally firm during August, opening at \$4.90 for sixty-day and \$4.91 for sight, and rates for actual business were held at \$4.89½ to \$4.89½ for long, \$4.90½ to \$4.90¾ for short, and \$4.90¾ to \$4.91 for cable transfers. On the 23d offerings of bills drawn against gold exports caused a decline in nominal rates to \$4.89½ for sixty-day and \$4.90½ for sight, the first reduction since July 20, and the tone grew easier, closing at \$4.89 to \$4.90 for the former and \$4.90 to \$4.91 for the latter. Gold exports for the month were \$15,412,000, and for the purpose of reimbursing the Treasury the syndicate deposited \$8,500,000 gold. In September the market opened at \$4.89 to \$4.90 for sixty-day and \$4.90 to \$4.91 for sight, and the tone became easier after the middle of the month, influenced by offerings of bills against gold exports, and also by some drafts against cotton. The market closed at \$4.88 to \$4.89 for sixty-day and \$4.89 to \$4.89½ for the latter. Shipments of gold amounted to \$16,050,000, of which \$2,500,000 were sent to Germany on order, and \$2,500,000 gold was sent by one of the regular banking houses in consequence of their inability to procure bills, the syndicate having ceased to sell, but during the month they deposited \$2,500,000 with the Treasury, making with deposits not publicly announced \$16,127,432.94. In October the market opened steady at \$4.87 to \$4.88 for sixty-day and \$4.88 to \$4.89 for sight, but by the 9th there was a fall to \$4.87 to \$4.87½ for the former and \$4.88 to \$4.88½ for the latter, caused by fairly liberal offerings of cotton bills and drafts against Anaconda mining stock placed abroad, but these were promptly absorbed, gradually the market grew firmer, and it closed at \$4.88½ for long and \$4.89½ for short. No gold was shipped during the month. The market was strong during November. Rates at the opening were \$4.88½ for sixty-day and \$4.89½ for sight, but by the 6th the latter advanced to \$4.90 in consequence of higher discounts in London, and those rates ruled to the end of the month. On the 12th \$1,000,000 gold was shipped to Europe, and the exports for the month amounted to \$13,704,055, and the Treasury sold gold bars to shippers toward the close at ⅙ of 1 per cent. premium. In December rates opened at \$4.88½ for long and \$4.90 for sight. The sixty-day rate was advanced on the 5th to \$4.89 in consequence of easier discounts in London, and \$500,000 gold was sent to Buenos Ayres on the 4th and \$500,000 more on the 7th, and \$2,600,000 was shipped to Europe on the 7th. The tone grew easier in the second week and only \$1,000,000 was exported to Europe. In the following week the market was strong and \$3,180,000 was sent to Germany on Tuesday. Toward the end of the week the market was somewhat deranged by activity in money, and \$3,100,000 gold was shipped to Europe and \$300,000 to Buenos Ayres. On



the 23d and 24th the fear that legal tenders could not be obtained for exchange for gold required for shipment caused an advance in rates for sterling to \$4.89 for long and \$4.91 for short, and some bankers demanded \$4.92 for cable transfers. There was a shipment of \$1,700,000 gold on the 25th and \$2,000,000 were engaged for export on the 28th; but \$1,500,000 of this was withheld because of the probability that it could be employed to good advantage in connection with the new bond issue, negotiations for which were then pending. The only shipment of gold for the remainder of the year was \$500,000 to Buenos Ayres, making \$1,800,000 since the movement to South America began.

**Manufacturing Industries.**—The strained financial situation in January and until confidence began to grow in consequence of the operations of the Bond Syndicate, acted as an incubus upon all manufacturing industries. Early in March there was a revival, which was chiefly noticeable in iron. This was followed later on by an improvement in cotton goods, and gradually other industries became active, and one feature was a voluntary advance in wages by manufacturers all over the country, indicating a profitable business and a disposition on the part of employers to encourage their employees. During the summer and early fall the iron trade led in point of activity, and in November the production of pig iron was estimated at 217,306 tons per week. There was also a good demand for steel for railroad and structural purposes, but toward the end of the year the inquiry grew smaller and prices fell off from the highest points. The advance in cotton in October, caused by speculative manipulation of the markets, tended to check manufacturing, especially at the East. The demand for leather, which was quite noticeable in 1894, continued this year and exports were large, not only of hides, but of manufactured goods. The coal trade was more or less unsettled during the year by what appeared to be unreconcilable differences between the Reading receivers and the managers of the other companies regarding an apportionment of the output, and though earnest efforts were made in the direction of harmony, they were unsuccessful. Self-interest, however, induced all managers so to regulate production as to prevent the market from being greatly oversupplied. Increased importations of woolen goods had a depressing effect upon home manufacturers and many were compelled to close, while all sold their goods at exceedingly small profit. The sales of foreign and domestic wool in the leading markets exceeded those of 1892 by 86,000,000 pounds.

Business failures in 1895 numbered 13,197, involving \$173,196,060, against 13,885 in 1894, involving \$172,992,856. There was a decrease in the first quarter of the year, followed by a slight increase in the second and third quarters and a large increase in the last quarter, caused principally by manufacturing failures. In 7 States these suspensions amounted to 62.6 per cent of the whole, probably due to speculation in materials and overproduction.

**Money.**—Money on call, representing bankers' balances, loaned at the Stock Exchange at 80 and at  $\frac{3}{4}$  of 1 per cent. during the year. A 5-per-

cent. rate was recorded on March 1, there then being some shifting of loans caused by settlements for 4-per-cent. bonds delivered by the syndicate on that day. Toward the end of January loans were made at 3 per cent. in consequence of a temporary derangement of the market resulting from payments for dockage, wharf, and warehouse property, and during July some manipulation of the market by the Bond Syndicate, with the object of influencing exchange, brought about a temporary advance to 3 per cent., and at the same time some of the banks sought to maintain a  $3\frac{1}{2}$ -per-cent. rate. In October, while the bank reserves were low by reason of withdrawals of currency for crop purposes, 3 per cent. was again recorded for a few days, but later the rate fell to  $1\frac{1}{2}$ . During the semipanic on Dec. 20 and 21 loans were made at 80 per cent., but on Dec. 23 the Bank Clearing House decided to issue loan certificates, and the rate fell to 3 per cent. After the disbursements of January interest the market for call loans became congested, and it was difficult to place money at 1 per cent. until toward the close, when the market was partially unsettled by the payments for the warehouse property above noted, and also by the strained condition of the Treasury resulting from withdrawals of gold for export, and the market was active at  $1\frac{1}{2}$  to 3 per cent. for the remainder of the month. At the same time there was a good demand for loans for fixed periods with an insufficient supply, and the rates were advanced to 2 per cent. for thirty days, 3 for sixty days,  $3\frac{1}{2}$  for ninety days, and 4 for five to six months. There was also an advance in commercial paper to 4 per cent. for short indorsements, and to 4 to 5 for the best four to six months' single names. In February call loans ranged from 1 to 2 per cent., falling to the first-named rate after the 11th, and little was done in time contracts, but commercial paper was in good request at  $3\frac{1}{2}$  to  $3\frac{3}{4}$  per cent. for indorsement, and  $4\frac{1}{2}$  to  $5\frac{1}{2}$  for four to six months' single names. In March money on call was fairly active, ranging from 5 to  $1\frac{1}{2}$  per cent.; time loans were 3 to 4 for sixty to ninety days, and  $4\frac{1}{2}$  to 5 for four to six months, while commercial paper was in good supply with a small demand at  $3\frac{3}{4}$  to 4 per cent. for sixty- to ninety-day bills receivable, and  $4\frac{1}{2}$  to  $5\frac{1}{2}$  for four to six months' prime single names. Early in April, money on call was active at  $2\frac{1}{2}$  to 3 per cent., but it soon grew easier, and the rate fell to 1. There was only a light inquiry for time contracts, but the demand for commercial paper was urgent, and rates were  $3\frac{1}{2}$  to  $3\frac{3}{4}$  per cent. for indorsements, and 4 to 5 for four to six months' single names. Money on call was in abundant supply in May, influenced by the distribution by the Bond Syndicate of 40 per cent. of their reserve fund, and  $\frac{3}{4}$  of 1 per cent. was recorded late in the month. Quotations for time contracts were  $1\frac{1}{2}$  to 2 per cent. for thirty to sixty days, and  $2\frac{1}{2}$  to 3 for five to six months, while commercial paper was as low as  $2\frac{1}{2}$  to 3 per cent. for short indorsements, and  $3\frac{1}{2}$  to  $4\frac{1}{2}$  for four to six months' single names. During June, July, and August the market for call loans, time money, and commercial paper was practically unchanged, and loans on call were as low as  $\frac{3}{4}$  of 1 per cent. In September call loans were more

active, ranging from 1 to 3 per cent., averaging 1½ after the middle of the month in consequence of the movement of currency to the interior. Time contracts were not in urgent request, and rates were 2 per cent. for thirty days, 2½ to 3 for sixty to ninety days, 3½ for four, and 3½ to 4 for five to six months. Commercial paper was in good supply with a light demand, and rates were 4½ to 4¾ per cent. for short indorsements, and 4½ to 5½ for four to six months' single names. Low bank reserves had some influence upon money on call in October, and the range was from 3 to 12 per cent. There were liberal offerings of money for fixed periods at 2 per cent. for thirty days, 2½ to 3 for sixty to ninety days, and 3 to 4 for four to eight months. Commercial paper was of slow sale at 4½ per cent. for indorsements, and 4½ to 5½ for four to six months' single names. Money on call was in abundant supply in November, loaning freely at 1½ to 2½ per cent., and there was no material change either in time contracts or in commercial paper compared with the previous month. In December, until the end of the third week call loans were 1 to 3 per cent., while time contracts were quoted at 2½ per cent. for thirty days, 3 for sixty to ninety days, 3½ for four to five, and 4 to 4½ for six to seven months. Commercial paper was 4 to 4½ for indorsements, and 4½ to 5½ for four to six months' single names. During the semipanic above referred to money on call loaned at 80 per cent.; but in the following week confidence was restored by the prompt action of the Bank Clearing House in deciding to resort to loan certificates, and rates fell off to 3 per cent., but the market was more or less active to the end of the year, and time loans and commercial paper were nominally 6 per cent. for all dates.

The bank loans at the beginning of January were \$493,390,000. There was a reduction to \$480,438,300 by April 6, and a gradual increase to \$522,698,900, the highest, by Sept. 14. Thereafter there was a decrease to \$478,466,500, the lowest of the year, by Dec. 28. Specie reached the maximum, \$82,263,900, Feb. 9. There was a fall to \$64,471,200 April 6, due to payments for the 4-per-cent. bonds, followed by a rise to \$70,783,800 June 8, but after this there was a gradual fall to \$60,861,900, the lowest of the year, Oct. 12, followed by a recovery. The legal tenders rose to \$108,085,500 by Jan. 19, but, influenced by withdrawals by the Bond Syndicate, they fell to \$73,894,600, the lowest of the year, by March 30. Thereafter there was a gradual rise to \$119,883,500, the highest of the year, by Aug. 17, followed by a decrease to \$74,097,800 Dec. 28, reflecting the movement to the interior, and withdrawals for gold exported. Deposits fell from \$559,512,600 Jan. 26 to \$500,822,300, the lowest of the year, April 6. Then came a rise to the highest point, \$577,223,300, on Aug. 17 followed by a fall to \$501,089,300, Dec. 28. The surplus reserve was at the highest of the year, \$45,880,450, Jan. 26, and at the lowest, \$13,413,450, March 30. Then came a rise to \$41,996,575 July 27, and a fall to \$14,176,900 Oct. 12, due to the movement of currency to the interior. There was a gradual advance thereafter to near the close of the year, when there came a decline to \$15,939,675 by Dec. 28.

The condition of the New York Clearing House banks, the rates of interest, exchange, and silver, and the prices of United States bonds, on Jan. 4, 1896, compared with the same items for the preceding two years, are as follow :

ITEMS.	1894.	1895.	1896.
NEW YORK CITY BANKS:			
Loans and discounts.....	\$418,807,600	\$493,390,000	\$465,580,700
Specie .....	111,073,400	75,867,000	68,954,700
Circulation.....	13,044,400	11,405,100	13,952,900
Net deposits.....	518,524,600	552,847,800	491,614,900
Legal tenders.....	102,354,400	98,267,000	73,728,700
Required reserve.....	129,681,150	138,211,950	122,903,725
Reserve held.....	218,427,800	174,074,000	142,683,400
Surplus reserve.....	\$83,796,650	\$35,862,050	\$19,779,675
MONEY, EXCHANGE, SILVER:			
Call loans.....	1 to 1½	1 to 1½	4 to 5
Prime paper, 60 days.....	3½ to 3¾	2½ to 3	6
Silver in London, per ounce.....	31¼d.	27¼d.	30¼d.
Prime sterling bills, 60 days.....	\$4 84 to \$4 85	\$4 88½	\$4 88½ to \$4 89
UNITED STATES BONDS:			
Currency 6s, 1898.....	110 bid	108½ bid	104 bid
4½s coupon, 1891.....	95 bid*	97 bid*	96 bid
4s coupon, 1907.....	112 bid	114½ bid	109 bid

\* Extended 2 per cents.

The following is the New York Clearing House statement of totals at the beginning of each quarter of 1895 and at the end of the year :

DATE.	Loans.	Specie.	Circulation.	Deposits.	Legal tenders.
January 5 .....	\$493,390,000	\$75,867,000	\$11,405,100	\$552,847,800	\$98,207,000
April 6 .....	480,438,300	64,471,200	13,054,000	500,822,300	74,664,300
July 6 .....	513,604,700	64,496,500	13,134,000	569,873,200	110,145,500
October 5.....	510,202,200	60,937,900	14,253,600	540,099,500	90,558,500
December 28.....	478,466,500	67,114,200	13,926,700	501,089,300	74,097,800



**Railroads.**—Among the important events affecting railroad interests were the abandonment in January of the Earle-Olcott plan for the reorganization of the Reading; the Norfolk and Western was placed in the hands of receivers, and the Western New York and Pennsylvania was sold under foreclosure in February; a receiver was appointed for the Long Island Traction Company in March; the Mobile and Birmingham, the Georgia Southern and Florida, and the Toledo, Ann Arbor and North Michigan were sold under foreclosure in April; the Atchison reorganization scheme was declared effective and the Columbus, Sandusky and Hocking was placed in the hands of a receiver in June; the New York and New England was sold under foreclosure in July, and later it passed under the control of the New York, New Haven and Hartford; in September there was a conflict of authority between United States circuit court judges in the State of Washington and those sit-

indications that the Bond Syndicate would be successful in their negotiation and in restoring confidence in the currency contributed materially to an increase in railroad earnings, and trade revival was further stimulated by the expenditures by some of the companies, notably the Vanderbilt and the Pennsylvania systems, for improvements and betterments. In the spring-wheat sections the roads made important gains, while in the Southwest the Texas and Pacific and the Missouri, Kansas and Texas sustained heavy losses in the fall on account of the short crop of cotton. Taken as a whole, the railroad earnings were better in 1895 than in the previous year. Except in a few instances there were no labor troubles, and the severe punishment of President Debs, of the American Railway Union, who was imprisoned for several months for contempt of court, seemed to have a salutary effect. The following shows gross and net earnings of the principal trunk lines:

ROADS.	1889-'90.	1890-'91.	1891-'92.	1892-'93.	1893-'94.	1894-'95.
<b>PENNSYLVANIA:</b>						
Gross earnings.....	\$66,202,260	\$67,426,841	\$68,841,845	\$66,375,224	\$58,704,284	\$64,627,177
Net earnings.....	21,221,706	21,479,396	20,022,483	19,379,206	18,340,540	19,682,868
<b>NEW-YORK-CENTRAL:</b>						
Gross earnings.....	37,008,403	37,902,114	45,478,625	46,936,694	43,673,201	42,459,537
Net earnings.....	12,516,274	12,531,262	14,339,512	14,644,817	14,169,795	13,679,094
<b>ERIE:</b>						
Gross earnings.....	26,454,834	27,503,633	28,633,740	27,340,626	22,929,560	29,207,044
Net earnings.....	6,948,882	7,259,698	7,166,957	7,192,848	5,008,251	6,909,057
<b>BALTIMORE AND OHIO:</b>						
Gross earnings.....	24,412,096	24,530,395	25,877,358	26,214,807	22,502,662	22,817,182
Net earnings.....	7,445,226	7,452,162	7,444,402	7,172,825	6,941,973	7,016,139

ting in Wisconsin regarding the Northern Pacific road, and this resulted in the resignation of receivers Oakes, Payne, and Rouse, and the differences were not settled at the end of the year. The proposed issue of \$10,000,000 new stock by the Illinois Central was announced. The Central of Georgia, the Savannah and Western, the Columbus, Sandusky and Hocking, the Paducah, Tennessee and Alabama, and the Tennessee Midland were sold under foreclosure in October. The new trunk-line agreement was finally adopted in November, but later it was claimed that it was in violation of the interstate law and legal proceedings were threatened. The United States Supreme Court decided that the Union Pacific had no right to give exclusive privileges to the Western Union to maintain telegraph lines along its right of way. The Marietta and North Georgia, the Mobile and Girard, and the Port Royal and Western Carolina were sold under foreclosure. In December the Chicago and Northwestern, which reduced the dividend on the common stock to 1½ per cent. for July, announced a dividend for January of 2½ per cent. The Denver and Rio Grande declared a dividend on the preferred stock, the first since 1893, and the plan for a reorganization of the Reading was announced. The Atchison, Topeka and Santa Fé, the Montgomery and Eufaula, the Deer Creek and Susquehanna, and the Long Island Traction were sold under foreclosure. Toward the end of the year there were rumors that the Baltimore and Ohio was seriously embarrassed, but the stories were positively denied.

The revival in trade which followed the early

**FINE ARTS IN 1895.** Under this title are treated the principal art events of the year ending with December, 1895, including especially the great exhibitions in Europe and the United States, sales and acquisitions of works of art, and erection of public statues and monuments.

**Paris: Salon of the Champs Élysées.**—The exhibition of the Société des Artistes Français, in the Palais de l'Industrie (May 1 to June 30), comprised 4,565 numbers, classified as follows: Paintings, 1,692; cartoons, water colors, pastels, miniatures, enamels, porcelain pictures, etc., 1,121; sculptures, 765; engraving on medals and precious stones, 60; decorative art, 115; architecture, 244; engraving and lithography, 568.

The following are the honorary awards for 1895: Section of painting: Medal of honor, Ernest Hébert. No first-class medal awarded. Second-class medals: Joaquim Sorolla y Bastida, Léon Gustave Ravanne, Paul Lecomte, Lucien Simonnet, Ernest Joseph Laurent, Abel Boyé, René Louis Crétien, Adrien Henri Tanoux, Daniel Saubès, Albert Charles Wallet, Mario Carl Rosa, Eugène Claude. Third-class medals: Henri Bonis, Elizabeth Sonrel, Hubert Denis Etcheverry, Louis Alexandre Bouché, Jean Alfred Marioton, Emile Troncy, Gabriel Émile Édouard Nicolet, Madeleine Smith, Eugène Louis Chayllery, Auguste Prevot-Valeri, Victor Leydet, Henri Biva, Eugène Lomont, Pierre Jacques Dierckx, Mlle. Georges Achille-Fould, Jules Adler, Paul Alphonse Marsac, Victoria Dubourg, Marie Geneviève Duhem, Niels Moller Lund, William L. Picknell, William E. Lockhart, Thomas Cooper Gotch, Édouard Cré-

mieux, René Lelong, Edgard Maxence, Paul Chabas, Paul Liot, Jean Constant Pape, Gaston Charpentier Bosio, Achille Granchi-Taylor.

Section of sculpture: Medal of honor, Frédéric Auguste Bartholdi. First-class medal: Henri Désiré Gauquié. Second-class medals: Paul Loiseau Rousseau, Ernest Dagonet, Georges Marie Valentin Bareau, Alphonse Moncel, Louis Auguste Théodore Rivière. Third-class medals: Ernest Legrand, Fernand Hamar, Jules Jean Pendarès, Jean Baptiste Belloc, Paul Chevré, Charles Jean Desvergnès, Léon Bardelle, Raoul de Gontant-Biron, Paul Mélin, Charles Louis Virion, Laurent Leclaire, Jean Marie Magrou.

Section of architecture: No medal of honor and no first-class medal awarded. Second-class medals: Emmanuel Pontremoli, Albert Charles Tissandier, Louis Charles Marie Varcollier, Clément Marie Frédéric Josso, Pierre Anne Duménil, Ernest Boué in collaboration with Gabriel Héraud. Third-class medals: Laurent Farge, Guillaume Tronchet, Joseph Charles Marcel Berger, Théophile Leclerc, Félix Eugène Louis Boutron in collaboration with Xavier François Schoelkopf, Eugène Émile Esnault-Pelterie.

Section of engraving and lithography: Medal of honor, Charles Baude. First-class medals: Achille Gilbert (lithography), Jean Patricio (burin). Second-class medals: Claude Faivre (etching), Abel Mignon (burin), Leopold Desbrosses (etching), Tiburce de Mare (burin). Third-class medals: Gustave Théophile Caillaux (lithography), Paul Victor Avril (etching), Émile Crosby (wood), Marie Edmond Honer (lithography), Frédéric Émile Jeannin (etching), Edmond Duplessis (wood), Ernest Juillerat (lithography), Alfred Boilot (etching), Henry Wolf (wood), Agricol Charles Bénard (lithography).

Ernest Hébert, to whom was awarded the medal of honor of the year, exhibited "Le Sommeil de l'Enfant Jésus," a Madonna of the sentimental type shown in his "La Malaria," which originally brought him into notice.

Henri Jean Martin, his closest competitor, to whom the younger artists wished to award the medal, exhibited a large decorative frieze intended for the Hôtel de Ville, representing a painter, a musician, and a poet dreaming in a wood of pines and oranges, and listening to the music in the branches, while angels with large wings fly down to visit them. This picture, of a theme by no means new, possesses technical merits which give it great interest.

Jean Paul Laurens sent a colossal upright panel painted in distemper, intended for the Capitole of Toulouse, entitled "La Muraille, Siège de Toulouse (1218)," representing a local episode from the crusade against the Albigenes. Smiths, carpenters, masons, and other handicraftsmen, aided by men and women—indeed, by the whole population—labor earnestly to complete the wall, the defense which will check the northern invaders, typified by armed figures in the sky. In the distance stretches the great plain, crowned at the horizon by the Pyrenees.

Henri Leroux's "Tirage au sort d'une nouvelle Vestale" represents an interior with the vestal virgins seated on the left, and the candidates standing on the right, while the high priest, standing on a platform in front of the chief vestal, draws a lot from an urn on a tripod.

Jules Bréton exhibited a characteristic picture entitled "Les dernières Glanes," representing peasant women and girls bringing home the last sheaves of the harvest.

Munkacsy's "Avant la Grève" is a realistic picture of an excited assembly of workmen listening to the impassioned words of a speaker who is evidently urging a strike. Édouard Détaillé sent a large canvas representing the Prince of Wales and the Duke of Connaught, and Armand Dumaesque a battle scene with the Pyramids for a background, entitled "Bonaparte à la Bataille des Pyramides."

Among the noticeable nudes were "Triomphe de Vénus," by L. Royer; "Psyche et l'Amour," by Bouguereau; "Jeunesse," by P. F. Lamy; "Danse du Soir," by W. L. Dodge; and "Femme Couchée," by G. Popelin.

Many of the principal sculptures of the year are devoted to the augmentation of the iconography of Joan of Arc. Antonin Mercié's contribution, intended for the national monument at Domrémy, represents the maid at the beginning of her mission, when about to leave her native village. France, personified by a female figure, with her regal mantle falling from her shoulders and her armor broken, supports herself by resting one hand on the peasant girl, while pointing with the other to the distress of the kingdom. Joan, seizing with her right hand the delivering sword and raising her face heavenward, as if to invoke the aid of the Supreme Being, waves with her left a farewell to all she is about to leave.

Paul Dubois, whose equestrian statue of the maid is intended for the precinct of the Cathedral of Rheims, represents her mounted, holding in her uplifted hand a long sword. Her head and eyes are raised to heaven in a sort of trance, while she urges on her horse, which advances rapidly with mane erect and tail horizontal. This statue, which is finished with minute care, has occupied the sculptor for fourteen years.

Other statues of Joan are by M. Lanson (representing her wounded in a battle near Orleans) and by M. Allouard.

M. Bartholdi exhibited a colossal marble group, to be erected at Bâle, entitled "La Suisse secourant les douleurs de Strasbourg pendant le Siège de 1870," and M. Fremiet a large bas-relief showing a struggle between orang-outangs and a Borneo savage, in which the latter is vanquished, intended for the new Museum of Natural History in Paris.

The thousand-franc prize of the Société des Artistes Français for 1895 was awarded to François Montholon, who has no hands, but paints with the aid of a wooden hand. In 1889 he received honorable mention, and in 1894 a third-class medal.

**Paris: Salon of the Champ de Mars.**—The sixth annual exhibition of the Société Nationale des Beaux Arts (May 10 to July 10) comprised 2,399 numbers, of which 1,274 were paintings, 481 designs, drawings, etc., 190 engravings, 144 sculptures, 64 art objects, and 45 architecture.

Puvis de Chavannes exhibited the great panel painted for the staircase of the Boston Public Library, which is now in place, "Les Muses inspiratrices acclament le Génie, Messenger de Lumière." Above a sea of deep blue, under a golden



sky turning to green, advances the genius bearing light. From the top of a cliff, where the grass is verdant, the Muses, wearing long veils, fly down to meet him, bearing the golden lyre, the cithara, or the symbolic branch.

M. Lhermitte's great panel intended for the Hôtel de Ville, representing "Les Halles," is a realistic rather than a decorative work, showing the markets as they are, with their crowd of fish-women, hucksters, etc.

A large canvas by M. Roll, also for the Hôtel de Ville, represents "Les Joies de la Vie: Femmes, Fleurs, Musique." In a decorative landscape nude women are grouped amid flowers and foliage, listening to the music of viols and other instruments.

Noteworthy among the historical paintings was a large canvas by Eugène Burnand, entitled "La Fuite de Charles le Téméraire apres la Bataille de Morat." The panic-stricken flight of the fugitives, including heavy Burgundian horses and ironclad knights through somber pine forests makes a graphic picture.

The best piece of sculpture was "Le Projet d'un Monument aux Morts," by Albert Bartholomé, who has been known heretofore only by small separate works. It represents a large rectangular front, with an entrance recalling Egyptian architecture, within which are seen the backs of two figures, a man and a woman, the latter with one hand on her companion's shoulder, walking with faltering steps into eternity. On each side of the entrance, grouped in various postures, are men, women, and children, shrouded, on their way to the tomb. Beneath, in a kind of basement, is a funeral vault in which repose with clasped hands a man and a woman along with their child, and with a figure with outstretched arms kneeling beside them. It is said to be one of the most effective and affecting things in modern sculpture.

American painters were represented this year in the Salon of the Champ de Mars by Alexander Harrison, John W. Alexander, William T. Dana, R. Wilton Lockwood, Bryson Burroughs, Edward E. Ertz, Fanger Irving Conso, Albert P. Lucas, Frank Holman, Lucy Lee Robbins, Gari Welchers, Julius Rohlschoven, Albert Herter, Adèle Herter, Louis Tiffany, John La Farge, and Sarah Whitman.

**Paris: Miscellaneous.**—Among the acquisitions of pictures at the Luxembourg during the year are "La Forge" of Cormon, "Le Debarquement" of Tattegrain, "Le vieux Conquérant" of Agache, and "Le Retour du Bal" of Alfred Stevens; and of sculptures, "La Seine" of Puech, "Loin du Monde" of Allouard, "Ultimus feriens (Salammbô)" of Rivière, and "La petite Fille pleurant" of Bartholomé. Detaille's "Les Victimes du Devoir," a large canvas exhibited at the Salon of 1894, has been bought by the Government.

A statue of Meissonier, the work of Antonin Mercié, was unveiled in the Jardin de l'Infante, in the Louvre, on Oct. 25. The statue, which is in white marble, on a simple pedestal inscribed "Meissonier," represents the artist, as he was often seen by his friends, clad in a flowing *robe de chambre*, seated in his chair, palette in hand, as if judging of the effect of a picture. The work is excellent, both as a portrait and as art.

At the sale of pictures belonging to M. Édouard Kann, in May, "L'Île enchantée," by Watteau, brought 41,000 francs; "La Conversation," by the same, 10,000 fr. A portrait of Louis XV, by Boucher, was sold for 13,800 fr.; "Le Cabaret," by David Teniers the younger, 4,500 fr.; and "Sapho," by Gustave Moreau, 4,700 fr.

The collection of Madame Lyne Stephens, consisting of pictures, art objects, porcelain, etc., was sold in May. Among the best prices obtained for paintings were: Velasquez, "Portrait of Philip IV," 10,150 francs (Salamanca sale, 1867, 71,000 fr.); "Young Infanta" (Due de Morny sale, 1867), 111,800 fr.; "Infanta Maria Theresa," 20,000 fr.; Murillo, "Church Triumphant" (Pourtalles sale, 1865), 61,100 fr.; Backhuysen, "Marine," 12,000 fr.; A. Cuyt, "Prince of Orange and his Children," 52,000 fr.; Isaac van Ostade, "Village Inn," 43,200 fr.; Rubens and Breughel, "Holy Family," 14,500 fr.; Terburg, "Lady and Cavalier," 50,700 fr.; W. Van de Velde, "Marine," 17,200 fr.; "Marine," 15,100 fr.; Pater, "L'Escarpolette et la Danse," 40,000 fr.; Claude Lorrain, "Landscape," 12,600 fr.; Vigée-Lebrun, "Portrait of a Woman," 58,500 fr.; Nattier, "Portrait of a Woman," 101,400 fr.

The American Educational Art Institute, which has for its object the establishment and maintenance in Paris of an institution for the culture and promotion of art among American women, was incorporated in June. The purpose is to erect a building near the Arc de Triomphe, to contain a hundred rooms, with lecture and class rooms for the use of women studying art. The charges will be 5 francs per day, including tuition and board. The necessary capital for the institute, which owes its existence largely to the labors of Miss Matilda Smedley, has been raised, and the building is expected to be ready for occupancy early next year.

**London: Royal Academy.**—The twenty-sixth winter exhibition was devoted as usual to the old masters, especially to those of the English, Flemish, and Dutch schools. The one hundred and twenty-seventh summer exhibition was interesting, being full of attractive works, with not a few ambitious ones.

The president, Sir Frederick Leighton, was represented as usual by several canvases, the most important of which are entitled "Lacrimæ," "Twixt Hope and Fear," and "The Maid with the Golden Hair." The first shows a noble Greek maiden, in a grayish himation over a dark-blue tunic, standing near the marble pedestal of a richly sculptured funereal urn twined with ivy. She has brought a vase for libations, and a wreath of withered laurel lies at her feet. "Twixt Hope and Fear" is another single figure, a stately Greek lady in saffron robe, seated in a chair covered with gray skins, over the back of which one arm hangs, looking front, her eyes fixed in anxious meditation. "The Maid with the Golden Hair" is a half-length, life-size figure of a beautiful English girl, in a white robe and a blue ribbon, with golden hair flowing over her shoulders. She is absorbed in the perusal of a large book bound in red, which lies open in her lap. "Flaming June," another contribution by the president, is a life-size representation of a Greek damsel in semitransparent tissue of topaz yellow, coiled up asleep upon

a white marble bench under an awning in front of an opening in the wall of a classic chamber. She lies on drapery of pure red, and near her lies a black mantle, the highest note in the chromatic scheme.

Mr. Poynter exhibited an "Ionian Dance," a dancer in semitransparent pale-rose robes performing before richly clad women sitting or reclining upon a marble bench lining the wall of a Romano-Greek hall. The dancer, a lovely rose-crowned brunette, is pirouetting on the tessellated pavement to the music of a girl who leans against a column on the left and plays the double pipes.

Alma-Tadema's single contribution, a long upright canvas entitled "Spring," represents a Roman feast of flowers. A procession is passing down a street between stately buildings in Hadrian's Rome under an intensely blue June sky. The vista, lined by marbles of various colors, is partly closed by a building, from a balcony of which a lady and her attendants watch the scene, while from the roofs and the parapets on each side groups of women and girls are showering flowers on the procession below. It is a marvel of color and detail.

Sir John Millais's "Speak! speak!" his most important contribution, represents a man in high fever who has been tossing on a rude couch with a coverlet of goatskin, dreaming of his betrothed or wife and calling upon her name. Suddenly, to his disordered vision, she answers him in a luminous apparition through the olive curtains at the foot of the couch, which causes him to leap up and cry aloud the words used by Horatio in addressing the ghost of Hamlet's father, that constitute the title of the picture. "A Disciple" is another example of Sir John's power of concentrating interest in a single figure without accessories, so marvelously shown in his earlier pictures, "A Huguenot" and "A Gambler's Wife." It represents a woman clad in an ungirt tunic of deepest black, with both hands lying in her lap, looking up with lofty enthusiasm, apparently listening to the words of some impassioned orator speaking from a rostrum higher than her seat. The scene is evidently in the catacombs of ancient Rome, one of the dark galleries of which opens in the distance. A third picture, "St. Stephen," depicts the body of the murdered saint, its draperies stained with blood, found by pious men and women who are approaching in the gloom of a road on the right.

Mr. George F. Watts's finest work, entitled "Jonah," is a commanding figure of the prophet of woe, nearly full length, slightly clad in a goat skin bound about his waist, with the gourd slung at his side, his brawny arms uplifted to give effect to his angry and vehement denunciations of Nineveh. Other contributions by him were "The Outcast," representing a plump and comely infant seated at the foot of a bank of sand, and a portrait of Max Müller.

Briton Rivière sent but one picture, "Phœbus Apollo," representing the god of day, in blue robe and yellow tresses, standing with outstretched hands in his golden chariot with one foot on the pole, driving a furious team of lions and lionesses over a rocky meadow beside a blue river just lighted by the dawn. His son, H. G.

Rivière, contributed an ambitious subject entitled "Sanctuary," showing the interior of a white marble temple, where, in softened light before a gigantic statue of Juno upon a lofty pedestal, a sorely wounded man has fallen, and a whole family—men, women, and children—claim the protection of the Queen of Heaven.

"On the Sands at Boulogne" is the title given by Mr. Gow to a well-painted canvas that tells its own story. Napoleon, mounted on Marengo, attended by Soult, Berthier, Bessières, and Murat, and followed by several aids, is riding rapidly along the seashore, gazing with pale, anxious face at the British fleet, half veiled by the sea mist, that renders impracticable his invasion of England.

Stanhope Forbes exhibited "The Smithy," a forceful picture showing the smoky interior of a country farrier's shop, with the farrier shoeing a white horse, while the owner, pipe in mouth, stands at the left awaiting the conclusion of the operation.

**London: New Gallery.**—The winter exhibition was devoted to pictures of the Venetian and its allied schools, the Paduan, Mantuan, and Brescian, and comprised examples of most of the painters from Jacopo and Gentile Bellini to Pietro Longhi, who died near the close of the last century.

The summer exhibition was one of the best that have yet been opened at this gallery. The chief interest centered in the contributions of Sir Edward Burne-Jones, who sent six pictures. "The Sleeping Beauty" is the completed version of an early design of the fourth of a series exhibited several years ago. The princess is stretched on her couch, and her attendants are fewer than in the later version, while the coloration is less brilliant. "The Fall of Lucifer" depicts the rebel legion, with drooping banners and reversed arms, the lights upon their helmets, shields, and breastplates gradually growing more wan, sinking in a long, wavering line from the golden gate of heaven to the nether abyss. "The Wedding of Psyche," a lovely version of the Olympian bridal, a portrait of Mr. Gladstone's granddaughter Dorothy Drew, a full-length portrait of Lady Winsor, and another portrait, make up his contributions.

Alma-Tadema's "Love's Jeweled Fetter," hung nearly opposite the "Fall of Lucifer," attracted nearly as much attention. Two handsome damsels are seated upon a bronze couch in a sort of marble loggia, from which one looks out on the grayish-blue water of an inlet of the sea, with cliffs beyond and the houses of a town. One of the ladies, a rosy blonde with golden hair, rests her cheek on one hand and resigns the other to her companion, who is sympathetically interested in her betrothal ring, a circlet set with a great ruby. This picture was painted for the Duke of Westminster.

Sir John E. Millais exhibited "Time, the Reaper," clad in black and black-winged, who, armed with a scythe, is pressing forward to open the door of a house lighted from within, and "The Empty Cage," a three-quarters-length figure of a little girl looking sorrowfully at the cage that once held her favorite bird.

**London: Miscellaneous.**—The fourth Loan Exhibition of pictures at the Guildhall Art



Gallery, opened April 23d, was even more successful than its predecessors. With the exception of a fine Rembrandt, a portrait of his mother, from Earl Spencer's collection, and a few other Dutch pictures, the exhibition was largely made up of pictures of the modern English school, including Sir Frederick Leighton's "Garden of the Hesperides" and "Nausicaa," Sir John Millais's "Jepthah" and "Rosalind and Celia," Alma-Tadema's "Pyrrhic Dance," Stanhope Forbes's "Forging the Anchor," Mr. Orchardson's "Voltaire," and Mr. Faed's "Silk Attire."

Among the principal art sales of the year at Christie's were the Lyne Stephen's collection of paintings, porcelain, decorative furniture, etc., which brought in the total £141,000, of which the pictures represented £46,786; the James Price collection of 91 pictures, which realized £87,144; the Huth collection, £27,548; and the Ricketts's collection, £20,400. The Viscount Clifden collection of miniatures and objects of art realized about £100,000.

The highest price of the season was paid for Gainsborough's portrait of "Lady Mulgrave," one of the most captivating of this artist's pretty women, which was sold for £10,500, it is said to Mr. Cornelius Vanderbilt. This picture, from the Price collection, was bought at Christie's in 1882 for £1,120 10s., and Mr. Price is said to have refused 7,000 guineas for it in 1890. This is the highest price ever paid for a Gainsborough, the "Duchess of Devonshire," stolen in 1876, having been sold for £10,050. A second portrait of Lady Mulgrave brought £3,675, and "Lady Clarges seated at a Harp," £2,100. His portrait of Madame Le Brun, from the Duchess of Montrose's collection, sold for £2,320; and his landscape entitled "Repose" £1,470.

Sir Joshua Reynolds's portraits of Lady Smyth and her children, from the collection of the Duchess of Montrose, sold for £5,040; and his portraits of Lady Melbourne and the Hon. Mrs. Seymour Damer, from the Price collection, for £2,415 and £2,310 respectively. One of the many portraits of Kitty Fisher brought £1,365, a portrait of "Sylvia," £1,627, and the "Countess of Rothes," \$1,744.

Romney's "Emma, Lady Hamilton," one of the numerous examples, sold for £2,131; "Miss Harriet Shaw," £1,953; "Lady Urith Shaw," £1,890; "Hon. Mrs. Beresford," £1,722; "Lady Reade," £1,102; and "Mrs. Willett," £735. Hoppner's "Lord Nelson" brought £2,677; "Lady Coote," £1,890; "Lady Gordon," \$1,144; "Hon. Maria Pelham Carleton," £1,102; and "Master Russell," £1,050.

Only one great picture by Constable was sold, "The White Horse" of the Huth collection, which brought £8,925. Of Turner's pictures, the superb "St. Mark's Place, Venice," of the Price collection, is said to have passed to an American collector for £10,500. "Mortlake," one of the most luminous and harmonious of the artist's works, fetched £5,460; "Helvoetsluys," which was bought in 1863 for £1,680, brought £6,720; the "Val d'Aosta," price in 1878, £955, brought £4,200; "Going to the Ball" and "Returning from the Ball," £2,940 each; and the "Dream of Italy," £1,312.

Sir W. Beechey's portrait of Frederica Char-

lotte Catherine, Duchess of York, brought £1,260; a "Grand Marine Subject," attributed to Callcott, £2,310; David Cox's "Windsor Great Park," £1,417; Landseer's "Chevy," £5,985; Sir Thomas Lawrence's "Bezestein Bazaar of El Khan Khalil, Cairo," £1,470; John Linnell's "Visit to the Child at Nurse," £1,102; W. J. Müller's "Carnarvon Castle," £2,415; Mulready's "Idle Boys," £1,050; and John Philip's "Early Career of Murillo," £3,990.

A memorial bust of Tennyson, by Woolner, has been placed in Westminster Abbey. It is a replica of the bust without a beard, executed by the same artist in 1857, in Trinity College, Cambridge. A third bust of the poet, representing him as he appeared in 1873, with a beard, also by Woolner, will probably be placed in the National Portrait Gallery. Woolner also made a profile medallion of the Laureate in 1856, and a three-quarters medallion later.

The Burns statue at Ayr, erected in 1891, was completed in August by the placing of a panel representing the parting of the poet and Highland Mary. The three other panels on the base of the monument, put in place during the past four years, illustrate respectively "The Ride of Tam O'Shanter," "The Jolly Beggars," and "The Cotter's Saturday Night." The last panel is the gift of citizens of several of the United States, the money being raised through the exertions of Wallace Bruce, of New York, late United States consul at Edinburgh. The sculptor is George E. Bissell, of New York.

**New York: National Academy of Design.**—The Academy held its seventieth annual exhibition in April and May, as usual. The annual prizes were awarded as follows: The Thomas B. Clarke prize for the best American figure composition (\$300), to Henry Oliver Walker's "Morning Vision"; the Norman W. Dodge prize for the best picture painted by a woman (\$300), to Edith Mitchell Prellwitz's "Legend"; first Julius Hallgarten prize for the best picture painted in oils by a citizen under thirty-five years of age (\$300), to Charles C. Curran's "The Enchanted Shore"; second Julius Hallgarten prize (\$200), to George R. Barse, Jr.'s, "A Tribute to Satyr"; and third Julius Hallgarten prize (\$100) to Francis Day's "Patience."

Among the noteworthy figure pieces in the exhibition were Henry Mosler's "The Last Moments," J. G. Brown's "The Gang," Thomas Hovenden's "Jerusalem the Golden," Walter Shirlaw's "Swans," August Franzen's "Evicted," Childe Hassam's "Girl in the White Dory," Thomas Shields Clarke's "Gondola Girl," Carroll Beckwith's "Sleep," Louis P. Dessar's "Departure of Fishermen," Annie B. Shepley's "A Wild Rose," Esther Baldwin's "On the Piazza," Kenneth Frazier's "Bretonne en Deuil," and Charles L. Hinton's "Convalescent."

A portrait exhibition at the Academy in November contained a number of canvases interesting to students of art and literature. Among these were a portrait of Shelley at fourteen by Hoppner, John Keats and his two brothers by Severn, Sheridan by Gainsborough, Richard Grant White by John Alden Weir, and two of N. P. Willis by Francis Alexander and Charles Loring Elliott respectively. There were also a few examples of Reynolds and of Romney

and a good Van Dyck, and canvases by Carolus Duran, Bonnat, Sargent, Chartran, and Madrazo.

The autumn exhibition (Dec. 23 to Jan. 11) consisted of 314 works, chiefly paintings. Three fine pictures by the late George Inness occupied the place of honor in the south gallery: "Georgia Pines," "After a Spring Shower at Montclair," and "Sunset."

**New York: Society of American Artists.**

—The seventeenth annual exhibition opened on Monday, April 1. The Shaw Fund prize of \$1,500 was awarded to William M. Chase's "A Friendly Call," and the Webb prize of \$300 to Childe Hassam's "Plaza Centrale and Fort Cabenas, Havana." Noteworthy landscape contributions were "Under the Willows," by Philip Hale; "Morning—Venice," by Henry Mosler; "Naugatuck Valley," by Elizabeth Curtis; "Twachtman's Valley at Sunset," by Robert Reid; "September Sunlight," by Mr. Tarbell; "On the Cliff," by Will S. Robinson; "Pier on Niagara River," by Mr. Twachtman; and "Gloucester Harbor," by George H. Clements. Among the prominent figure pieces were J. Alden Weir's "An Autumn Stroll," Walter Nettleton's "The Cradle," Ernest L. Major's "Flight into Egypt," Kenyon Cox's "Temptation of St. Anthony," Gustave Henry Mosler's "Under the Apple Trees," and William Ernest Chapman's "Orphans." The only large piece of sculpture was Philip Martigny's "Boy."

**New York: National Sculpture Society.**

—The second annual exhibition was held in May in the galleries of the Fine Arts Building, which were decorated with palms and other trees and shrubs to represent an Italian garden, where the statues were set off by a natural background of foliage, or seen amid beds of orchids and other flowers. The Vanderbilt gallery was made into a court with low walls on each side surmounted by plants in pots, with rows of tree ferns leading to an Ionic colonnade at the end, when Mr. Niehaus's statue of "The Scraper," a nude athlete using the strigil, was seen against a screen of cypresses. In other prominent places in the gallery were J. Q. A. Ward's "Pilgrim" and his seated figures "The Statesman" and "The Warrior," on the Garfield monument at Washington, F. W. Rueckstuhl's decorative group "Mercury teasing the Eagle of Jupiter," and Thomas Shields Clarke's "Sketch for a Monument," Maemonnies's bronze statuette of "A Bacehante" and his "Diana" were displayed in the entrance hall. Olin L. Warner's "Diana," French's group "Gallaudet teaching a Deaf-mute Child," and Bissell's "Abraham de Peyster" occupied recesses in the corners.

**New York: Metropolitan Museum.**—The autumn reopening was marked by the exhibition of a loan collection of early American portraits and other pictures brought together from all parts of the country. Of about 150 early works, a large proportion were by Gilbert Stuart, Copley, Sully, and Washington Allston. By Stuart were portraits of Washington, Jefferson, Adams, Madison, Monroe, and Gen. Gates; by Sully, the portrait of Commodore Decatur and his "Musidora"; and by Allston, his "Deliverance of St. Peter." Trumbull, Pine, Inman, Leutze, and others were well represented.

The Cullum collection of casts of Greek and

Roman sculpture, the gift of the late Major-Gen. George W. Cullum, occupying two galleries on the north side of the Metropolitan Museum, was opened in November. It contains famous statues, casts of the pediments and friezes of the Parthenon, archaic Greek sculptures, etc.

**New York: Miscellaneous.**—The sixth annual exhibition of the New York Water Color Club, at the galleries of the Fine Arts Society, West Fifty-seventh Street, Nov. 10-23, compared favorably with previous exhibitions. Two hundred and ninety-two works, against 226 shown last year, were displayed in the south and central galleries, the Vanderbilt and east and west galleries being closed. Noticeable pictures were by John La Farge, Charles Warren Eaton, Caroline T. Locke, Arthur T. Kellar, Rhoda Holmes Nicholls, Mathilde de Cordoba, F. K. M. Rehn, Claude Ragnet Hirst, Harry Fenn, and Rosina Emmett Sherwood.

The Fine Arts Federation is the title of a new organization, formed at a meeting held at the Fine Arts Building, New York, on Feb. 14, intended to include all the societies interested in the fine arts. Among the societies represented were the National Academy of Design, Society of American Artists, Architectural League, National Sculpture Society, Society of the Beaux-Arts Architects, Municipal Art Society, and the New York Chapter of the American Institute of Architects. Russell Sturgis was elected president.

The Mural Painters is the name chosen by an association of professional artists, whose object is to promote the delineation of the human figure in its relation to architecture, whether rendered in pigment, stained glass, mosaic, tapestry, or other appropriate medium. John La Farge was elected honorary president, and Frederic Crowninshield and George W. Maynard vice-presidents.

The American Art Association held a dissolution sale of its collection of paintings, objects of art, etc., at Chickering Hall, in April. The Van Dyck portrait of the "Marehese di Spinola and her Little Girl" brought the highest price, \$50,000. It was bought for the Paris dealer M. Charles Sedelmeyer. Sir Joshua Reynolds's portrait of Lady Hervey sold for \$6,100, to Mrs. Susan C. Warren, of Boston. Troyon's "The Time of Milking," \$5,050, to H. O'Neil. Monet's "Melting Ice" and "Vue de Rouen" were bought by Henry O. Havemeyer for \$4,250 and \$2,600. Gainsborough's "Mrs. Beech" sold for \$4,150; Sir Thomas Lawrence's "Miss Kent," \$5,000; Rubens's "Portrait of his Father Confessor," \$5,550; Bronzino's "Portrait of Bianca Capella," \$4,100; Corot's "The Pond of Ville d'Avray," \$5,600. One hundred and eighty-five pictures brought in the aggregate \$191,787.

The collection of Gustave Reiehard, consisting of 170 pictures, sold on Feb. 21, realized \$264,935.

At the sale of the pictures of the late George Inness, on Feb. 12, 13, and 14, the total amount realized was \$108,670, distributed as follows: First night, \$35,755; second, \$35,385; and third, \$37,530. "The Coming Storm," one of the best pictures in the collection, on which an upset price of \$3,000 was put, remained unsold.

A collection of 20 pictures by the late George Inness belonging to R. H. Halstead was sold



in January at the American Art Galleries for \$31,350.

A picture by Daniel Huntington, commemorative of the laying of the first Atlantic cable, was presented on May 23 to the New York Chamber of Commerce. It represents a meeting of the projectors in Mr. Field's residence in Gramercy Park. Peter Cooper is presiding and Mr. Field is calling attention to a chart of Trinity Bay as a place for the landing of the cable. David Dudley Field, Marshall O. Roberts, Moses Taylor, Wilson G. Hunt, Chandler White, Prof. S. F. B. Morse, and others who took part in the enterprise are also represented.

**Amsterdam.**—The new Municipal Museum was opened in September with an important collection of modern masters, comprising 617 numbers. In the hall of honor were hung the "Noël" of Émile Breton, two canvases by Neuhuys, one by Israëls, one by Mesdag, and one by Therese Schwartze. In the other halls all the best painters of the modern Dutch and Flemish schools were represented.

**Berlin.**—The Fine Art Exposition, which opened on May 1 and closed on Sept. 29, was a remarkably successful one. The French Société Nationale des Beaux Arts took part in it and contributed about 150 selected works. Among the artists represented were Puvis de Chavannes, Carolus Duran, Cazin, Gervex, Jean Beraud, Courtois, Besnard, and Ary Renan. Sculptures were sent by Madame Besnard, Cordier, Fix-Masseau, Ledue, and Vallgren. Many prominent American and English painters also took part.

**Boston.**—Five of the series of paintings by E. A. Abbey for the new Public Library of Boston, which were exhibited in London and in New York at the American Art Galleries in March, are now in place in the Delivery-Room of the library. The subject is the legend of Galahad and the quest of the Holy Grail, and the five scenes depicted are: 1, The angel of the Grail appearing to the infant Galahad and his nurse; 2, the vigil of Galahad; 3, his introduction to the Knights of the Round Table; 4, the institution of the search for the Grail; 5, Galahad in the castle of Amfortas when he sees the vision of the Grail. A portion of John S. Sargent's decorative paintings illustrative of the "Religions of the World" are also in place in the staircase hall on the second floor.

**Bucharest.**—The annual exhibition of paintings, comprising about 300 numbers, was patronized by many prominent painters, especially French, among whom were Cabanel, Carolus Duran, and Henner. Native art was represented by Messrs. Mirea, Verona, Strambulesco, Alexandresco, and Sperlich, who contributed chiefly portraits. The principal landscape painters exhibiting were Messrs. Voinesco and Grigoresco.

**Dresden.**—The Fine Art Exhibition, comprising 244 paintings, 61 water colors, pastels, and engravings, and 39 sculptures, was opened on Sept. 1. Among the noteworthy pictures were a "Judgment of Paris" by Klinger, a portrait of Bismarck by von Lenbach, portraits and studies by Franz Siebert, P. Kissling, R. Krausse, and G. Lührig, and historical and *genre* pictures by H. Prell, C. Bautzer, Ad. Menzel, L. von Hofmann, and others.

**Florence.**—A long-lost picture by Botticelli, painted for Lorenzo dei Medici, entitled "Pallas Athene," has been discovered hung in an obscure corner of one of the royal reception rooms of the Palazzo Pitti, Florence. Mr. William Spence, an English artist, recognized it and communicated his discovery to Prof. Ridolfi, director of the galleries, who had it brought out and verified. A young and beautiful woman representing Pallas, in a floating white dress and mantle, her falling hair crowned with laurel and with a shield at her back, holds a long richly inlaid halberd in her left hand, the end resting on the ground, and grasps with her right hand the hair of a centaur who, though armed with bow and arrows, submits with an expression of despair. According to Vasari, the Pallas represents the wisdom of the Medici subduing disorder and violence, personified by the centaur, and inaugurating peace and prosperity. The picture is supposed to have been painted in 1480.

**Munich.**—The annual exhibition of the Society of Artists lasted from June 1 to Oct. 31. The medal of honor was awarded to Defregger. The association of Munich artists calling itself "The Secession," which is international, held its third annual exhibition at the same time.

**Pittsburg.**—The Carnegie Library, the magnificent gift of Andrew Carnegie to the city of Pittsburg, opened with appropriate ceremonies on Nov. 5, is a library, museum, art gallery, and music hall combined. The art galleries, three large connecting rooms, with excellent wall space and light, were opened with a loan collection, chiefly of the modern schools, gathered from all parts of the United States. Among the American artists were John W. Alexander, a native of Pittsburg, who contributed 25 notable pictures, Whistler, Chase, Church, Winslow Homer, Will H. Low, H. Bolton Jones, Edwin A. Abbey, and Ridgway Knight. Foreign painters were represented by Rembrandt, Corot, Breton, Troyon, Daubigny, Millet, Gérôme, Henner, Detaille, Mauve, Israëls, Cabanel, Carolus Duran, Knaus, Munkacsy, Landseer, and many others.

**Vienna.**—The annual salon, which opened on March 20, comprised 666 numbers. Among the artists who contributed pictures were Gabriel Max, Defregger, W. Firlé, who sent a beautiful triptych, L. Dettmann, H. Vogel, E. Klimt (*genre* pictures), and Volkmann, Schönleber, and Kallmorgen (landscapes). The sculptors were A. Zinsler, Tolla Certowicz, P. de Vigne, Reinitzer, Kumms, St. Sucharda, Franz Seifert, etc.

**Washington.**—The new Coreoran Art Gallery, at the corner of New York Avenue and Seventeenth Street, is ready for occupation. The building, which has a length of 250 feet on Seventeenth Street, 140 on New York Avenue, and 120 on E Street, is Neo-Grecian in style, of pure white marble on a granite basement. It has twice as much floor and wall space as the old gallery, excellent schoolrooms, and a semicircular lecture hall. The galleries are lighted entirely from the roof. The architect is Ernest Flagg, of New York.

**Monuments, etc.**—The Society of Colonial Wars celebrated on June 17 the one hundred and fiftieth anniversary of the first capture of Louisbourg by the erection at Cape Breton of a commemorative monument, a column mounted

on a square pedestal bearing the following inscription: "To commemorate the Capture of Louisbourg, A. D. 1745. Erected by the Society of Colonial Wars, A. D. 1895." The shaft is surmounted by a ball inscribed "1745." A medal also was struck in honor of the event, made from the metal of a brass cannon found by divers in the wreck of a French frigate, supposed to be "La Célèbre," sunk in the harbor. It bears on the obverse heads of Sir William Pepperell, the commander of the colonial land forces, and of Sir Peter Warren, the commander of the fleet. The reverse is a reproduction of the medal struck by Louis XV to commemorate the building of the fortress in 1720.

A colossal bronze equestrian statue of Gen. George Gordon Meade, the work of Mr. Henry K. Bush-Brown, of New York, for the Pennsylvania Monument Commission, has been put in place on the Gettysburg battlefield. It is said to be one of the best equestrian statues in the country, and is pronounced by those who knew Gen. Meade to be an excellent likeness. With the pedestal the monument is 25 feet high.

The Brooklyn Memorial Arch, in the Plaza at the entrance of Prospect Park, the corner stone of which was laid Oct. 30, 1889, has been completed by the addition of two life-size equestrian bronze statues in bas-relief, the work of the sculptor William R. O'Donovan and the artist Thomas Eakins, who has been associated with him. Gen. U. S. Grant, on a strongly modeled horse, represented with poised fore leg as if in action, occupies one side of the arch, while President Lincoln, also mounted, with bared head, apparently bowing to the multitude, occupies the other. The pose of both riders is admirable, and the panels give a fitting finish to one of the finest monuments in commemoration of those who fought and fell in the civil war. The arch stands on historic ground, near Lookout Hill, where the Continental troops fought the British regulars in the Revolution.

The Washington Memorial Arch, at the lower entrance of Fifth Avenue, New York, was formally transferred to the city on May 4.

A marble monument, a gift of the Maryland Society of the Sons of the Revolution, in memory of Lord Stirling's Marylanders, who stayed the advance of the English troops Aug. 27, 1776, was unveiled in Prospect Park, Brooklyn, on Aug. 27. The monument, which stands on Lookout Hill, overlooking the scene of the action, is a Corinthian column 39 feet high, surmounted by a bronze cannon ball. It rests on a rough granite foundation and has suitable inscriptions. The designer is Stanford White.

**FLORIDA**, a Southern State, admitted to the Union March 3, 1845; area, 58,680 square miles; population, according to each decennial census since admission, 87,445 in 1850; 140,424 in 1860; 187,748 in 1870; 269,493 in 1880; and 391,422 in 1890. Capital, Tallahassee.

**Government.**—The following were the State officers during the year: Governor, Henry L. Mitchell; Secretary of State, John L. Crawford; Comptroller, William D. Bloxham; Treasurer, C. B. Collins; Superintendent of Public Instruction, W. N. Sheats; Commissioner of Agriculture, L. B. Wombwell; Attorney-General, W. B. Lamar; Adjutant General, Patrick Houstoun;

Chief Justice of the Supreme Court, Benjamin S. Liddon; Associate Justices, R. Fenwick Taylor and Milton H. Mabry; Clerk of the Supreme Court, James B. Whitfield—all Democrats.

**Finances.**—The total debt, April 1, 1895, was \$1,232,500, comprising outstanding bonds of 1871, due Jan. 1, 1901, \$267,700; outstanding bonds of 1873, due Jan. 1, 1903, \$764,800; and interest-bearing loan, \$200,000. Of the total, various State funds held \$175,600 in 1871 bonds, \$499,200 in 1873 bonds, and \$100,000 in the loan—total, \$774,800; leaving \$357,700 in bonds and \$100,000 in the loan in the hands of individuals. Among the treasury receipts was \$38,486.06 from the United States direct tax fund, of which the Governor paid \$22,569.23 to claimants, \$303.95 for securing data from Washington, and \$23.75 for advertising, leaving in his hand a balance of \$15,589.13.

**Valuations.**—The assessed valuations of taxable property in 1894 were: Real estate and railroad and telegraph property, \$86,679,656; personal property, \$17,464,949; total, \$104,144,605. The rate of assessment was about 35 per cent. of actual values, and the total assessment of 1894 was the highest ever made.

**Banking.**—Florida had on Oct. 31, 1894, 19 national banks in operation and 6 in process of liquidation. The combined capital of the active banks was \$1,485,000; amount of United States bonds held to secure circulation, \$430,000; excess beyond required amount, \$58,750; amount of coin and coin certificates held, \$107,338.39; notes issued for circulation, \$1,155,290; redeemed, \$769,432, outstanding, \$385,858; deposits, \$4,430,793; loans and discounts, \$4,352,166; reserve required, \$664,619; and reserve held, \$902,741. There were also 18 State banks, with aggregate capital of \$435,500, deposits of \$781,638, surplus and profits of \$74,318, and total resources of \$1,830,750, and 2 savings banks with a combined capital of \$170,000; savings deposits, \$175,115; surplus and profits, \$9,372; and total resources, \$420,297.

**Insurance.**—In 1895 there were 57 insurance companies doing business in the State, of which 33 were fire companies, 13 life, and 11 miscellaneous. During 1894 these companies received in premiums \$1,239,058.43, and paid losses to the amount of \$249,795.34, leaving a net balance in their favor of \$989,263.09. Excluding 1 company which does both life and accident business, the life companies received in premiums, \$587,741.38, paid losses of \$65,063.70, and had a net balance of \$522,677.68. In six years the excess of premiums over losses of the life companies aggregated \$2,243,184.18. The large profits of these out-of-State companies have led to an agitation for the organization of local ones, that insurance interests may be kept within the State.

**Education.**—For the school year 1893-'94 the number of pupils enrolled in the schools was 96,775; average daily attendance, 64,138; male teachers, 294; female teachers, 1,629; total teachers, 2,923; average number of days the schools were kept, 97.4; and expenditures, excepting payments on debt, \$647,175. Of the total enrollment, 59,503 were white pupils and 37,272 colored; of the average daily attendance, 38,752 were white and 25,386 colored; and of the teachers, 2,151 were white and 772 colored.



**Railroads.**—On Dec. 31, 1893, there were 2,840.26 miles of single-track railroad in the State, and during 1894 6 lines constructed an aggregate of 85.95 miles, making a total on Jan. 1, 1895, of 2,926.21 miles. The capital account of the various roads showed a total investment of nearly \$80,000,000, of which over \$41,500,000 was in stock, and nearly \$32,500,000 in funded debt. The cost of the roads and equipments exceeded \$66,000,000; the gross earnings were about \$4,000,000; and the net earnings were \$1,000,000.

**Taxable Manufactures.**—In the fiscal year ending June 30, 1894, the collections of internal revenue in the 2 districts of Florida aggregated \$416,332.82, from the following sources: Distilled spirits, \$12,335.95; tobacco, \$396,553.46; fermented liquors, \$1,009.58; oleomargarine, \$5.464; and penalties, \$969.83. The same sources yielded a total in the year ending June 30, 1895, of \$470,763.03. In 1895 there were 400 single-account cigar factories, which used 2,466,811 pounds of tobacco for cigars and 3,348 pounds for cigarettes, and had an output of 147,802,909 cigars and 1,937,395 cigarettes; and 11 other factories which had a combined output of 17,182 pounds of smoking tobacco. The United States Commissioner of Internal Revenue also reported the receipt during the year of 9 claims for the sugar bounty, aggregating \$5,655.72.

**Agriculture.**—The principal crops of 1894 were: Corn, 516,242 acres, 5,214,044 bushels, value \$3,701,971; oats, 54,570 acres, 643,926 bushels, value \$392,795; potatoes, 1,422 acres, 127,980 bushels, value \$95,985; and hay, 6,719 acres, 8,264 tons, value \$134,290; total value, \$4,325,041. The cotton crop of 1894 was 45,637 bales, and that of 1895 60,000 bales.

**Phosphates.**—The phosphate industry has increased largely in the past three years, but low prices have prevailed. The direct shipments during 1893 were 319,674 tons, and during 1894 403,766 tons. Large quantities are known to have been shipped from Savannah and Brunswick, and sent to interior points by rail, and the total output of the State for 1894 was estimated at over 500,000 tons.

**Other Industries.**—The manufacturing and miscellaneous industries showed a total output valued at \$10,382,197, of which the principal were saw, planing, and shingle mills, \$5,872,708; mining, \$1,965,000; ice factories, \$408,780; fertilizer works, \$386,000; foundries and brick-yards, \$334,500; and fisheries, \$312,500. In October, 1895, reports from the orange groves indicated that no reliable estimate could be made of the orange production of the year; but it was believed that the yield would be sufficiently large to surprise those who had had the impression that all the trees in the State were destroyed by the freeze of the previous winter. There are a great many groves on the west coast that were scarcely touched by the frost, and most of those that were killed beyond hope of recovery were young trees. Comparatively few groves were abandoned. During 1895 about 8,000 acres were planted with watermelon seed, a large part of which was distributed gratuitously by the railroad companies. It was estimated that 3,000,000 marketable melons, worth 10 cents each,

would be grown from this area. Pineapple culture is being developed largely along Indian river, and there are 3 fine pineries near Orlando. In the interior the best results are obtained by growing the plants under cover.

**Political.**—In his message to the Legislature, April 1, 1895, Gov. Mitchell recommended a revision of the criminal laws and an amendment to the laws governing trials for murder that would avoid the result that a conviction of murder in the second degree can not be sustained by proof of murder in the first degree; urged the creation of a State board of equalization; referred to the Legislature complaints of the non-enforcement of laws for the protection of the fisheries; commended the quarantine and educational systems; asked to have prize fights, under whatever name, made felonies, with heavy penalties; urged an amendment of the law against lotteries that will prevent any from being located in the State; and recommended that officers giving bonds which for any reason become worthless be required to give new or additional ones.

**FOOTBALL.** From a schoolboy practice in the United States football has grown to be a national pastime almost as important as baseball. No American writer has yet given to the practice the honor said to have been attributed to it in England by the Duke of Wellington, and no football games are recorded in the civil war, although there is more than one account of a friendly mingling of the warring hosts in another American pastime, that of a snowball battle. An English writer has said that, in reality, all an Anglo-Saxon wants to make him happy, young or old, is some kind of ball to do things to. There is no better evidence of the value of football as a health-giving exercise than its quick adoption and wonderful popularity in France.

In the United States football has been deprived of some of those characteristics that make it valuable, because the American youth went in so strongly for it as to render a rough game a positively dangerous one.

The most serious trouble with football in the United States has been the difficulties over the rules. The Advisory Committee of the Inter-collegiate Football Association was not formed when Rugby football was introduced in this country. In its early days here the sport depended entirely upon the efforts of representatives whose term of office was usually only one year, and whose interest showed a bias dependent upon the immediate make-up of their respective teams. The personal bitterness sometimes arising over the interpretation of a rule in a match game was carried into these meetings and hampered the delegates. The games accordingly suffered, and the rules were not becoming better, but rather worse, when at a meeting of graduates, captains, and members of the college faculties assembled to consider the matter, it was proposed that the principal burden of rule making be transferred to a committee consisting of graduates. This action resolved itself, after much discussion, into the adoption of a new constitution for the football association, in which it was provided that all changes in the rules should emanate from an advisory committee of graduates. This commit-

tee meets and proposes any changes, and then submits them to the regular convention, which has always ratified them. A provision is made that in case the convention does not ratify the proposed alterations, they may still be carried by a majority vote of the advisory committee, failing which, they are dropped. This plan has worked well so far.

All expert football players know that, no matter how well the rules are made and laid down, their success depends largely upon the players.

The apparatus for a game of football is simple. The field is to be marked out with ordinary line lines, which for college games should inclose a space 330 feet long by 160 feet wide. While not absolutely necessary, it is customary to mark the field also with transverse lines every 5 yards, for the benefit of the referee in determining the distance the ball is advanced at every down. In the middle of the lines forming the ends of the field, the goal posts are erected, and they should be 18 feet 6 inches apart, with the crossbar 10 feet from the ground. The posts should extend several feet above the crossbar. The ball used is a round leather cover containing a rubber inner, which is inflated by means of a small air pump. The regulation ball at present is the Intercollegiate Match, No. J, adopted by the Intercollegiate Association.

Football players' costumes are of more moment with those who participate in the modern contests than they were when Tom Brown played the game at Rugby. These costumes should be of a most serviceable nature. A good football uniform costs more than any one would be willing to believe, looking at it after an afternoon of rough play. An innovation in this direction was tried by the Harvard College men two years ago in the form of leather suits. These are more expensive than the kind ordinarily in use, and on that account are little likely to become popular, though they are particularly light and good for rainy weather. The ordinary player should wear a canvas jacket. This should fit closely, but not too tightly, and lace up in front, so that it may be drawn quite tight. Some have elastic pieces set in at the sides, back, or arms; but these additions are by no means necessary. The trousers should be made of some stout material—fustian, for example—and well padded. Long woolen stockings are worn, and not infrequently shin guards by men playing in the forward line. The most important feature of the uniform is the shoes. These may be the ordinary canvas and leather baseball shoes with leather crosspieces nailed on the soles to prevent slipping. But the best ones are made entirely of leather, preferably kangaroo skin, fitting the foot firmly yet comfortably, lacing well up on the ankle, and the soles provided with a small leather spike, which can be renewed when worn down. Inside this shoe, and either attached to the bottom of it or not, as preferred, a thin leather anklet laces tightly over the foot, and is an almost sure preventive of sprained ankles. The cap, which, except in the cases of half backs and backs, does not play an important part, may be of almost any variety. Caps with visors to protect the eyes of the players in catching a long kick are the best.

Almost any kind of woolen underwear may be used; most players prefer knit jerseys. The quarter back, and sometimes the center rush, can with advantage do without the regulation canvas jacket and wear a jersey in its place.

There are 4 distinct forms of football which have attained popularity on both sides of the Atlantic. They are the Rugby game, which still flourishes in England and her colonies; the American college game; and the two principal styles, the college and the Gaelic, which attract the most attention in America. In the college and the Gaelic games the maximum and the minimum area of play is much the same. The exponents of these two styles use the round ball, while the Rugby players use an oval ball. The differences between the Gaelic and the college games are many and important. No college player, except the goal keeper, can use his hands in any movement of the game. Under the Gaelic rules the ball may be struck with the hand by any player. It may also be caught when off the ground, and the player so catching it may kick it any way he pleases, but must not throw it or carry it. To appreciate the distinction it is only necessary to watch a veteran at one style experimenting in a match under the other rules. A college recruit occasionally finds his way into a Gaelic game, and it is interesting to see him slowly realize that his superb kicking is powerless against the manipulation of the Gaels. After a few such experiences he begins to use his hands instinctively, and some followers of the game assert that there is no more deadly Gaelic player than a converted college player. A Gael, on the contrary, is palpably out of his element in a college game. He rushes at the ball with fist and foot alternately, whenever the referee relaxes his watchfulness. The scoring under Intercollegiate rules is by goals pure and simple. In the Gaelic games, while the goal is an important factor, it is not all, and a point may be scored when the ball is driven over the goal line within 21 feet of either goal post. This rule obliges the Gaelic men to cover 63 feet on the end line and accounts for the necessity of using more men in the game than are required in a college match. The charges on this extra line become terrific when "time" approaches and the value of the points is enhanced. Then the attacking forwards must show their worth, for if the defense gets time to mass its forces the line becomes impregnable.

Gaelic football has been played by the youth of Ireland for centuries, and is to-day one of the most popular sports in Ireland; matches there, as college games are here, being sometimes attended by nearly 30,000 people. The regular Gaelic team is composed of 15 players, distributed as follows: 1 goal keeper, 2 full backs, 2 half backs, 3 centers, 2 wing centers, 2 forwards, 2 wing forwards, and 1 full forward.

The college game, which is a modification of Rugby football, is the standard game in the United States. One of the first modifications of the old Rugby game in this country was an attempt to do away with some of the roughness of the English practices. A curious result of this was that the American game became even rougher than its English ancestor, and there was such an opposition developed to it that it



had to be remodeled, until now it is little enough like its parent, the Rugby game.

The game between Princeton and Harvard this year marked a new era in the sport, and was a triumph for the new rules. This contest was almost entirely free from the heavy massed plays that have done so much to discredit football. It was a free, running game, with a great deal of punting, and was consequently far more interesting to the average spectator than the old tussles with their dangerous roughness in which life and limb have both been lost. It demonstrated that football can be played in an open and gentlemanly, yet spirited and exciting fashion, without recourse to formations that take away much of the interest in the sport and render it a menace that parents and guardians of college youths do well to fear.

The set of rules got up for 1895 is that of 1894 made by the Rules Committee, composed of Alexander Moffat, of Princeton, William A. Brooks, of Harvard, Walter Camp, of Yale, Paul Dashiell, of Lehigh, and John C. Bell, of the University of Pennsylvania, improved and amended and approved by the University Athletic Club. Owing to the series of accidents that occurred as a result of mass plays in 1893, it was decided in 1894 to put a stop to this style of playing. The method used was the rule that not more than 3 men should start before the ball was put in play, nor should more than 3 men group themselves for that purpose more than 5 yards back of the point where the ball was put in play. All the elevens, however, managed in one way or another to circumvent this rule, and so in 1895 the Intercollegiate Association decided that not more than 1 man may start forward before the ball is put in play, and that not more than 3 men may group themselves back of the line. Thus it will be seen at least 7 men would have to be at the line of scrimmage until the ball is put in play, making wedge plays impracticable.

In 1894 the rules called for an umpire who had charge of the players and could disqualify any of them for violation of the rules. In 1895 the rule, as amended by Yale and Princeton, says that the officers of the game shall be an umpire, a referee, a linesman, and an assistant linesman. The important change in the rules in this regard is contained in the following lines: "Any officer may disqualify a player, subject to the approval of the umpire," and it goes on to say that the 3 leading officers shall, before the game, formulate rules governing the disposition of the ball in case it is obstructed by some person or object outside, and that the captain must abide by the rules laid down. There are 2 umpires, a referee, and a linesman in the Harvard, Cornell, and Pennsylvania games.

The following description will give the reader a good idea of how a game of Intercollegiate Association football is played: The two sides toss up, and the one winning the choice has the pick of goal or kick-off. If there is no advantage in the goals the winner may choose the kick-off, and his opponents in that case take whichever goal they like. The two teams then line up, the holders of the ball placing it upon the exact center of the field, and the opponents being obliged to stand back in their own territory at least 10

yards, until the ball has been touched with the foot. Some man of the side having the kick-off must then kick the ball at least 10 yards into the opponent's territory. Preferably, he will send it as far as he can and still have his forward reach the spot in season to prevent too great headway being acquired by the opponent's interference, but not into touch. The opponents then catch it and return it by a kick, or they run with it. If one of them runs with it he may be tackled by the opponents. As soon as the ball is fairly held—that is, both player and ball brought to a standstill—the runner must cry "Down!" and some one on his side, usually the man called the half back or center rush, must place the ball on the ground at that spot for a "scrimmage," as it is termed. The ball is then put in play again (while the men of each team keep on their own side of the ball, under the penalty of a foul for off-side play) by the snap backs kicking the ball or snapping it back, either with his foot or, more commonly, with his hand, to a player of his own side just behind him, who is called the quarter back. The ball is in play, and both sides may press forward as soon as the ball is put in motion by the snap back. Naturally, however, as the quarter back usually passes it still farther behind him to a half back or back, to kick or run with, it is the opposing side which is most anxious to push forward, while the side having the ball endeavors by all lawful means to retard that advance until their runner or kicker has had time to execute his play. It is this antagonism of desire on the part of both sides that has given rise to the special legislation regarding the use of the hands, body, and arms of the contestants. As soon as the snap back has sent the ball behind him he has really placed all the men in his own line "off-side"—that is, between the ball and the opponents' goal—and they, therefore, can theoretically only occupy the position in which they stand, while the opponents have the legal right to run past them as quickly as possible.

The game thus progresses in a series of "downs," followed by runs or kicks, as the case may be, the only limitation being that of a rule designed to prevent one side continually keeping possession of the ball without any material advance or retreat, which would be manifestly unfair to the opponents. This rule provides that in three "downs," or attempts to advance the ball, a side not having made 5 yards toward the opponents' goal or retreated 20 yards toward their own goal must surrender the ball.

There is one other element entering into the progress of the game, and that is the fair catch. This can be made from a kick by the opponents, providing that the catcher takes the ball on the fly and, no other of his own side touching it, plants his heel in the ground at the spot where the catch is made. This entitles him to a free kick—that is, his opponents can not come beyond his mark, made by heeling the catch, while he and his side may retire such distance toward his own goal as he sees fit and then make a punt or a drop, or give the ball to some one of his own side for a scrimmage, or to place the ball for a place kick. Here, again, as at kick-off, if he takes a free kick he must make an actual kick of at least 10 yards, unless the ball is stopped by

the opponents. His own men must be behind the ball when he kicks it or be adjudged off-side, unless the ball is put in play by a scrimmage, when the regular rules for scrimmage govern. When the ball goes across the side boundary line of the field it is said to go "into touch," and it must be at once brought back to the point where it crossed the line, and then put in play by some member of the side which carried it out or first secured possession of it after it went out. The methods of putting it in play are as follow: To touch it in at right angles to the touch line and then kick it, or, most commonly, walk into the field and make an ordinary scrimmage of it, the same as after a down. In this latter case the player who intends walking in with it must, before stepping into the field, declare how many paces he will walk in, in order that the opponents may know where the ball will be put in play. He must walk in at least 5 and not more than 15 yards. He must bear in mind that the conditions are considerably changed by the new rules, for now upon any first down when inside the 25-yard line, if he try a drop kick and fail to score, the ball can be brought out, not for a 25-yard-line kick-out, but only a 10-yard one—that is, his side can line up at 10 yards, so that the defenders of the goal are actually forced to kick out from almost within their own goal. The touchdown itself will count 4 points. A goal kick from field counts 5 points. In placing the ball, it is held in the hands of the placer, close to, but not touching the ground, and then carefully aimed until the direction is proper. Then, at a signal from the kicker that it is right, it is placed upon the ground, still steadied by the hand or finger of the placer, and instantly kicked by the place kicker. The ball is also taken to the center of the field if the goal be missed, although formerly the opponents could then bring it out only to the 25-yard line. There is one issue to be considered at this point, and that is, if the ball be in the possession of the defenders of the goal, or if it fall into their hands when thus close to their own goal, a player may at any time kick, pass, or carry the ball across his own goal line and there touch it down for safety. This, while it has caused two points for his opponents, gives his side the privilege of bringing the ball out to the 25-yard line and then taking a kick-out, performed like a kick-off or any other free kick, but it can be a drop kick, a place kick, or a punt. This succession of plays continues for thirty-five minutes in a regular match. Then intervenes a ten-minute intermission, after which the side that did not have the kick-off at the beginning of the match has possession of the ball for the kick-off at the second thirty-five minutes.

An Intercollegiate Association football team of 11 men is generally divided as follows: There are 7 rushers, or linesmen, who stand in a line facing their 7 opponents; a quarter back, whose place is just behind this line; 2 half backs, a few yards behind the quarter back; and finally a full back, or goal tend, whose place is a dozen yards behind the half backs. This gives the general formation, but it is of course dependent upon the plays to be made.

The result of an Intercollegiate Association match at football is determined by the number

of points scored during the 2 halves, a goal from a touchdown yielding 2 points, one from the field—that is, one without the aid of a touchdown—5 points; a touchdown from which no goal is kicked giving 4 points, and a safety giving 2 points for the opponents.

The following is a short explanation of the various terms used in describing football plays:

A *drop kick* is made by letting the ball drop from the hands and kicking it as it rises from the ground.

A *place kick* is made by kicking the ball after it has been placed on the ground.

A *punt* is made by letting the ball fall from the hands and kicking it before it touches the ground.

*Kick off* is a place kick from the center of the field of play.

*Kick out* is a drop kick or place kick by a player of the side that has touched the ball down in their goal or into whose touch-in-goal the ball has gone.

*In touch* means out of bounds.

A *fair* is putting the ball in play from touch.

A *foul* is any violation of the rules.

A *touchdown* is made when the ball is carried, kicked, or passed across the goal lines and there held either in goal or touch-in-goal.

A *safety* is made when a player, guarding his goal, receives the ball from a player of his own side and touches it down behind his goal line, or carries the ball across his own goal line and touches it down, or puts the ball into his own touch-in-goal.

A *touchback* is made when a player touches the ball to the ground behind his own goal, the impetus which sent the ball across the line having been received from an opponent.

A *fair catch* is a catch made direct from a kick by one of the opponents, provided the catcher made a mark with his heel at the spot where he made the catch.

*Interference* is using the hands or arms in any way to obstruct or hold a player who has not the ball.

The penalty for fouls and violation of the rules, except otherwise provided, is a down for the other side or, if the side making the foul has not the ball, 10 yards to the opponents.

A *free kick* is a kick taken when the opponents are forbidden by rule to advance beyond a certain point.

*Charging* is rushing forward to seize the ball or tackle a player.

**FRANCE**, a republic in western Europe, proclaimed on Sept. 4, 1870, upon the deposition of the Emperor Napoleon III, and declared permanent in the Constitution of June 16, 1875. The President of the republic is elected for seven years by an absolute majority of the National Assembly, united in Congress. The National Assembly consists of a Senate and a Chamber of Deputies. The Senate has 300 members, one third of whom are renewed every three years, the term being nine years. They are elected by commissions in the several departments and colonies. There were formerly 75 life Senators, elected by the National Assembly, but this number was reduced by death to 23 in 1893, the seats as they fall vacant being filled since 1884 by election in the ordinary manner. Deputies, of whom there are 584, are elected by districts, each *arrondissement* forming an electoral district or being divided into two in case it exceeds 100,000 in population. A bill introduced in either chamber by the Government or by private members is referred to its appropriate bureau for examination, and afterward to a commission of parliamentary initiative. All money bills must be introduced in the Chamber of Deputies.

The President of the republic is François



Félix Faure, elected Jan. 17, 1895, to succeed Jean Casimir-Périer, who resigned.

The following ministers were in office at the opening of 1895: Premier, Minister of the Interior, and Minister of Public Worship, Charles Dupuy; Minister of Finance, M. Poincaré; Minister of Justice, M. Guérin; Minister of Public Instruction, Georges Leygues; Minister of Foreign Affairs, M. Hanotaux; Minister of War, Gen. Mercier; Minister of Marine, Félix Faure; Minister of the Colonies, M. Delcassé; Minister of Commerce, M. Lourties; Minister of Agriculture, Albert Viger.

**Area and Population.**—The area of France is 204,092 square miles. The legal population on April 12, 1891, was 38,343,192, an increase of only 124,289 in five years. The population present at the taking of the census was 38,133,385, 246,811 more than in 1886. Of the total, 18,932,354, or 49.65 per cent., were males and 19,201,031, or 50.35 per cent., were females. The number of resident foreigners in 1891 was 1,130,211, and the number of French citizens abroad was 517,000. The number of employers and self-dependent persons was 7,671,398; of clerks, overseers, etc., 899,099; of workmen, 7,104,859; of dependent women, children, etc., 19,544,257; of domestic servants, 1,692,432. There were 17,435,888 persons dependent upon agriculture, 9,532,560 upon industry, 1,199,333 upon transportation, 3,961,496 upon commerce, 715,624 in the public force, 699,611 dependent upon the civil administration, 1,114,873 upon the professions, and 2,169,750 upon private fortunes. The number of marriages in 1893 was 287,294; of births, 874,672; of deaths, 867,526; excess of births, 7,146. The number of emigrants in 1892 was 5,528, of whom 2,798 went to the United States, 2,106 to the Argentine Republic and Uruguay, 155 to Chili and Peru, and 469 to other countries. The population of the principal cities in 1890 was: Paris, 2,447,957; Lyons, 416,029; Marseilles, 403,749; Bordeaux, 252,415; Lille, 201,211; Toulouse, 149,791; St. tienne, 133,443; Nantes, 122,750; Havre, 116,369; Roubaix, 114,917; Rouen, 112,352; Rheims, 104,186.

**The Army.**—The French army is organized as follows: Infantry—145 divisional infantry regiments, 18 regional regiments, 30 battalions of foot chasseurs, 4 regiments of zouaves, 4 regiments of Algerian tirailleurs, 2 regiments of the foreign legion, and 5 battalions of Algerian light infantry. Cavalry—13 regiments of cuirassiers, 30 of dragoons, 21 of chasseurs, 13 of hussars, 6 of African chasseurs, 4 of spahis, and 8 companies of remount. Artillery—38 regiments of field artillery, 16 battalions of fortress artillery, 4 fortress, 4 mounted, and 8 mountain batteries in Algeria and Corsica, 2 pontoon regiments, and 10 companies of workmen and 3 of artificers. Engineers—4 regiments of sappers and miners and 1 regiment of railroad sappers. Train—20 squadrons and 11 companies in Africa.

The effective strength of the active army, deduction being made of men in hospital or on furlough, was 524,768 officers and men. The war strength of the nation is estimated as follows: Active army and reserve, 2,350,000; territorial army, 900,000; territorial reserve, 1,100,000; total, 4,350,000. The number of trained men available is believed to be 2,500,000.

The strength of the army provided for in the budget for 1895 was 28,785 officers and 569,239 men. The strength and distribution of the various arms and services were as follow:

DESCRIPTION OF TROOPS.	France.	Algeria.	Tunis.	Total.
General staff.....	4,146	358	77	4,581
Military schools.....	3,149	....	....	3,149
Unattached.....	2,028	748	101	2,877
Gendarmerie.....	21,596	1,122	154	22,872
Garde Républicaine...	3,050	....	....	3,050
Army corps:				
Infantry.....	315,744	36,458	8,710	360,912
Cavalry.....	69,263	7,566	1,853	78,682
Artillery.....	76,547	2,697	851	80,095
Engineers.....	11,785	747	325	12,857
Train.....	8,817	3,258	936	12,506
Total army corps..	493,768	54,559	13,168	561,495
Total.....	527,787	56,787	13,500	598,024

**The Navy.**—The effective navy in 1894 was as follows: Twenty-seven armor-clad battle-ships ("Admiral Baudin," "Admiral Duperré," "Colbert," "Dévastation," "Formidable," "Courbet," "Friedland," "Hoche," "Magenta," "Marceau," "Marengo," "Neptune," "Océan," "Redoutable," "Richelieu," "Suffren," "Trident," "Brennus," "Caiman," "Indomptable," "Requin," "Terrible," "Bouvines," "Jemapes," "Valmy," "Charles Martel," and "Jauréguiberry"); 7 armored cruisers ("Bayard," "Duguesclin," "La Galissonnière," "Triomphante," "Turenne," "Vauban," and "Victorieuse"); 9 armor-clad coast guards ("Bélier," "Bouledogue," "Fulminant," "Furieux," "Onondaga," "Tempête," "Tonnerre," "Tonnant," and "Vengeur"); 8 armored gunboats ("Fusée," "Flamme," "Grenade," "Achéron," "Cocyte," "Mitraille," "Phlégeton," and "Styx"); 12 first-class cruisers ("Dupuy-de-Lôme," "Charner," "Chanzy," "Latouche-Treville," "Duquesne," "Tourville," "Sfax," "Tage," "Cecille," "Jean-Bart," "Alger," and "Isly"); 10 second- and 28 third-class cruisers; 6 torpedo cruisers; 7 first- and 5 second-class avisos; 13 aviso transports; 10 torpedo avisos; 13 gunboats; 26 sloop gunboats; 16 steam launches; 31 seagoing torpedo boats; 66 first-, 84 second-, and 41 third-class torpedo boats; 6 torpedo vedettes; 1 fleet transport; and 7 first-, 5 second-, and 6 third-class transports. The whole fleet of 444 vessels had an aggregate displacement of 608,393 tons, engines of 671,366 horse power, 3,172 guns, 190 torpedo ejectors, and 50,842 men.

The programme of construction showed the following vessels of various classes launched or on the stocks: 7 line-of-battle ships; 2 first-, 6 second-, and 2 third-class cruisers; 1 torpedo cruiser; 1 aviso transport; 2 torpedo avisos; and 52 seagoing torpedo boats.

The ironclad "Massena" was launched on July 24. The cruiser "Pothuau" was launched on Sept. 19. The torpedo-boat destroyer "Casabianca," launched on Sept. 21, was designed for a speed of 21½ knots. A new seagoing torpedo boat, the "Forban," made 31 knots in its trial trip in September. A second-class cruiser, launched at Toulon on Sept. 26, carries 4 16.4-centimetre guns, with 28 smaller ones, and 2 torpedo tubes. In the new ships preference is given to guns of small caliber, which can be

easily worked and fired with rapidity. New explosives are now used in the medium as well as in the heavy shells. A gun of 75 centimetres has been adopted, with a length 40 times the caliber, firing a bronze-coated projectile with a new powder.

Since 1891 there have disappeared from the list of the navy 57 vessels that cost 94,791,000 francs, while 31 vessels, costing 552,453,000 francs, have been added, though some of these are still in process of construction. The expenditure on the navy has increased from 41,595,000 francs (being 17.9 per cent. of the total budget) in 1891 to 52,221,000 francs (which is 21.4 per cent. of the budget) in 1896.

**Finances.**—Of the total revenue of the Government about 16 per cent. is derived from direct contributions, 63 per cent. from indirect taxes, and 21 per cent. from monopolies, posts, and telegraphs, and domains and forests. The direct imposts are a tax on land and buildings, a tax imposed in 1895 on dwellings proportioned to house rent, a tax on domestic servants, taxes on horses and carriages and on bicycles, a military tax, a tax on property held in mortmain, a trade-license tax, mining royalties, etc. The principal indirect taxes are customs, registration dues for transfers of property, obligations, etc., stamps, and the excise duty on sugar. The budget estimates for 1895 make the total ordinary revenue 3,237,503,172 francs (1 franc = 19.3 cents), of which 520,699,467 are direct taxes, 2,050,518,680 francs indirect taxes, and 678,622,820 francs the revenue from monopolies and state property. The receipts from the various sources were estimated as follow: Land tax, 118,160,025 francs; tax on buildings, 98,895,439 francs; tax on habitations, 122,297,788 francs; tax on servants, 19,183,883 francs; trade licenses, 124,119,192 francs; *premier avertissement*, 1,050,850 francs; tax on carriages and horses, 36,992,290 francs; registration, 530,149,300 francs; stamps, 168,828,500 francs; customs, 473,655,195 francs; tax on movables, 66,250,500 francs; sugar duty, 199,000,000 francs; other indirect taxes, 600,297,300 francs; tobacco *régie*, 374,577,700 francs; matches and gunpowder, 39,118,600 francs; post office, telegraphs, and telephones, 209,588,300 francs; domains and forests, 44,787,236 francs; other state property, 10,551,060 francs. Various extraordinary revenues amounted to 58,550,892 francs, receipts from exceptional sources to 29,669,402 francs, the *recettes d'ordre*, which are simply transfers in bookkeeping, to 74,447,084 francs, and the receipts in Algeria to 48,291,150 francs, making the total revenue 3,439,031,032 francs.

The total expenditure for 1895 was estimated at 3,423,893,762 francs. The expenditures under the various heads were as follow: Public debt, 1,235,347,273 francs; President, Senate, and Chamber, 13,171,720 francs; Ministry of Finance, 19,697,948 francs; Ministry of Justice, 35,133,100 francs; Ministry of Foreign Affairs, 16,403,800 francs; Ministry of the Interior, 76,585,144 francs; Ministry of War, 607,261,898 francs for ordinary, and 40,823,907 francs for extraordinary purposes; Ministry of Marine, 277,516,311 francs; Ministry of Education and Worship, 192,986,340 francs for instruction, 8,157,065 francs for fine arts, and 44,175,953

francs for worship; Ministry of Commerce, Industry, Posts, and Telegraphs, 190,607,754 francs; Ministry of the Colonies, 81,889,143 francs; Ministry of Agriculture, 43,403,560 francs; Ministry of Public Works, 233,930,864 francs; *régie*, collection of taxes, etc., 190,834,140 francs; repayments, etc., 34,116,000 francs; Algeria, 73,851,842 francs.

The public debt in 1893 was computed to amount to the capital sum of 30,611,685,122 francs. For the last ten years the increase has been slow compared with the preceding decade. The expenses of the debt for 1895 were 1,235,347,273 francs, of which 693,768,581 francs were for the consolidated debt, 248,417,489 francs for interest on, and 64,096,615 francs for amortization of the redeemable debt, and 229,064,588 francs on account of the floating debt.

**Commerce and Production.**—The general commerce in 1893 amounted to 4,951,000,000 francs for imports and 4,326,000,000 francs for exports. The total value of the special imports was 3,854,000,000 francs, in which sum 1,061,000,000 francs represent alimentary substances, 2,229,000,000 francs raw materials, and 564,000,000 francs manufactured goods. The total value of the special or domestic exports was 3,236,000,000 francs, of which 710,000,000 francs stand for alimentary substances, 784,000,000 francs for raw materials, and 1,742,000,000 francs for manufactured products. The chief articles of import and their values were: Wool, 325,000,000 francs; cereals, 307,000,000 francs; raw silk, 261,000,000 francs; oil seeds, 188,000,000 francs; raw cotton, 184,000,000 francs; wine, 183,000,000 francs; coal, 164,000,000 francs; coffee, 146,000,000 francs; skins and furs, 146,000,000 francs; timber, 124,000,000 francs; flax, 70,000,000 francs; ores, 62,000,000 francs; sugar, 58,000,000 francs; machinery, 55,000,000 francs; chemical products, 54,000,000 francs; silk goods, 51,000,000 francs; woolen goods, 50,000,000 francs; fish, 45,000,000 francs; cattle, 42,000,000 francs; table fruits, 39,000,000 francs; cotton goods, 33,000,000 francs; cotton yarn, 18,000,000 francs.

The values of the largest exports were: Woolen cloth, 279,000,000 francs; silk goods, 225,000,000 francs; wine, 189,000,000 francs; fancy articles, 154,000,000 francs; linen cloth and yarn, 131,000,000 francs; raw silk and yarn, 126,000,000 francs; raw wool and woolen yarn, 120,000,000 francs; cotton cloth, 101,000,000 francs; apparel, 119,000,000 francs; copper manufactures, 111,000,000 francs; leather, 97,000,000 francs; leather goods, 96,000,000 francs; butter and cheese, 81,000,000 francs; tools and hardware, 70,000,000 francs; animals, 68,000,000 francs; skins and furs, 62,000,000 francs; liquors, 56,000,000 francs; chemical products, 53,000,000 francs; table fruits, 45,000,000 francs; novelties, 42,000,000 francs; cereals, 37,000,000 francs; oil, 34,000,000 francs; machinery, 32,000,000 francs.

The crop of wheat in 1893 was 97,792,000 hectolitres, or 261,000,000 bushels; of rye, 22,516,000 hectolitres, or 63,000,000 bushels; of sugar beet, 60,469,000 quintals; of wine, 50,703,000 hectolitres, or 1,104,000,000 gallons. The imports of wine were 5,588,584, and the exports 1,560,242 hectolitres. The area of vineyards decreased from



2,246,963 hectares in 1875 to 1,792,816 in 1892, increased in 1893 to 1,821,155 in 1893, and then further decreased to 1,766,841 in 1894. The production of cocoons in 1893 was 9,987,110 kilogrammes; there were 300,254 kilogrammes exported, besides 2,236,092 kilogrammes of raw silk. The product of coal in 1892 was 26,178,701 tons; of pig iron, 2,057,300 tons. The imports of flax in 1893 were 83,403,473 kilogrammes; of hemp, 17,432,954 kilogrammes; of jute, 59,519,794 kilogrammes. The product of refined sugar was 512,124 metric tons.

This table shows the special trade in 1893, in francs, with the principal foreign countries:

COUNTRIES.	Imports.	Exports.
Great Britain.....	492,000,000	961,000,000
Belgium.....	395,000,000	565,000,000
Germany.....	323,000,000	336,000,000
United States.....	317,000,000	205,000,000
Algeria.....	142,000,000	185,000,000
Spain.....	208,000,000	114,000,000
Italy.....	151,000,000	128,000,000
Argentine Republic.....	167,000,000	60,000,000
Russia.....	235,000,000	.....
British India.....	217,000,000	.....
Switzerland.....	.....	173,000,000
Brazil.....	.....	75,000,000

**Navigation.**—During 1893 there were 95,005 vessels, of 20,369,305 tons, entered at French ports, and 95,744, of 20,683,943 tons, cleared. Of the former 8,259, of 4,091,847 tons, were French vessels engaged in foreign commerce or the sea fisheries, 66,362, of 6,515,461 tons, were French coasting vessels, and 20,384, of 9,761,997 tons, were foreign vessels. There were entered with cargoes 77,824 vessels, of 18,729,668 tons, and in ballast 17,181 vessels, of 1,639,637 tons, and cleared with cargoes 72,639 vessels, of 14,404,737 tons, and in ballast 23,105, of 6,279,206 tons.

The commercial navy on Jan. 1, 1894, numbered 14,190 sailing vessels, of 396,582 tons, and 1,186 steamers, of 498,841 tons. There were 69,302 sailors on the sailing vessels, and 14,374 men employed on the steamers. There were 297 sailing vessels, of 139,772 tons, and 180 steamers, of 277,337 tons, making ocean voyages, and 256 sailing vessels, of 28,149 tons, and 223 steamers, of 158,716 tons, engaged in European commerce.

**Railroads, Posts, and Telegraphs.**—There were 22,561 miles of railroads in operation in 1894. The aggregate cost of construction amounted in 1892, when there were 21,661 miles, to nearly 15,000,000,000 francs. The number of passengers carried in 1892 was 288,077,679; tons of freight, 95,712,971. The receipts were 1,194,000,000 francs, and expenses 668,740,000 francs. The railroads will eventually revert to the Government, which now owns only 2,728 kilometres out of the total length of 35,750 kilometres.

The telegraphs, which are the property of the state, had a total length on Jan. 1, 1893, of 59,693 miles, with 197,622 miles of wire. The number of dispatches sent and received in 1892 was 43,328,888, of which 33,439,947 were paid internal messages, 5,306,337 were international, 1,571,168 in transit, and 5,011,436 official. The receipts were 35,320,152 francs.

The post office in 1892 carried in France and Algeria 708,648,000 domestic and 135,918,000 foreign letters, 34,664,000 domestic and 2,075,000 foreign registered letters, 45,435,000 domestic

and 5,943,000 foreign postal cards, and 912,190,000 domestic and 125,582,000 foreign circulars, samples, etc. The receipts in France alone were 200,781,535, and expenses 153,831,678 francs.

**The Presidential Crisis.**—The parliamentary session was opened on Jan. 8, 1895. Henri Brisson, the candidate of the Radicals and Socialists, who was elected president of the Chamber Dec. 19, 1894, after the death of M. Burdeau, was now re-elected by 271 out of 281 ballots, many Moderates abstaining. This was a new rebuke to the Dupuy Cabinet for covering up financial scandals. The Chamber refused the demand of the Socialists for the liberation of M. Gérault-Richard, who had been elected to a seat by the artisan constituency of Gobelins while he was serving out a sentence for insulting the President of the republic in a newspaper article. The Socialists attacked the Government with such ferocity that Jaurès and Rouanet were suspended. The action of the Opportunists and Moderate Republicans in stifling the Panama and other investigations lest the republic should be discredited and endangered by the disgrace of some of its prominent men was the chief subject of the scornful reproaches of the Socialists and Radicals, who had the silent support and in critical divisions the votes of the Monarchists and Clericals. A judicial decision of the Council of State on the interpretation of conventions made in 1883 by M. Raynal, Minister of Public Works in the Cabinet of Jules Ferry, brought under discussion one of the most suspicious and momentous acts in the financial history of the third republic. Instead of making arrangements to take over the railroads as the property of the state upon the lapse of their charters, the Government renewed at that time its contracts with the companies on condition that they should build certain strategical and local lines and abate their rates. In the conventions with the Orleans and Midi railroads M. Raynal omitted to fix a period for the termination of the guarantee of interest. The Council of State now decided that the guarantee, under which the Government had already paid out to these particular companies more than 50,000,000 francs, and which might cost over a milliard in the aggregate, would not cease in 1914, but will run till the termination of the new contracts, fifty years later. M. Barthou, the Minister of Public Works, who thought the decision wrong in law, resigned his portfolio, but his colleagues accepted it as final. On the motion of M. Millebrand the Chamber decided, on Jan. 14, that Raynal's conduct should be investigated. An order of the day affirming the separation of the judicial and executive powers was offered for the vindication of the Government, and when a counter-resolution to reserve the rights of the state was carried, the ministers resigned in a body.

President Casimir-Périer, the conspicuous mark for most insulting vituperation in the Socialist and Reactionary sheets, was dragged into the discussion of the Southern Railway scandal, through his having been a friend of Raynal. Instead of accepting the resignations of his Cabinet he resigned his own office on Jan. 15 in a message to the Chambers, in which he said:

I never concealed from myself the difficulties of the task imposed upon me by the National Assembly. I

foresaw them. If a man does not refuse a post at the moment of danger he preserves his dignity only in the conviction that he is serving his country. The presidency of the republic, deprived of means of action and control, can derive from the confidence of the nation alone the moral force without which it is nothing. I doubt neither the common sense nor the justice of France, but the attempt to mislead public opinion has succeeded. More than twenty years of conflict for the same cause, more than twenty years of attachment to the republic and of devotion to the democracy, have not sufficed either to convince all Republicans of the sincerity and ardor of my political faith or to disabuse the adversaries who believe, or affect to believe, that I shall become the instrument of their passions and their hopes. For six months a campaign of slander and insult has been going on against the army, the magistracy, Parliament, and the irresponsible head of the state, and this liberty of fanning social animosities continues to be styled liberty of thought. The respect and the ambition which I cherish for my country do not allow me to admit that the country's best servants and he who represents it in the eyes of the foreigner may be insulted daily. I will not consent to bear the weight of the moral responsibility resting upon me in the condition of powerlessness to which I am condemned.

I shall, perhaps, be understood when I affirm that constitutional fictions can not silence the dictates of the political conscience. Perhaps in resigning my functions I shall have marked out the duty of those who are mindful of the dignity of power and of the good name of France in the world. Invariably true to myself, I remain convinced that reforms will be effected only with the active co-operation of a Government resolved on insuring respect for the law, on enforcing obedience from its subordinates, and on rallying them all in common action for a common work. I have faith, notwithstanding the sadness of this hour, in a future progress and social justice.

The Congress for the election of a new President was held on Jan. 17. M. Waldeck-Rousseau was the public choice of the Moderate Republicans, but on the first ballot he received only 185 votes, while Félix Faure, who had been proposed a week before as a competitor of Brisson for the presidency of the Chamber, got 244 votes, and Henri Brisson 338. On the second ballot, Waldeck-Rousseau withdrawing, M. Faure was elected by 438 votes, against 363 given to M. Brisson. The President-elect accepted the office with a speech in which he said :

I cease from now to belong to a party, in order to become the arbiter of all parties. It is in this spirit that without distinction of the various shades of Republican opinion I appeal for aid to all the representatives of the country. We shall always meet on common ground in any work inspired by love of country, devotion to the republic, anxiety for justice, and solicitude for the lot of all our fellow-citizens, especially the lowly and humble.

**The Ribot Ministry.**—Léon Bourgeois, the chief Radical exponent of the policy of Republican concentration, was intrusted with the task of forming a ministry. He sought the co-operation of M. Poincaré and other Moderates, but the progressive income tax, which with a general amnesty formed his programme, proved a stumbling-block. On Jan. 25 the President turned to M. Ribot, who on Jan. 27 completed a Cabinet containing some Moderate Radicals and differing little in general political cast from the fallen Cabinet. It was composed as follows: President of the Council and Minister of Finance, Alexandre Félix Ribot; Minister of the Interior, Georges Leygues; Minister of Foreign Af-

fairs, G. Hanotaux; Minister of Justice, Jacques Ludovic Trarieux; Minister of Public Instruction and of Worship, R. Poincaré; Minister of Commerce, André Lebon; Minister of Agriculture, Dr. Gadaud; Minister of the Colonies, Émile Chautemps; Minister of Public Works, M. Dupuy-Dutemps; Minister of War, Gen. Zurlinden; Minister of Marine, Vice-Admiral Besnard.

In his message to the Chambers President Faure, speaking of himself as a representative of the industrious democracy whom the National Assembly had elevated as a tribute of honor to quiet labor that is constantly accomplishing something for the greatness of the fatherland, vaunted the perfect calm and unshaken confidence that marked the transmission of powers, demonstrating again that France feels herself mistress of her destinies under the protection of republican laws. He pledged himself to watch vigilantly the observance of the constitutional laws and see to the regular and loyal working of the parliamentary system, and spoke of the general task of the Legislature and the immediate programme of the Government as follows :

France does not confuse barren agitation with the incessant pursuit of progress. Strong in her probity, proud of her thrift, accessible to every generous idea, she is a slave of no preconceived theory, but is interested in all the great problems which throughout the world are exciting the attention of men's minds. To seek solutions of these problems so as to adapt them to the national genius, to our traditions, to our habits and customs, is the essential work that we have to pursue. All men of good will will unite in a single idea of conciliation, pacification, and social justice in order to secure by general concord and republican fraternity the continuous development of material and moral well-being. Contemplating with a just pride her army and navy, sufficiently strong to have a right to proclaim her love of peace, having won sympathies which are precious to her and to which she remains faithfully attached, France, in a fresh effort toward progress, is preparing to invite the nations to a great festival of labor, which will be a worthy crown to the century which is about to close. In literature, art, and science, in industry, commerce, and agriculture, everywhere is displayed the fruitful activity of the country. In the compact ranks of universal suffrage, as in the political world, the same ardor must unite all who have at heart the luster of the French name. It is to this union, to this common effort for the power and glory of the French republic, that I invite you, certain that I am the mouthpiece of our entire democracy.

**Legislation.**—The first bill presented by the Government was one granting amnesty for all persons under sentence for violating the press laws and laws of public meeting and association or for crimes against public security, electoral offenses, or offenses connected with strikes. This bill, which the Chamber had rejected while insulters of President Casimir-Périer were being frequently convicted, was now passed with only 7 contrary votes and went through the Senate without opposition. The Abbé Lemire seized the opportunity to request the restoration of their stipends to priests who had incurred disciplinary measures for political indiscretions, to which the Chamber agreed.

To satisfy the Radical allies of the Government, who carried a resolution in favor of imposing a part of the new taxes upon religious



corporations, a law was enacted on April 16 that places a special tax on the property of religious congregations. Unauthorized religious communities were further subjected to a differential duty. The impost is only  $\frac{3}{10}$  of 1 per cent. on the gross value of the property, but the congregations are required to furnish stamped declarations of their property in each commune, which makes the tax in some cases almost 10 per cent. of their incomes. Most of the clergy were disposed at first to resist the law, but the sentiment in favor of submission finally prevailed. M. Goblet, leader of the Socialist-Radicals, obtained 191 votes on July 12 for a resolution calling upon the Government to prepare measures for the separation of the church and the state. The order of the day sustaining the Government by 294 votes to 193 expressed confidence in the firmness of the Government to secure the observance of the law and respect for civil authority and to maintain the rights of the state.

The Socialists in the Chamber made the most of the case of Gérault-Richard and that of Mirman, a Deputy, who resigned a professorship in order to fulfill his duties as a legislator, and by doing so forfeited his immunity from military service and was drafted into the army and thus prevented from sitting in the Chamber. A law was passed making any person who has not completed his service in the army ineligible. In case one is elected, however, under similar circumstances to those of Mirman's election, he is to be assigned to the reserve and not deprived of his seat. A bill was prepared by the Minister of Justice that allows persons employed in the tobacco and match factories of the state to form labor unions and exercise all the rights of ordinary workmen, but forbids strikes among the employees of arsenals and state railroads. The latter, being exempt from military service, were required to forego their rights in the interest of national defense. The employees in the match factories immediately availed themselves of the right to strike, and M. Ribot recognized their union. Their grievances were investigated and an advance in the wages from 5 francs 10 centimes to 5½ francs a day was agreed upon by a joint delegation. The Socialists submitted a bill by which illegitimate children would have the same rights to inheritance as legitimate ones. They urged in support of the bill that illegitimate births are steadily increasing, being 8·7 per cent. of the total number, against 7 per cent. in 1872. A proposal of Abbé Lemire, a Christian Socialist, to simplify the conditions of marriage by dispensing with the consent of grandparents when the parents are dead was agreed to, but a motion to dispense with the consent of parents when the bridegroom is twenty-five years old and the bride twenty-one was lost by 308 votes to 238.

The Radicals and Socialists charged that the committee appointed to investigate Raynal was selected for the purpose of stifling the inquiry. Only one Extremist was placed on the committee, and he refused to serve.

When the Government was questioned on June 1 in regard to the syndicates of the Southern Railroad and charged with screening scandals, M. Trarieux said there would be no prosecutions. Ex-Premier Rouvier and Jules Roche,

an ex-minister that had participated in the profits of the syndicates of Baron Reinach, who was said to have used 1,231,000 francs of the company's money to bribe legislators, asserted that they had a right to speculate in syndicate shares. A resolution expressing confidence in the Government's insuring the action of justice against financial scandals before statutory limitation could be pleaded was carried after the rejection of a vote of censure by only 25 majority. Only 10 votes were given against a resolution that legislators ought to hold aloof from financial syndicates. After the close of the session Félix Martin, manager, and 2 directors, Bobin and André, were arrested on the charge of misappropriating the funds of the Southern or Riviera railroad. Senator Edmond Magnier, editor of the Paris "Événement," was also committed for trial, being accused of accepting a bribe of 87,500 francs, but he evaded arrest. The railroad officials were ultimately acquitted. Senator Magnier afterward returned, surrendered himself, and was tried and convicted and condemned to one year's imprisonment.

Earlier in the year another scandal affecting Parisian newspapers came out in the courts. A number of journalists, including Portalis, editor of the "Dix-neuvième Siècle," and Canivet, president of the Press Association and editor of the "Paris," were prosecuted for blackmailing proprietors of gambling clubs, and some of them, including Camille Dreyfus, an ex-Deputy and editor of the "Nation," were sentenced to imprisonment for one or two years. Dreyfus obtained bribes from bookmakers by threatening to bring in a bill to suppress their business.

The council of the Legion of Honor resigned because the Chamber of Deputies on July 13 passed a unanimous resolution blaming them for paying too little attention to the decisions of the courts. The occasion of the censure was that they had not stricken the name of M. Eiffel from the list of the order after he was convicted of misappropriation of funds.

Bills for reafforesting mountains in order to prevent inundations were approved. A resolution in favor of an international treaty of arbitration with the United States was passed by the Chamber almost unanimously.

A bill was passed giving to all persons who have been insured in benefit societies or the Caisse Nationale for fifteen years a minimum pension of 360 francs from the age of seventy. For these supplementary labor superannuation pensions a sum of 2,000,000 francs was inserted in the budget.

The Minister of War proposed to raise the total effectives of the army to 540,000 men and restore the minimum fixed by the law of 1875, namely, 125 for a company, 150 for a squadron, and 108 for a battery. The creation of a colonial army has met with approval, and to prepare for it the budget committee decided to reduce the Zouaves by 3,000 men and the Algerian sharpshooters in proportion, such large forces being no longer needed in Algeria. Gen. Mercier's plan of passing men rapidly through the army has been abandoned, and the permanent army is raised nearly to the same strength as that of Germany. As the outcome of the affair of Capt. Dreyfus, who was degraded from the army and sentenced

to transportation for revealing military secrets to a foreign government, a bill on treason-espionage was passed on July 13 without debate. It establishes the penalty of death for the treasonable revelation of plans, documents, or information relating to the defenses of the country or its dependencies or its security against external enemies. Penalties of from three months' to five years' imprisonment, with a fine and loss of civil rights, were enacted for persons who for journalistic or other professional purposes obtain possession of or publish such papers, plans, or information.

The army estimates are increased in the budget of 1896 by 11,000,000 francs, and the navy expenditure by 1,600,000 francs. The military expenditure of the colonies has nearly trebled in ten years, owing chiefly to Tonquin and the Soudan. It is now 60,000,000 francs, while the requirements for civil expenses were estimated at 23,000,000 francs, on which a saving of 3,000,000 francs was proposed by the Budget Committee. Out of a total expenditure of 3,448,000,000 francs 2,795,000,000 francs do not admit of retrenchment, being absorbed by interest on the debt, cost of collecting taxes, and the army and navy. Of the remaining 650,000,000 francs 195,000,000 francs are required for education and 131,000,000 francs for public works. M. Ribot saw no chance for retrenchment except by reducing the civil service, which could not be done in a hurry.

The budget for 1896 introduced new taxes to provide 56,000,000 francs. Differential or progressive succession duties were expected to yield about 25,000,000 francs; a progressive duty on horses and carriages to give 1,000,000 francs; an increase from  $1\frac{1}{2}$  to 2 per cent. in the stamp duty on foreign companies' bonds, the duty on foreign Government bonds remaining 1 per cent., to yield 14,000,000 francs; a higher duty on full packs of playing cards, with precautions against the sale of second-hand packs, to add 1,200,000 francs; a tax on servants, farm and factory hands being exempted, ranging from 30 per cent. for 1 male servant up to 90 francs for 4 or more, with half these rates for female servants, to produce 10,000,000 francs; and the assimilation of the customs duties of Algeria to those of France to yield an extra 4,000,000 francs. M. Ribot proposed to remodel the liquor duties, but the Chamber took the matter out of his hands by voting the project of M. Vallé to do away altogether with the large revenue from hygienic beverages, such as wine, cider, and perry, and cover the deficit thus caused by an increased tax on alcoholic beverages and by a monopoly of the rectification of liquors. The tax on alcohol is raised to 275 francs a hectolitre. The change, advocated by the Socialists or Radicals, found so much favor that the Prime Minister had to accept it or court defeat. It was adopted by 394 votes to 130.

M. Cavaignac's proposal for an income tax was postponed, and the principle of the tax was rejected on the demand of the Premier by 284 votes to 233. The session was closed on July 14.

**The Bourgeois Cabinet.**—When the Chamber reassembled on Oct. 22, the glass-makers' strike at Carmaux furnished the Socialists with material for interpellations. A glassblower named Baudot, who was a candidate for the departmental council, left work to attend a

congress of his trade and was discharged. His fellow-workmen struck, and the manager of the glass works retorted with a lockout, dismissing 10,000 men. Troops were sent to preserve order. The strikers rejected the offer of the prefect of the Tarn to arbitrate, and kept up the strike when the manager, M. Resseguier, started the works in the beginning of October and offered to take back all except the leaders. Gendarmes were sent to Carmaux to prevent intimidation.

The Ribot Cabinet seemed to be strengthened by the results of the departmental elections, which took place on July 28. Not only had the Socialists generally failed in their novel and determined efforts to win seats, but the Moderate Republicans had gained at the expense of the Conservatives. There were elected to the departmental councils 894 Moderates, 263 Reactionaries, 181 Radicals, 74 Republicans, and 26 Socialists.

The breakdown of the transport service of the Madagascar expedition and various other evidences of administrative incompetence, with tales of speculation, gave the Opposition another weapon. The attitude of the Government on the income-tax question was not in harmony with the prevailing sentiment of the Chamber. What was most damaging was the suspicion entertained in various parts of the house regarding the complicity of leading politicians of the dominant faction in corrupt transactions, which was kindled anew by the course of the Government in regard to the Southern Railroad scandals. In the trial evidence seemed to be withheld. The Socialist Rouanet, in an interpellation on Oct. 28, accused the Government of making Magnier a scapegoat, while shielding worse culprits. His motion that the Chamber, considering that it is proper to interdict its members from taking part in the operations of financial syndicates, is resolved to throw complete light upon the affairs of the southern railways, and invites the Minister of Justice to fulfill all his responsibilities, was carried against the arguments of Ribot and Trarieux by 310 votes to 211. The ministers immediately resigned.

President Faure summoned M. Bourgeois, the leader of the Radicals, who could not induce M. Hanotaux to retain the portfolio of Foreign Affairs, but was able to make up a list drawn entirely from the Radical party. The new ministry, completed on Oct. 31, was composed as follows: President of the Council, and Minister of the Interior, Léon Bourgeois; Minister of War, Godefroy Cavaignac; Minister of Marine, M. Lockroy; Minister of Foreign Affairs, Senator Berthelot; Minister of Finance, Paul Dumour; Minister of Justice, M. Ricard; Minister of Public Instruction and Worship, M. Combes; Minister of Commerce, M. Mesureur; Minister of Agriculture, M. Viger; Minister of the Colonies, Pierre Paul Guieyessé; Minister of Public Works, M. Guyot-Dessaigne. M. Bourgeois had been Minister of Instruction and Minister of Justice, M. Lockroy Minister of Commerce and Minister of Instruction, Dr. Viger Minister of Agriculture in the Cabinet, of Dupuy and Casimir-Périer, and Prof. Berthelot Minister of Education in the Cabinet of M. Goblet.

M. Bourgeois in his declaration of policy promised a supplementary inquiry into the scan-



dal of the southern railways, and a full disclosure of all documents so as to enable the Parliament to pronounce political and moral judgment. He intended to bring in a bill prohibiting Senators and Deputies from holding the office of director in any company that has a contract with the Government. It was also proposed to modify the law so as to make the preliminary examinations public. A bill for the imposition of a progressive inheritance tax was promised, with a general income tax that would correct entirely the antidemocratic inequalities in the fiscal system. Measures were also contemplated for regulating the sale and use of intoxicating drinks, providing that no taxes should be collected from hygienic fluids. The Government would present bills relating to co-operative insurance, and desired to organize a system of workingmen's pensions. A definite settlement of the relations between church and state would be prepared. The economic *régime* was not to be disturbed, but measures would be introduced to check certain international speculations and to regulate international dealings in the stocks of gold mines.

In earnest of the intention to carry out to the end a policy of purification and expose the secrets of corrupt financial legislation the Cabinet removed M. Christophle as governor of the *Crédit Foncier*, and procured the arrest in London and applied for the extradition of Émile Arton, agent of the Panama corruptionists. To retain the support of the Colonial party the Cabinet was willing to modify the Madagascar treaty so as to prepare the way for annexation and colonization, and also to create a distinct colonial army. The Socialists, besides the graduated income tax, demanded a law of compulsory arbitration, and the prompt settlement of the Carmaux glass-workers' strike. The Prime Minister promised to prepare an arbitration bill, but was not prompt enough to satisfy the Socialists or the Chamber, which on Nov. 21, by a vote of 254 to 251, resolved to consider the bill of M. Jaurès.

**Anarchist Attempt.**—Baron Alphonse de Rothschild, besides being the head of the great banking house and the financier of operations for the investigation of which there was a public clamor, attracted the wrath of the Anarchists and the Anti-Semites by his denunciation of their principles. A registered letter addressed to him proved to be an infernal machine when it was opened, on Aug. 23, by his secretary, M. Jodkowitz, who was badly hurt by the explosion. Two weeks later a young man named Victor Bouteille, son of a mayor under the Commune, entered the bank in the Rue Lafitte carrying a rudely constructed bomb. He was instantly seized by the detective, who got possession of the bomb and prevented the Anarchist from cutting his own throat with a razor.

**Metric Congress.**—The International Metric Congress, which meets every five years, was opened at the Foreign Office in Paris on Sept. 4. The ratio between the official platinum metre and the wave-length of light was confirmed. The equations of the Peruvian and the Prussian fathom were established, and the equation of the English yard was considered. Since the last session the national measures of Japan had been regulated with reference to the metric unit in 1890, and the metric system legalized in

Mexico in 1891. In March, 1895, it was applied in Tunis for measures of length and capacity and for weights, excluding all others.

**The Prison Congress.**—The quinquennial World's Penitentiary Congress held its sessions at Paris in the first part of July. The congress adopted the following resolutions: That manual labor must, as a rule, be made obligatory in case of penalties entailing deprivation of liberty; that prisoners have no right to wages, but it is in the interest of the state to give them on their liberation a gratuity—not at their free disposal, but to be placed in a savings bank or intrusted to some authority in the place where the discharged person is going to live, and to be used to provide for his necessities. The sum should be fixed by regulation, not left to the discretion of the prison authorities. It was agreed that the limit of penal minority should be fifteen years for petty offenses and sixteen years for crimes. Resolutions were also adopted extending the control of the state over children adjudged to have acted either with or without discernment up to the age of their civil majority, the right of release remaining in the hands of the state on reasonable proof of amendment being given. The disposal of children on their release was specially assigned to aid societies. The right of a criminal tribunal to deprive unworthy parents of the guardianship of their children was also affirmed. Other principles assented to are that disabilities following a man's conviction in his own country should have effect in other countries; that the principle of cellular imprisonment should be adhered to; and that criminal lunatics should be treated in special asylums, and should not be restored to liberty except on the joint authority of the committing tribunal, the lunacy board, and the prison administration. It was decided that women ought to be treated with greater consideration than men as regards food, discipline, and prison labor. The congress refused to discuss the question of cellular imprisonment for women. It approved the principle of physical education for young prisoners, and unanimously adopted a resolution to the effect that the chief feature of physical education should be agricultural work.

The next congress will be held in Brussels.

**Miners' Congress.**—The sixth annual International Miners' Congress was opened in Paris on June 3. A resolution in favor of the limitation of coal production by an international agreement among miners found favor with Belgian and French delegates, but by the vote of the English and German delegates the question of checking overproduction was relegated to the next annual meeting. Only five delegates, representatives of Durham and Northumberland, voted against a legal eight-hour working day from bank to bank, and a resolution to extend to surface workers the benefits of the law obtained the same majority. With equal unanimity resolutions were passed in favor of holding employers responsible for all accidents occurring in mines.

**Commerce Treaties.**—A Franco-Swiss commercial agreement was concluded on June 25, and went into operation on Aug. 19. Both nations concede to each other their lowest tariffs, and special reductions are given to Switzerland

on 30 articles, including cheese, watches, music boxes, embroidery, and spun silk. Care was taken not to concede a special tariff for articles that can be produced cheaply in Germany, forasmuch as that country under the treaty of Frankfurt has the benefit of every minimum tariff granted by France to other nations.

The twenty-years' commercial convention between Italy and Tunis was denounced by France on Aug. 19, one year before its expiration, during which time negotiations will be carried on between the French and the Italian governments for a new arrangement. The only other countries having commercial treaties with Tunis and standing in the way of its inclusion in the French customs union are Austria and England. Under other agreements made by the Bey of Tunis with the former governments of Tuscany, Sardinia, and Naples, Italians in Tunis are entitled to the treatment of the most favored nation, the French not excluded.

**World's Exposition of 1900.**—The Government adopted plans for the next international exposition, and made the first appropriation for it in the budget for 1896. The authorities of Nancy and some other towns protested against holding the exposition, alleging that it would disturb rather than promote business and production, that Paris alone would receive whatever benefits there were, and that, instead of promoting the export trade, it would injure it by enabling foreign competitors to watch the processes and discover the secrets of French manufactures. The Paris Municipal Council agreed to bear one fifth of the cost, this fifth not to exceed 20,000,000 francs, on condition that the ultimate profits be divided between the city and the state.

**Colonies and Dependencies.**—Algeria has an area of 184,474 square miles and a population of 4,124,732 persons. The population of the city of Algiers is 82,585. The military force maintained in Algeria consists of the Nineteenth Corps of the French army, numbering about 54,000 men. The revenue estimated in the budget for 1895 is 48,582,981 francs, of which 13,160,531 francs come from direct taxes, 11,440,500 francs from customs, 11,689,150 francs from other indirect taxes, 5,148,600 francs from monopolies, and 3,096,300 francs from forests and state lands. The expenditure is estimated at 73,851,842 francs, of which the chief items are 33,252,000 francs for public works, 15,208,007 francs for collection, 11,726,837 francs for the interior, 2,747,450 francs for justice, and 1,841,190 francs for agriculture. The total value of the imports in 1893 was 239,698,385 francs, of which 184,754,222 francs came from France; of the exports, 192,628,131 francs, of which France took 148,213,270 francs.

Tunis is nominally a dependency of Turkey, but since 1881 has been administered by France as a residency or regency, the minister resident receiving his directions from the Minister of Foreign Affairs. The present French resident is René Millet. The titular ruler is the Bey Sidi Ali. The area is about 45,000 square miles; the population 1,500,000. The French residents number 42,000. The estimated revenue in 1894 was 23,231,000 francs; expenditure, 23,154,000 francs. The chief exports are wheat, barley,

olive oil, tan, sponges, wine, vegetables, anchovies, and sardines. The fisheries and some branches of agriculture and trade are carried on by Italians. The total value of imports in 1893 was 38,383,225 francs, and of exports 29,685,325 francs. The city of Tunis was converted into a seaport by the cutting of a ship canal, completed in 1893, from Goletta, 10 miles away. In June, 1895, the landlocked harbor of Bizerta, until then closed by a sand bar, was opened as a military harbor, in which the whole French Mediterranean fleet can take refuge.

The French Congo and Gabon have an area estimated at 300,000 square miles, with a population of 6,900,000 natives, and the area of Senegal, the Guinea territories, and the French Sudan is estimated at 550,000 square miles, with a population of 3,000,000 or 4,000,000. On the eastern side of Africa France owns only the naval station of Obok, at the entrance of the Red Sea, with a population of 22,370 and an extent of 3,860 square miles. By a boundary settlement with Great Britain, both countries agreed to respect the independence of Harrar, which country has since been included in the sphere of influence claimed by Italy. This claim England has acknowledged in a convention with Italy, but France disputes it. Off the eastern coast of Africa France has long possessed the island of Réunion and the Comoro Islands and Mayotte, producing sugar and serving as outposts in the conquest of Madagascar, which has been contemplated for centuries and was finally achieved in 1895.

French Indo-China, embracing Annam, Tonquin, Cambodia, and Cochin-China, has an area of 188,000 square miles, not including about 100,000 square miles east of the Mekong that was annexed to Annam in 1893; the total population is 18,691,000. The protectorates of Annam and Cambodia have their own governments, with King Tham Thaï at the head of one and King Norodon chief of the other. Cochin-China is a French colony, represented in the Chamber by one Deputy. Tonquin is a protectorate, administered under the supervision of French officials. The Governor General of Indo-China has control over all.

The four dependencies are united in a customs union. The total imports in 1892 were 68,650,878 francs; exports, 95,071,570 francs. Not more than a quarter of the trade is French. The exportable products of Annam are sugar, cinnamon, and dyes; of Cambodia, rice, betel, tobacco, cotton, beans, and fish; of Cochin-China, rice, cotton, hides, fish, pepper, and copra; of Tonquin, rice, sugar, silk, cotton, tobacco, pepper, oils, iron, copper, and animal products. Rice is the chief crop of Tonquin and Cochin-China. It is exported to China. The local revenue of Cochin-China is about 31,250,000 francs; 4,690,000 francs were assigned in 1895 to military expenditure in Annam and Tonquin, while France expended in Cochin-China 3,051,000 francs. The local revenue of Tonquin in 1892 was 3,000,000 francs, while the expenditure of France in Tonquin and Annam was 26,250,000 francs. The number of soldiers maintained in Tonquin in 1893 was 18,555, of whom 6,500 were native troops. A railroad, 64 miles long, from Phulang-Thuong, 30 miles



north of Hanoi, the capital, to Langson, 20 miles from the Chinese frontier, was completed in December, 1894. It took over four years to build, and cost more than 18,000,000 francs. The export trade to Yunnan in 1892 was 4,990,000 francs, and the imports thence amounted to 3,180,000 francs. The regular subsidy for Annam and Tonquin has been 10,000,000 francs, but this was increased in 1895 to 15,000,000 francs. A loan of 25,000,000 francs was required to pay for the railroad 12,000,000 francs for the sections not yet built, and 13,000,000 francs for the part already constructed.

In America France possesses Cayenne or French Guiana, a penal colony having a sedentary population of 25,000, besides 4,400 convicts; Guadeloupe and Martinique and the fishing stations of St. Pierre and Miquelon, near the Newfoundland banks.

The French possessions in the Pacific are New Caledonia, with its dependencies, and the Society Islands, with the smaller groups of Marquesas, Gambier, Tuamotu, and Tubuai, and the island of Rapa. New Caledonia has an area of 6,000 square miles and 62,752 inhabitants, of whom 7,477 are convicts, 2,515 liberated convicts, 3,476 officials and soldiers, 5,585 colonists, 1,825 contract laborers, and 41,874 natives. The expenditure of France in 1895 was 3,080,451 francs; the local revenue in 1893 was 2,899,024 francs. The chief products are nickel, preserved meat, chrome ore, and silver-lead ore. Tahiti, the chief of the Society group, has an area of 412 square miles and 11,200 inhabitants. The products of these islands are copra, pearl shells, cotton, and vanilla.

**FREE BAPTIST CHURCH.** The "Free Baptist Register and Yearbook" for 1896 gives statistics of this Church, of which the following is a summary: Number of quarterly meetings, 197; of churches, 1,540; of ordained ministers, 1,362; of licensed preachers, 212; of members, 85,504; value of church property, \$2,661,409. Amounts of contributions reported: For foreign missions, \$17,239; for home missions, \$12,594; for the Education Society, \$32,017; for the Woman's Missionary Society, \$22,232. The current accounts of the Foreign Mission Department for 1895 were balanced at \$31,464; the total amount of the 4 invested funds was \$52,621. The society returned from its mission in India 559 resident and 170 nonresident members, 38 additions by baptism during the year, 2,793 pupils in Sunday schools, and a native Christian community of 1,519 persons. The Home Mission Department had received (including the balance of \$1,191 from the previous year) \$14,446, and returned the amount of its two invested funds as \$13,118. The receipts of the Educational Department for 1895 were \$21,135, and its four invested funds amounted to \$8,607. Thirteen educational institutions—universities, colleges, classical schools, and high schools—are maintained.

The General Conference met at Winnebago City, Minn., in October. President George F. Mosher, of Hillsdale College, Mich., was chosen president. The General Conference Board reported that, its first year having been occupied largely with the transfer work and accounts from the several special boards, it had had but one year of active operation. A constitution

had been adopted, an executive committee appointed, an apportionment of \$50,000 made (to be raised by the churches), the starting of new enterprises without the consent of the board or the Conference discouraged, and a resolution adopted that the invested funds should never be used for current expenses or infringed upon in any way. The total receipts for home missions were given as having been \$13,846; for foreign missions, \$24,392; for education, \$21,135. In three years \$813 had been received on a "two-cent tax." The field secretary made a report of his work in behalf of the board, to stimulate the interest of the people of the Church in the enterprises and causes under its care. A "correspondence school" was reported upon as meeting the need for which it was organized—the diffusion of knowledge on biblical and theological subjects by correspondence—was received and adopted, and officers were chosen for it. A resolution proposed by the Committee on Church Polity urged the ministers faithfully to follow in practice and teach the principles of the denomination and its polity from the pulpit and in their pastoral relations. The report on "Our Country" included a resolution inviting practical effort on the part of the Government to devise some effectual means of restraining vicious foreign immigration, and an expression "in the interest of justice, temperance, reform, and the possible purification of political methods," of "both municipal and national enfranchisement of women." The action of the Conference respecting the young people embodied a direction that each Young People's Society appoint a committee whose duty it shall be to present from time to time all matters of denominational interest as learned from the denominational publications; a recommendation that the societies seek out young men looking to the ministry and encourage them to consecrate themselves to it and prepare for it; and urging members of the society to exercise themselves in securing a pure ballot and true manhood in the duties of citizenship. A report on doctrine adopted by the Conference declared

That the scriptural doctrine of the Christian Church should be more carefully studied by our ministry and presented to our people—to wit, that the Church of Jesus Christ includes all persons who have been born of God through repentance toward God and faith in the Lord Jesus Christ, and no others; that members of the local church must in all cases be members of the Church general, and then enter into fellowship by agreement to accept the rules and regulations and by vote of the local Church respectively; and that the ordinances of the Gospel, baptism, and the Lord's Supper should be observed by all members of the universal Church, and by no other.

The Conference further emphatically declared "that baptism by immersion should be required of all candidates for membership in Free Baptist churches."

The action of the Conference with reference to ministers directed the ministers' conferences of the several yearly meetings or State associations to require from all ministers within their bounds annual reports of their work and their fellowship with the ministers of the Conference, and to issue annual certificates of standing to them. A graded course of study was provided for, of not less than three years, to be required

of all candidates for ordination and for the renewal of licenses; all licenses to be of three grades, to be known as primary, junior, and senior licenses, to be obtained on giving satisfactory evidences of proficiency in the studies of the course corresponding to them. Resolutions were passed recognizing the value of evangelistic work by properly accredited workers; declaring no political party worthy of support that fails to commit itself unequivocally for the prohibition of the liquor traffic; discountenancing the use of tobacco in any form; reaffirming "allegiance to the system of public schools as founded and maintained by the State for the help and instruction of all the citizens"; and pledging resistance to "every attempt, direct or indirect, to divert any of the common-school funds for the profit of sect or denomination."

**FRIENDS.** The following statistics of Friends in America for 1895 are given by Rufus M. Jones in the "Independent," of New York: New England Yearly Meeting, 4,389 members; Philadelphia, 4,513; New York, 3,808; Oregon, 1,777; Canada, 1,064; North Carolina, 4,998; Wilmington (Ohio), 5,099; Ohio, 5,084; Iowa, 10,642; Western (Indiana), 15,195; Indiana, 18,182; Kansas, 10,583; Baltimore, 1,122; California, 1,202; Friends in Mexico, 500; total in America, 88,158; number reported in 1894, 87,466; increase in 1895, 692.

A new yearly meeting was opened in California in the spring of 1895, making the fourteenth independent body in America. The opening was attended by delegates from nearly all the other American yearly meetings.

The bicentennial anniversary of the New York Yearly Meeting of Friends was celebrated at Flushing, N. Y., May 29. Both divisions of the Friends, the orthodox and the "Hicksites" united in the observance. It had been intended to hold the meeting in the old meeting house, erected about two hundred years ago, but the attendance was too large to be accommodated in it, and another room was secured. Besides a number of elderly persons, direct descendants of the Friends who settled at Flushing two centuries ago, Miss Caroline Hicks, a great granddaughter of Elias Hicks, founder of the "Hicksite" division, was present. The historical address was delivered by James Wood, who traced the Quaker settlements from Gravesend, Long Island, to Flushing, thence to Westchester County, New York, and the adjacent islands of Connecticut, and then northward between the Dutch settlements along the Hudson and the English in New England, even into Vermont, while some migrated as far north as Canada. Aaron W. Powell read a paper on "What Friends have done for the World," and Marianna W. Chapman delivered an address on "The Position of Women in the Society of Friends." The exercises closed with the reading of a poem by Mary S. Kimber on "The Old Friends' Meeting House."

The sessions of the London Yearly Meeting were held in the third and fourth weeks in May. Connected with them were home and foreign mission meetings and meetings in support of temperance, against vivisection and the opium trade, in the interests of education or of special schools, and the annual meeting of the Friends' Provident Society. The statistical reports

showed that the society in England and Scotland included 16,400 members, showing an increase of about 40—less than recent averages—and in Ireland 2,600. The names of 337 "recorded ministers" were returned as entered on the rolls. The Yearly Meeting in Dublin is independent, but sends representatives to the London meeting. The meeting was visited by representatives of American Friends' traveling ministers who had been laboring in different parts of the world, and by a deputation returned from Russia, where the members had had private interviews with the Czar and Czarina on the subject of religious liberty. The reading of the report of marriage statistics was followed by expressions of regret that the marriage ceremony of the society was not universally made use of by the members, and was but little sought by others, to whom it is freely open. A question arose concerning the appointment of the committee of selection, or of a committee to whom is intrusted the duty of naming the persons to be assigned to important services. The present method of naming the committee in open meeting was held liable to lead to one-sided committees by enabling those who are readiest in suggestion and speech to forestall their more deliberate brethren. It was proposed to have the representatives from the various districts appoint the committee. In the discussion concerning the society's schools, the subject of the higher education of women was most prominent. The opinion was generally expressed that the best way of meeting the want of a special woman's college would be to establish a hall of residence and tuition attached to some college, as Dalton Hall, for young men, is attached to Owen's College, Manchester. In the discussion of the state of the society desires were expressed that Friends should not purchase effectiveness in mission work at the cost of lowering the standard of the ministry, lest in the desire for readiness and for quality, and to meet a demand for words, it should lose spontaneity and inspiration. The relations of the London Yearly Meeting to American Friends have in recent years become somewhat delicate, in consequence of the assumed departures from the old usages which have been tolerated in some of the larger yearly meetings with which this body has been accustomed to correspond. The question which of the American separated bodies should be recognized in the annual letter was the subject of debate, and the meeting decided "to write to the smaller conservative bodies, sometimes named after the Rev. John Wilbur, as well as to the more numerous evangelical bodies, sometimes called after Joseph John Gurney." This action, according to Rufus M. Jones, editor of the "American Friend," is regarded as a step toward the obliteration of differences in the fuller light of the unity of truth and the oneness of the head of the Church. Among other subjects discussed were the report of the Opium Commission; slavery, with especial reference to Zanzibar; the education of new members—such as the workmen who are joining the society from the adult schools—in Quaker principles and methods of thought and feeling; and birth-right membership.

A conference of British Friends was held in



London, in November, to consider the attitude and relations of members of the body toward modern conditions. One day's session was given to the discussion of the bearing of social questions. The training given by Friends in their business meetings was held up as the best for qualifying men for the conduct of public affairs, inasmuch as it inculcates and exemplifies prudence, courtesy in difference, deference to the opinions and feelings of others, and reliance on rational conviction rather than on forcing conclusions. Quaker methods were mentioned as a good antidote for the prevailing disposition to haste; and "another thing that entitled Friends to deal with social questions was the stress they were accustomed to lay upon the spirituality of true religion." A discussion of the topic "Modern Thought and its Results upon Quakerism" called out a variety of expressions of opinion.

The discussion chiefly related to the authority of the Scriptures and the tendency and results of the "higher" biblical criticism; while the modern developments of æstheticism, historical criticism, and the evolution of thought, including religious thought, were touched upon. In the consideration of the topic of "The More Effective Presentation of Spiritual Truth," the unprofessional character of the Friends' ministry was pointed out as involving a weak point in the Quaker system, inasmuch as it does not demand education, and the ministers may fail to meet the demands of thoughtful minds among the younger men and women; and the desirability was suggested of finding means for giving better-grounded training to those who intend to serve as preachers, without incurring the danger of raising up a separate, semiprofessional ministerial class.

## G

**GEORGIA**, a Southern State, one of the original thirteen, ratified the Federal Constitution Jan. 2, 1788; area, 59,475 square miles. The population, according to each decennial census, was 82,548 in 1790; 162,686 in 1800; 252,433 in 1810; 340,985 in 1820; 516,823 in 1830; 691,392 in 1840; 906,185 in 1850; 1,057,286 in 1860; 1,184,109 in 1870; 1,542,180 in 1880; 1,837,353 in 1890. Capital, Atlanta.

**Government.**—The following were the State officers during the year: Governor, William Y. Atkinson, Democrat; Secretary of State, Allen D. Candler; Treasurer, Robert U. Hardeman; Comptroller General, William A. Wright; Attorney-General, Joseph M. Terrell; Adjutant General, J. McIntosh Kell; Commissioner of Agriculture, Robert T. Nesbitt; School Commissioner, S. D. Bradwell—all Democrats; Chief Justice of the Supreme Court, Thomas J. Simmons; Associate Justices, Samuel Lumpkin and Spencer R. Atkinson.

**Valuations.**—The assessed valuations of taxable property in the State in 1894 were: Real estate and railroad property, \$285,613,778; personal property, \$143,399,145; total, \$429,012,923. This does not include the property of railroads that is exempt by their charters from *ad valorem* taxation, estimated at about \$20,000,000. The tax rate was \$4.37 per \$1,000. In 1892 taxable property reached its highest valuation in the history of the State—\$463,753,534, when the tax rate was \$4.85 per \$1,000.

**Finances.**—The balance in the treasury Oct. 1, 1893, was \$1,139,837.45. The receipts during the following year were \$2,789,595.05, and the total payments by the treasurer \$3,100,798.94, leaving a balance in the treasury Oct. 1, 1894, of \$828,633.56. The recognized bonded debt was \$8,154,500, comprising \$8,149,500 in interest-bearing bonds and \$5,000 in past-due noninterest-bearing bonds, the sinking fund held \$200,000, making the net debt \$7,954,500. The State owns the Western and Atlantic Railroad, extending from Atlanta to Chattanooga, Tenn., and has leased it to the Nashville, Chattanooga and St. Louis Railroad at an annual rental of \$420,012.

Outstanding bonds fall due as follows: July 1, 1896, \$542,000 (funding, 1876); Jan. 1, 1922, \$207,000 (redemption, 1892); July 1, 1915, \$3,392,000 (refunding, 1884); Jan. 1, 1896-1916, \$1,900,000 (refunding, 1887, \$100,000 payable annually); Jan. 1, 1917-'35, \$1,833,000 (refunding, 1889); and various times in 1933-'42, \$275,000 (State University bonds).

**Banking.**—According to the last published report of the United States Comptroller of the Currency, Georgia had on Oct. 31, 1894, 29 national banks in operation. The combined capital was \$3,816,000; amount of United States bonds held to secure circulation, \$1,107,000; excess beyond requirement, \$328,000; amount of coin and coin certificates held, \$519,314.90; notes issued for circulation, \$9,935,630; redeemed, \$8,735,926; outstanding, \$1,199,704; and loans and discounts, \$8,168,018. The State banks numbered 77, and had total capital of \$8,340,468; resources, \$24,435,397; deposits, \$11,764,466; and surplus and undivided profits, \$2,434,196. There were 12 savings banks with capital of \$717,327; resources, \$2,322,779; savings deposits, \$836,823; deposits subject to check, \$468,100; and surplus and profits, \$211,110. There were also 3 private banks with capital of \$185,000; resources, \$632,412; deposits, \$213,712; and surplus and profits, \$154,781.

**Railroads.**—On Dec. 31, 1893, Georgia had a single-track railroad mileage of 5,083.02; during 1894 three lines constructed 30 miles of new track; making the total mileage on Dec. 31, 1894, 5,113.02. The roads were operated on a capital of over \$68,500,000; had a funded debt exceeding \$87,000,000, and a total investment of over \$172,500,000; and had expended for roadbed and equipment nearly \$157,500,000.

The Northeastern Railroad of Georgia was put up at auction April 16, and bid off by the State for \$100,000. The Georgia Central Railroad was sold, Oct. 7, for \$2,000,000 to representatives of the Southern Railway Company, which in June had secured control of the Georgia Southern and Florida, running from Macon to Palatka, Fla., 285 miles. The Marietta and North Georgia

was sold, Nov. 25, for \$956,000 to the Philadelphia Car Trust Company.

**Manufactures.**—In the fiscal year ending June 30, 1894, the collection of internal revenue aggregated \$413,287.44 from the following sources: Distilled spirits, \$315,661.39; tobacco, \$15,196.59; fermented liquors, \$75,639.23; oleo-margarine, \$4,770; and penalties, \$2,020.23. The same sources yielded a total of \$393,417.72 in the fiscal year ending June 30, 1895.

The number of tobacco factories in 1894 was 66, which had a total output of 5,073,252 cigars; and of grain, molasses, and fruit distilleries, 268, of which 251 were in operation, producing 287,517 gallons of distilled spirits and 78,407 barrels of fermented liquors.

A census of the cotton and woolen manufacturing interests of the Southern States, in April, 1895, showed that Georgia had 73 mills, operating 668,578 spindles, 15,237 looms, and 1,809 cards. The largest plant in the State, and till recently the largest one in the South, was at Columbus, and had a capital of \$1,250,000 and 46,600 spindles. There were 2 mills, both in Augusta, capitalized at \$1,000,000 each. Another mill had a capital of \$600,000; 2 had \$500,000 each; 1 had \$400,000; 1 each had \$300,000, \$262,000, \$250,000, and \$225,000; 2 had \$200,000 each; and 16 had from \$157,500 to \$100,000 each. The smallest capital reported was \$15,000.

**Manufacturers' Association.**—An association of the manufacturers of the State was formed May 7, the purposes of which are set forth in the resolutions adopted, namely:

Collection, compilation, and distribution of reliable statistics and special information regarding the progress and possibilities of manufacturing in Georgia.

Education of the producer to an intelligent knowledge of the fact that the manufacturer is not, as the politician teaches, his enemy, but a friend who develops a home market for his product.

Equitable adjustment of freight and insurance rates.

Enactment of just and liberal laws for the protection of both private and corporate capital, and for the promotion of manufacturing in the State.

Promotion of a patriotic spirit among our people that shall encourage them to patronize home industries.

**Live Stock.**—In January, 1895, the United States Department of Agriculture estimated the number and value of farm animals in the State as follows: Horses, 107,044, value \$5,458,470; mules, 161,204, value \$10,470,828; milch cows, 309,615, value \$4,811,417; oxen and other cattle, 557,645, value \$4,505,380; sheep, 402,946, value \$537,530; and swine, 1,934,892, value \$6,885,119; total value, \$32,668,744.

**Gold Mining.**—A few years ago several wealthy men from the North made extensive investments in the old mines of Dahlonega, and by taking advantage of new processes they have reaped a good profit from the low-grade ores which are practically inexhaustible in this part of Georgia. About 300 men are at work within six miles from Dahlonega. Those who have the capital for an improved equipment can mine the ore and deliver it into the mills at a cost of 25 cents a ton.

**Education.**—The total enrollment in 1893 in the public schools, including those coming under

local systems, was 436,682, an increase over the preceding year of 21,035. The total average attendance was 262,140, an increase of 16,762. The number of teachers was 9,033, an increase of 214. The school fund in 1893 was \$1,058,532.52.

The State Normal School, near Athens, enrolled 175 students during the session of 1894, among whom 51 counties were represented. The average daily attendance was 125. The session lasted only eight weeks, beginning July 5. In April, 1895, it was formally opened as a permanent normal school, the Legislature having appropriated \$20,000 for two years for running expenses. (See "Annual Cyclopædia" for 1893, page 339.) Rock College, as the building now used by the Normal School is called, is on an eminence 750 feet above the sea level between the Oconee river and the Blue Ridge. It was built in 1859 as a place for instruction of the undergraduates in the sophomore and freshman classes of the University of Georgia. But it was long since discontinued in that use and turned over to the Agricultural College. The degree of Licentiate of Instruction is to be conferred upon graduates.

The total attendance at the State University, at Athens, in 1894-'95 was 246; and the total number, including those at other institutions established by the State and made branches of the university, was 1,542. These institutions are: The North Georgia Agricultural College, the South Georgia and the Middle Georgia Military and Agricultural Colleges, the West Georgia Agricultural and Mechanical College, the Georgia School of Technology, the Georgia Normal and Industrial College, the State Industrial College for Colored Youth, and the State Normal School.

The failure of the Legislature to provide suitably for the Technological School led to the resignation of its president.

Mercer University, at Macon, had enrolled in 1894 students to the number of 252, including the preparatory, theological, and law departments. By a decision rendered in December the university receives \$13,000 from the Cheney estate in addition to the \$30,000 not disputed by the relatives. Emory College, at Oxford, had 256 enrolled, including a subfreshman class of 46. The income from endowments during the year 1892-'93 was \$9,637, and that from tuition fees \$8,871. There would have been a deficit of \$6,516 if salaries had been paid in full, but the professors made up the shortage by accepting reduced salaries.

**State Institutions.**—In the State Lunatic Asylum, at Milledgeville, the average number of patients during the year ending Sept. 1, 1894, was 1,709. Of those present during that time 127 were discharged restored and 7 were discharged improved, while 162 died. The expenditures for eleven months amounted to \$185,598.85. The total cost *per capita per diem* was 32.42 cents.

The School for the Deaf at Cave Spring had in 1893-'94 130 pupils, with 7 teachers. The cost of support was \$18,854.71. In addition to the usual school instruction the girls are taught to sew, and the boys learn shoemaking. The shoe shop had a balance in its favor for the year of \$285.38. The State maintains and instructs



the pupil for seven years without charge, and in case of need supplies clothing. All are furnished with shoes from the shop free of cost.

**Silver Convention.**—A convention held at Griffin, July 18, for the purpose of taking action favorable to the restoration of silver, was attended by nearly 5,000 people, and included delegates from every senatorial district in the State. Great enthusiasm was shown, and the resolutions passed at the Bimetallie Convention at Memphis in June were adopted, together with others having in view the organization of clubs in every county and district of the State.

**A Negro Exodus.**—The Danish steamer "Horsa" was chartered by the International Immigration Society to take to Liberia a company of about 200 negroes who gathered at Savannah in March, to form an African colony. In making the selections only men of good physical condition were permitted to join. The married men were accompanied by their wives and families, and the society made arrangements to give the unmarried colonists 10 acres of land and the married ones 25 acres upon their arrival in Liberia. The Liberian Government will shelter the colonists for three months, until they have built their own houses.

**Lawlessness.**—A race war, so called, broke out in Brooks County in December, 1894. The trouble began with the killing of Constable Maulden while he was on business connected with his office, by two brothers, negroes. Prominent among those who assisted in arresting the murderers was Joseph Isham; and a plot was formed among their friends, who formed themselves into a band to take revenge upon Mr. Isham. He was shot by a gang of 5 negroes in the highway near his house in the vicinity of Quitman. Three of the 5 were captured; but the one who fired the first shot, which was fatal, escaped. The search for him excited the negroes of the neighborhood, who banded together threatening not only to prevent his capture, but also to release the 3 prisoners from jail. A company of white men gathered to oppose them and to hunt for the murderer. The murdered man's father-in-law urged them to turn the negro over to the officers if he should be caught, and allow the law to take its course; and they sent a message to the blacks promising to do so if they would give him up. The proposition was rejected, and the whites began a search for the man, in the course of which they killed his stepfather, his brother, and another negro, and beat most cruelly a woman who was suspected of knowing where the murderer was hidden. The excitement grew until whites and blacks were gathered into two armed mobs of several hundred men each. The situation was so serious that the Governor was appealed to and ordered the Paldosta Videttes to the scene, and in a short time the trouble was over.

This account, gathered from reports of newspaper correspondents who were on the field, is contradicted by a statement given out Dec. 27, by the Board of Commissioners of Brooks County, in which they say: "There has never been any race riot in our county; the negroes have never been under arms; and the whole trouble has been caused by about 25 white men, not over 4 of whom lived in Brooks County."

About the same time great excitement was caused in Augusta by a mob, said to be 1,000 strong, which gathered about the jail where a negro was confined who had murdered another negro, and in resisting arrest had shot a detective and a policeman, both, it was supposed, fatally. During the riot that followed over 150 shots were fired. One other man, a spectator, was shot and killed. The crowd were finally induced to give up their purpose to lynch the murderer.

It was necessary to call out militia to quell a riot that arose in Savannah, in February, in consequence of a lecture announced to be given at Masonic Hall by an ex-priest. In the course of the riot, stones and bricks were thrown into the hall, and attempts were made the next day to burn the building. Four buildings in the city were blown up during the night, but there seemed to be no evidence to sustain the charge that this was done by the rioters.

**Legislative Session.**—The Legislature adjourned, Dec. 11, after a session of fifty days. In accordance with an act passed in 1893, a commission has been at work for nearly two years codifying the laws of the State. The recent Legislature passed an act providing that, as the work of the commission would have finished its work before the next session of the General Assembly, and as under the original act its work must be accepted by the Legislature, a committee be appointed to examine the work and report to the next General Assembly.

The Governor sent a special message to the Legislature in reference to the crime of lynching, from which the following are extracts:

Information reached me that there were in Sereven County two parties charged with murder who had not been arrested, although the sheriff had in his hands a warrant charging them with the aforesaid offense. These men were reported to be armed and ready to resist any effort that might be made to bring them to trial for the offense charged. I offered a reward of \$500 for their arrest, and wrote the sheriff of the county, calling his attention to the fact that it was his duty to arrest them, and requested that he summon a *posse comitatus* and execute the warrant in his hands. On Nov. 14 the sheriff wrote to me: "I summoned a *posse* of 38 men to meet me this morning. Out of 38, 2 responded to the summons. I went with the 3 men and searched the premises, but they could not be found. Where they are I am not able to say, as I could learn nothing from the family." I am informed that on this day the defendants were seen bird hunting in the county of Sereven. There is no penalty attached for failure to respond to the summons of a sheriff to act as a *posse comitatus*. This statement of facts, without argument, justifies me in recommending:

1. That a law be enacted that will provide a penalty for failure to obey the summons of a sheriff to act as a *posse comitatus*.

2. That it be made the duty of the Solicitor-General, in every case where he has reason to believe that an arresting officer has failed to make an arrest when it was in his power to do so, to draw a rule *nisi* against him, so that if the facts on trial warrant it he may be punished.

During the present session of the General Assembly there have been reported 3 lynchings—one in Clinch County, one in Montgomery, and one in Dooly. That you may fully appreciate the enormity of the wrong done by so-called lynch law to the reputation of the State, to civilization, and to the rights of man, I invite you to inquire into each case of the recent cases which

have moved me to pen this communication. The conduct of the mob in each case is unjustifiable, disgraceful, and shocking, but in one of them the wrong done was especially horrifying. While I was engaged in writing this message, there came into my office, asking that he be accorded a trial in our courts, a man who had fled from an angry mob which endeavored to capture and lynch him.

If the measures herein and heretofore suggested by me do not meet with your approval, I most earnestly ask that you devise others, and enact them into law.

**Political.**—County elections were held in January, resulting in gains for the Democrats, who elected their candidates in some counties considered heretofore as Populist strongholds. The Populists gained in Washington County. The Republicans elected their candidates in Pickens and Fannin Counties. There will be no more county elections in January, the Legislature having passed an act uniting them with the October elections.

The new election in the Tenth Congressional District (see "Annual Cyclopædia" for 1894, page 313) resulted in the election of the Democratic candidate, Mr. Black, by a majority of 1,602. Only 19,022 votes were cast, against 34,440 in Nov., 1894.

The People's party held a convention at the capital, Dec. 18, and chose delegates to the National Convention of the party. It was decided to recommend to that convention the platform that includes these principles:

Direct issue of all money by the Government; abolition of banks of issue; no more bonds to be issued except in refunding those of the Government now outstanding; silver and gold to be coined upon equal terms at a ratio of 16 to 1; the volume of currency to be increased to not less than \$50 *per capita*; Government revenues to be raised by a graduated tax upon incomes and by a tariff tax upon luxuries of life, the necessities of life to be placed upon the free list, and the internal-revenue system to be abolished; Government ownership of railroads, canals, the telegraph, and the telephone; alien ownership of land to be prohibited; and United States Senators to be elected by direct vote of the people.

**GERMAN EVANGELICAL SYNOD.** This body returns for 1895 839 ministers, 1,075 congregations, 185,203 persons having received the communion, and 81,091 pupils in Sunday schools. The year's profits of the publishing house are reported as having been \$25,000. More than 80 congregations received aid from the Home Mission fund. A foreign mission is sustained in India, which is represented as making steady progress. Orphan asylums, two of which are connected with a home for old people, are sustained at Detroit, Mich., Bensenville, Ill., and Hoyleston, Ill. The triennial General Conference of the Church met in August. Its principal acts related to the appointment of a Professor of the English Language at Eden College; the erection of a building at St. Louis, Mo., for the Eden Publishing House; the erection of an additional building for Elmhurst College, Illinois; and the publication of the weekly journal "Friedensbote," the organ of the Synod.

**GERMANY**, an empire in central Europe under a federal Government. The King of Prussia as German Emperor has supreme charge

of political and military affairs, with power to enter into international treaties and to make war if the empire is attacked, but he must have the consent of the federal legislative authorities if the war is not purely defensive. The legislative bodies are the Bundesrath and the Reichstag. The acts upon which they agree become law on receiving the assent of the Emperor and being countersigned by the Chancellor of the Empire. The Bundesrath consists of 58 members, appointed by the governments of the federal states, the Kingdom of Prussia having 17 seats, Bavaria 6, Saxony 4, and Württemberg 4; the Grand Duchy of Baden 3, Hesse 3, Mecklenburg-Schwerin 2, and Saxe-Weimar, Mecklenburg-Strelitz, and Oldenburg 1 each; the Duchy of Brunswick 2, and Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg-Gotha, and Anhalt 1 each; and the principalities of Schwarzburg-Sondershausen, Schwarzburg-Rudolstadt, Waldeck, Reuss-Greiz, Reuss-Schleiz, Schaumburg-Lippe, and Lippe, and the free cities of Hamburg, Bremen, and Lübeck each 1. The Reichsland of Alsace-Lorraine is not represented in the Bundesrath, but sends 15 members to the Reichstag, which has 397 members altogether, of whom 236 represent Prussia, 48 Bavaria, 23 Saxony, 17 Württemberg, 14 Baden, 9 Hesse, 6 Mecklenburg-Schwerin, 3 Saxe-Weimar, Oldenburg, Brunswick, and Hamburg, 2 Saxe-Meiningen, Anhalt, and Saxe-Coburg-Gotha, and a single member each of the other states. The Reichstag members are elected by universal male suffrage and by secret ballot for five years, the proportion being about 1 to 124,500 of population. The Reichkanzler or Chancellor of the Empire presides over the Bundesrath.

The German Emperor is Wilhelm II, born Jan. 27, 1859, eldest son of Friedrich III, whom he succeeded on June 15, 1888.

The Reichskanzler in 1895 was Prince Hohenlohe-Schillingsfürst, appointed Oct. 29, 1894. The imperial ministers were: Foreign Affairs, Freiherr A. Marschall von Bieberstein; Interior, Dr. Karl Heinrich von Bötticher; Marine, Vice-Admiral Hollmann; Justice, A. Nieberding; Treasury, Graf A. von Posadowsky-Wehner; Railroads, Dr. Schulz; Post Office, Dr. von Stephan; Court of Accounts, Privy-Councilor von Wolff; Invalid Fund, Dr. Rösing; Railroad Administration, Herr Thielen; Imperial Bank, Dr. Koch; Debt Commission, Privy-Councilor Meinecke. Prince Hohenlohe was President of the Prussian Council of Ministers, Dr. von Bötticher was Vice-President and Minister of State, and Herr Thielen was Minister of Public Works. The other Prussian ministers were: Interior, Herr von Köller; War, Gen. Bronsart von Schellendorf; Agriculture and Domains, Freiherr von Hammerstein-Loxten; Justice, Dr. Schönstedt; Ecclesiastical Affairs, Education, and Public Health, Dr. Julius Robert Bosse; Finance, Dr. Johannes Miquel; Commerce, Freiherr von Berlepsch.

**Area and Population.**—The area of the empire is now computed to be 208,670 square miles. The population at the taking of the last census on Dec. 2, 1895, was 51,758,364, showing an annual gain of .91 per cent. since 1890, when the population was 49,428,470, consisting of 24,230,832 males and 25,197,638 females. The



annual rate of increase for the preceding five years was 1·07 per cent., as compared with 1·3 per cent. for the whole period since 1816. The number of foreigners was 518,510, of whom 207,135 were Austrians, 56,437 Netherlands, 53,227 Russians, 41,613 Swiss, 32,130 French, 23,439 Danes, 15,748 English, 14,615 Scandinavians, 13,080 Italians, 12,704 Luxemburgers, 10,213 Belgians, 3,242 others Europeans, 17,646 citizens of the United States, 6,068 other Americans, 5,371 Asiatics, Africans, etc., and 5,842 of unknown origin. The number of marriages in 1892 was 398,775; of births, 1,856,999; of deaths, 1,272,430; excess of births, 584,569. There were 954,743 boys born and 900,253 girls. The number of emigrants in 1893 was 87,677, compared with 116,339 in 1892; the destination of 78,245 was the United States, while 1,173 went to Brazil, 7,266 to other countries in America, 586 to Africa, 146 to Asia, and 261 to Australasia. The total emigration since 1820 had been 5,700,000, of whom 2,292,496 crossed the sea since 1870. Of the total number about 4,000,000 went to the United States. The number of Austrians, Russians, and other emigrants who took ship at Hamburg and Bremen in 1893 was 98,288. Berlin on Dec. 2, 1895, had 1,674,112 inhabitants, an increase of 95,318 since 1890. The suburbs increased more rapidly than the city. The population within the corporate limits of the other principal cities was in 1890 as follows: Munich, 350,594; Leipzig, 357,122; Breslau, 349,024; Hamburg, 323,923; Dresden, 289,844; Cologne, 281,681; Magdeburg, 202,234; Frankfurt, 179,985; Hanover, 174,455; Königsberg, 161,666.

**Finances.**—The ordinary revenue for 1895 was estimated in the budget at 1,154,899,000 marks, and the extraordinary revenue at 130,275,000 marks; total, 1,285,174 marks (1 mark = 23·82 cents). The receipts from customs and excise were estimated at 621,936,000 marks; stamp duties at 34,045,000 marks; postal and telegraph revenue, 28,404,000 marks; printing-office profits, 1,437,000 marks; net revenue from railroads, 23,081,000 marks; from the Imperial Bank, 7,245,000 marks; from the departments, 12,539,000 marks; interest of invalid fund, 27,258,000 marks; interest of Imperial funds, 46,000 marks; various receipts, 1,400,000 marks; contributions of the federal states, 397,508,000 marks. The ordinary recurring expenditure for the year ending March 31, 1895, was estimated at 1,079,948,000 marks, and the nonrecurring and extraordinary expenditure for military and other purposes at 206,598,000 marks; total, 1,286,546,000 marks. The gross receipts from posts and telegraphs were 270,768,400, and expenses 242,364,383 marks; the gross receipts of the printing office were 6,242,000, and expenses 4,805,200 marks; the gross receipts of the railroads 62,460,000, and expenses 39,378,900 marks. Of the recurring expenditure, 360,528,000 marks were for the imperial treasury, 480,922,000 marks for the army, 71,740,000 marks for interest and sinking fund of the debt of the empire, 50,696,000 marks for the navy, 48,245,000 marks for the Pension fund, 27,258,000 marks for the Invalid fund, 27,223,000 marks for the Interior Department, 10,304,000 marks for foreign affairs, 632,000 marks for the court of accounts, 2,066,000 marks for justice, 423,000 marks for the

Reichstag, 322,000 marks for reform of the civil-service salaries, 335,000 marks for railroads, and 153,000 marks for the Imperial Chancellery. The total ordinary expenditure for military and naval purposes in 1895 was 588,047,000 marks, compared with 563,908,000 marks in 1894, 548,666,000 marks in 1893, 531,986,000 marks in 1892, and 487,845,000 marks in 1891; the extraordinary expenditure for defense was 96,960,000 marks, compared with 161,820,000 marks in 1894, 118,395,000 marks in 1893, 119,925,000 marks in 1892, and 303,397,000 marks in 1891. The debt charge has increased from 48,274,000 marks in 1891 to 55,807,000 marks in 1892, 58,711,000 marks in 1893, 66,966,000 marks in 1894, and 71,740,000 marks in 1895.

The funded debt of the empire on March 31, 1893, amounted to 1,740,842,500 marks. The first loans, amounting to the nominal sum of 450,000,000 marks, were contracted at 4 per cent., after which 760,842,500 marks were raised at 3½ per cent., and old debts were funded and new obligations issued under acts passed in 1890, 1891, and 1892 to the amount of 530,000,000 marks bearing interest at 3 per cent.

The amount of the several reserve funds in April, 1893, was as follows: Invalid fund, 457,775,275 marks, besides 3,297,625 florins and 6,818,160 marks in cash; Reichstag building fund, 9,956,800 marks; war treasure, 120,000,000 marks.

The following table gives, in marks, the budgets of the different German states for 1895, or in the case of some of them for 1894, and the state of their debts:

STATES.	Revenue.	Expenditure.	Debt.
Alsace-Lorraine ....	58,189,649	51,200,729	25,001,600
Anhalt.....	21,754,000	21,754,000	1,888,313
Baden.....	75,782,366	81,251,544	327,505,755
Bavaria.....	328,841,269	328,841,269	1,853,676,721
Bremen.....	16,341,958	27,772,500	98,045,900
Brunswick.....	13,301,500	14,301,500	26,911,500
Hamburg.....	63,642,727	69,909,188	327,327,431
Hesse.....	27,352,964	27,563,880	39,109,025
Lippe.....	1,148,659	1,148,190	810,398
Lübeck.....	4,524,378	4,524,378	9,322,621
Mecklenburg-Schwerin.....	4,151,000	4,151,000	108,700,000
Mecklenburg-Strelitz.....	.....	.....	6,000,000
Oldenburg.....	9,174,971	10,369,137	42,553,106
Prussia.....	1,949,649,391	1,949,649,391	6,371,504,354
Reuss-Greiz.....	1,229,708	1,229,708	189,500
Reuss-Schleiz.....	2,091,400	2,080,051	1,040,550
Saxe-Altenburg.....	3,847,110	3,847,110	887,450
Saxe-Coburg-Gotha.....	2,012,182	2,647,190	3,165,298
Saxe-Meiningen.....	2,461,326	2,207,460	11,571,913
Saxe-Weimar.....	8,733,584	8,733,584	5,083,671
Saxony.....	70,391,545	70,391,545	669,521,350
Schaumburg-Lippe.....	1,225,245	1,127,597	360,000
Schwarzburg-Rudolstadt.....	2,542,950	2,542,950	3,910,000
Schwarzburg-Sondershausen.....	2,764,455	2,764,455	2,723,444
Waldeck.....	1,261,952	1,261,952	2,130,300
Württemberg.....	67,166,287	69,129,462	446,626,057

Many of the states have property offsetting, and in some cases exceeding the debt. Anhalt has property of the value of 6,746,528 marks. The debt of Baden was incurred solely for railroad construction, and the railroads pay more than the interest. Of the Bavarian debt 993,460,400 marks were put into railroads. The debt of Bremen is represented by railroads and harbor improvements yielding revenue enough

to extinguish the obligations at a rapid rate. Of the debt of Brunswick 80 per cent. was contracted in order to build railroads. The debt of Hamburg was incurred mainly for public works, from which, next to direct taxes, the largest revenue is obtained. Of the debt of Hesse 35,345,020 marks are railway debt, and against the rest are held 4,166,503 marks of active funds. In Lippe, where the revenue comes from the land, which is the property of the prince, the debt is less than the active funds. The debt of Meeklenburg-Schwerin is more than covered by productive funds. The budget given includes only that part of the grand-ducal revenue that is applied to public purposes, not the separate revenue of the grand duke, amounting to 17,390,000 marks a year. In Meeklenburg-Strelitz the administrative expenses are paid out of the privy purse of the grand duke, and no public accounting is made. Most of the debt of Saxe-Meiningen is covered by productive capital; two thirds of the revenue of Saxe-Altenburg and one third of that of Saxe-Meiningen is the usufruct of ducal estates now applied to public purposes. Saxe-Weimar gets a large part of the revenue from the state forests. The budget of Saxony includes 21,690,700 marks of extraordinary revenue used for extending the public works; the kingdom obtains more than half its revenue from state forests, domains, and railroads, the latter yielding a net income of 30,636,535 marks in 1894. Of the debt of Württemberg 405,242,000 marks were contracted for railroads, from which the state derived a net profit of 11,377,442 marks in 1892. The Prussian revenue is derived from the following sources: Domains and forests, 86,191,474 marks; direct taxes, 194,422,000 marks; indirect taxes, 71,221,000 marks; lottery, 79,266,500 marks; marine bank, 1,876,000 marks; mint, 353,650 marks; mines, iron furnaces, and salt works, 128,188,972 marks; state railroads, 963,751,676 marks; finance administration, 335,553,367 marks; Ministry of Justice, 60,913,300 marks; Ministry of the Interior, 11,075,890 marks; Ministry of Agriculture, 3,855,512 marks; Ministry of Public Instruction, 3,080,890 marks; other departments, 9,899,160 marks. The expenditure is distributed as follows: Working expenses of the domains and forests, 41,198,090 marks; of the finance administration, 119,319,590 marks; of the administration of mines, etc., 111,916,732 marks; of the administration of railroads, 595,996,943 marks; supplement to the King's revenue from the royal trust funds, 8,000,000 marks; public debt, 282,309,810 marks, being 241,876,534 marks for interest, 37,934,067 marks for amortization, 1,432,756 for annuities, and 1,057,453 for administration; matricular contribution to imperial expenditure, 247,986,090 marks; appanages, subventions, and indemnities, 105,316,343 marks; Herrenhaus, 179,680 marks; Chamber of Deputies, 1,201,540 marks; Ministry of State, 6,204,639 marks; Ministry of Foreign Affairs, 538,000 marks; Ministry of Finance, 72,762,679 marks, of which 43,007,904 are for civil pensions and rewards, 5,466,100 marks for the widows' fund, 13,529,000 marks for presidencies and governments, 8,810,900 marks for the general funds, and 1,948,775 for administration and other expenditure; Ministry of Public Works, 22,376,-

640 marks; Ministry of Commerce and Industry, 6,618,077 marks; Ministry of Justice, 91,913,200 marks; Ministry of the Interior, 53,055,094 marks, of which 22,516,456 marks are for police, 10,716,970 marks for gendarmerie, 9,122,016 marks for houses of correction, and 10,699,652 marks for administrative and other expenses; Ministry of Agriculture, Domains, and Forests, 17,229,607 marks, of which 4,722,100 marks are for the stud; Ministry of Worship and Public Instruction, 105,843,809 marks, of which 80,439,883 marks are for public instruction, 10,819,451 marks for expenses common to worship and instruction, 2,987,425 marks for evangelical worship, 2,604,789 marks for Catholic worship, 4,061,591 marks for science and the fine arts, 1,983,398 marks for medical affairs, 1,675,024 marks for technical instruction, and 1,322,248 for other expenses; administration of the arsenal, 128,122 marks. The total ordinary expenditure is 1,891,612,410 marks, and the extraordinary expenditure is 58,036,981 marks, of which the chief items are 20,865,000 marks for railroads, 16,235,490 marks for other public works, 4,707,200 marks for justice, 4,373,575 marks for worship, 4,270,359 marks for agriculture, and 4,474,047 marks for finance. The Prussian debt consists of 3,592,667,850 marks of consols paying 4 per cent. interest, 1,916,883,950 marks paying 3½ per cent., 635,000,000 marks paying 3 per cent., 170,075,535 marks of shares and loans of railroads bought by the state, 35,089,800 marks of treasury bills, and some old debts.

**The Army.**—Every able-bodied German, unless exempted by lot, is called into the active army at the age of twenty. The military law of 1893, adopted for the period ending March 31, 1899, reduced the time of active service to two years in the infantry, leaving it still three years in the cavalry and field artillery. This added about 60,000 men to the annual contingent. Young men who have reached the highest grade in a gymnasium or a *realschule*, if they equip and board themselves, can fulfill their military duty by serving a single year. From these one-year volunteers, of whom there are about 8,000 every year, are taken many officers of the Landwehr. These volunteers are not counted in the peace effectives. Roman Catholic priests are inscribed in the depot reserve, and are not obliged to train. Natives of Heligoland are exempt from military duty by treaty; but those born after the cession of the island to Germany, Aug. 11, 1890, will have to serve. Schoolmasters are required to serve in the active army only ten weeks. After the two or three years of service with the colors the recruits return to civil life, except those who adopt the military profession and are re-engaged as noncommissioned officers. When these men become too old for the service, they frequently obtain civil employment on the railroads, or as forest rangers, or the like. The time-expired soldiers are enrolled for three years in the regular army reserve, and then pass into the Landwehr, where the term of service is five years in the first and seven years in the second bans for the men who have served two years as infantrymen, engineers, foot artillerymen, etc.; but those who have served three years in the



permanent army remain only three years in the first ban. The military law of 1893 fixed the mean annual peace effective at 479,229 men. This limitation, however, has not been observed. The actual strength in 1895 was 22,534 officers and 562,014 men, with 96,844 horses. The army is organized in 20 corps, consisting of 173 regiments of infantry, 19 battalions of Jägers, 93 regiments of cavalry, 43 regiments, with 494 batteries, of field artillery, 17 regiments of foot artillery, and 23 battalions of pioneers, besides 3 regiments and 2 battalions of railroad troops. There are 288 district commands of Landwehr. The strength of the different arms, including the armies of Bavaria and Württemberg—which, though separately organized, form a part of the German army under the supreme command of the Emperor-King as war lord—is shown in the following table:

TROOPS.	Officers.	Men.
Infantry .....	11,774	363,750
Jägers .....	410	12,036
District commands .....	700	5,352
Surgeons, instructors, etc. ....	.....	2,716
Field artillery .....	2,671	59,233
Cavalry .....	2,352	66,003
Foot artillery .....	569	23,073
Pioneers .....	723	19,139
Train .....	305	7,596
Special formations .....	461	2,879
Staff and special details .....	2,264	237
Total .....	22,534	562,014

The war strength of Germany, with her present organization, is estimated to be 3,000,000 instructed soldiers.

**The Navy.**—In accordance with the programme of construction adopted in 1889, 4 first-class battle ships, of 9,840 tons ("Kurfürst Friedrich Wilhelm," "Weissenburg," "Brandenburg," and "Wörth"), were launched in 1891 and 1892. They have steel hulls with double bottoms and 120 water-tight compartments, are protected by a complete belt of 15½-inch compound armor, 9,500 indicated horse power, a speed of 16 knots with natural draught, and are armed with 6 11-inch guns mounted in a strong barbette, besides 16 4-inch quick-firing guns, 8 of 4-inch caliber, and 7 torpedo ejectors. A fifth vessel of this class ("Ersatz Preussen") is under construction. Of the projected 10 armor clads, of 3,600 tons, for coast defense, 6 were completed before 1895 ("Siegfried," "Beowulf," "Frithjof," "Hildebrand," "Heimdal," and "Hagen"), and 2 are under construction. Each of these vessels has a normal speed of 16 knots and carries 3 9·4-inch breech-loading guns and 6 4-inch quick-firers. Of the 8 corvette cruisers that were in the programme, only the "Kaiserin Augusta" has been built as originally planned. She is a triple-screw steamer of 12,000 indicated horse power, capable of steaming 22 knots, having a displacement of 6,052 tons, and armed with 12 6-inch Krupp guns, 8 quick-firing guns, and 4 torpedo tubes. The "Irene" and "Princess Wilhelm" are smaller and slower. There are 10 battle ships of the old fleet that are still effective, all built between 1874 and 1884, except the "König Wilhelm," of 9,600 tons, a broadside ship, with 12 inches of armor and 18 9·4-inch, 5 8·2-inch, and 6 5·9-inch guns. Two of them ("Kaiser" and "Deutschland") have a displace-

ment of 7,550 tons, 10 inches of side armor, and 8 10·2-inch guns in a central battery, besides 1 8·2-inch gun and 7 5·9-inch guns; 4 ("Sachsen," "Baden," "Bayern," and "Württemberg") have a displacement of 7,280 tons, 16-inch armor, and 6 10·2-inch guns mounted in barbettes, 4 4·1-inch, quick-firing guns; 2 ("Preussen" and "Friedrich der Grosse") have a displacement of 6,660 tons, 10½ inches of side armor, and 4 10·2-inch, 2 6·6-inch, and 4 4½-inch quick-firing guns; and 1 ("Oldenburg"), of 5,120 tons, has 12 inches of armor, and carries 8 9·4-inch guns. Every one of these vessels is fitted with 4 or 5 torpedo ejectors. Their speed varies from 13½ to 15 knots. There are 11 gunboats ("Basilisk," "Biene," "Camäleon," "Crocodil," "Hummel," "Mücke," "Natter," "Salamander," "Skorpion," "Viper," and "Wespe"), of 1,090 tons, having 8-inch armor, and carrying a single 35-ton or 11·8-inch gun. The Government has engaged 7 of the fleetest vessels of the Hamburg-American and North-German Lloyd packet lines to serve as auxiliary cruisers in case of war, and has provided for each of them 8 5·9-inch, 4 4·9-inch, and 4 quick-firing Krupp guns. There are 7 third-class cruisers ("Gefion," "Arcona," "Alexandrine," "Olga," "Marie," "Sophie," and "Freya"), of about 2,500 tons, and 7 fourth-class cruisers ("Seeadler," "Condor," "Cormoran," "Falke," "Bussard," "Schwalbe," and "Sperber"), of about 1,500 tons, the latter having powerful rams and 4 guns disposed fore and aft and on each broadside. A first-class cruiser of 8,500 tons has been authorized, and 3 second-class cruisers are to be laid down also. The chief naval stations are at Kiel and Wilhelmshaven, which are connected by the new North Sea Canal. The torpedo stations are Friedrichsort, Wilhelmshaven, Kiel, Cuxhaven, and Geestemünde. There are 114 first-class torpedo boats and torpedo division boats, and 21 second-class torpedo boats.

**Commerce and Industry.**—The total value of the special imports in 1893 was 4,134,070,000 marks, and the value of the exports of German products 3,244,562,000 marks. The following table gives the values, in marks, of the special imports and exports in 1893 of the various classes of merchandise:

MERCHANDISE.	Imports.	Exports.
Live animals .....	221,955,000	25,986,000
Animal products .....	137,066,000	29,692,000
Articles of consumption .....	1,094,723,000	400,116,000
Seeds and plants .....	64,020,000	39,256,000
Fuel .....	96,943,000	140,459,000
Fats and oils .....	244,883,000	32,545,000
Chemicals and drugs .....	273,078,000	299,101,000
Stone, clay, and glass wares .....	56,614,000	111,408,000
Metals and metal goods .....	346,639,000	477,683,000
Wood and wood manufactures .....	226,254,000	100,941,000
Paper manufactures .....	21,680,000	91,625,000
Leather and skins .....	157,468,000	202,802,000
Textiles .....	1,024,581,000	916,916,000
India rubber, etc. ....	31,708,000	24,796,000
Machinery and instruments .....	54,330,000	164,133,000
Hardware .....	23,099,000	79,783,000
Literary and art products .....	29,026,000	104,289,000
Miscellaneous .....	.....	851,000
Total .....	4,134,070,000	3,244,562,000

The imports of cereals were 320,300,000 marks in value; of wool, 273,400,000 marks; of cotton, 221,200,000 marks; of coffee, 214,000,000 marks;

of cattle, 206,700,000 marks; of timber, 162,200,000 marks; of raw silk, 139,300,000 marks; of woolen yarn, 117,900,000 marks; of coal, 94,600,000 marks; of leaf tobacco, 75,100,000 marks; of flax and hemp, 68,700,000 marks; of petroleum, 66,800,000 marks; of seeds, 66,200,000 marks; of Chili saltpeter, 65,400,000 marks; of eggs, 57,000,000 marks; of copper, 48,300,000 marks; of cotton yarn, 47,200,000 marks; of fish, 45,600,000 marks; of wine, 42,100,000 marks.

The exports of sugar were valued at 227,100,000 marks; of woollens, 217,900,000 marks; of iron manufactures, 167,400,000 marks; of silk goods, 156,300,000 marks; of cotton goods, 154,300,000 marks; of coal, 136,700,000 marks; of silk and woolen goods, 124,580,000 marks; of colors, 97,800,000 marks; of iron, 93,100,000 marks; of leather goods, 85,100,000 marks; of clothing, 80,000,000 marks; of wool, 67,700,000 marks; of hides, raw and tanned, 62,400,000 marks; of leather, 53,200,000 marks; of manufactures of wood, 50,400,000 marks; of glassware, 41,500,000 marks; of woolen yarn, 37,900,000 marks; of seeds, 36,400,000 marks; of pottery, 34,700,000 marks; of raw silk, 34,600,000 marks; of hops, 33,100,000 marks; of flax and hemp, 31,500,000 marks.

The imports of precious metals in 1893 were 172,332,000 marks, and the exports 152,604,000 marks.

The participation of the different countries in the commerce of the German Zollverein in 1893 is seen in the following table, giving the imports from and the exports to each one, in marks:

COUNTRIES.	Imports.	Exports.
Free port of Hamburg.....	15,306,000	81,788,000
Great Britain.....	656,685,000	674,013,000
Austria-Hungary.....	580,244,000	420,545,000
Russia.....	353,441,000	184,595,000
Netherlands.....	214,176,000	240,688,000
France.....	241,417,000	203,119,000
Belgium.....	188,869,000	147,757,000
Switzerland.....	143,691,000	187,367,000
Italy.....	149,680,000	85,418,000
Norway and Sweden.....	80,674,000	109,622,000
Denmark.....	50,254,000	80,829,000
Spain.....	35,935,000	33,051,000
Portugal.....	13,741,000	12,083,000
Turkey, Greece, and Balkan countries.....	122,578,000	97,074,000
North America.....	497,112,000	389,863,000
South America and West Indies.....	384,153,000	175,600,000
Australia.....	96,993,000	18,510,000
British India.....	178,809,000	46,936,000
Other Asian countries.....	56,528,000	69,913,000
Africa.....	71,867,000	84,867,000
Other countries.....	972,000	974,000
Total.....	4,184,070,000	3,244,562,000

The total area of Germany is 54,025,085 hectares, of which 26,311,968 are cultivated, 13,908,398 are forest, 10,944,570 are meadow, pasture, and waste, and 2,860,149 are roads, towns, etc. There are 5,276,344 farms, employing 8,120,518 and supporting 18,840,818 persons. The areas covered with various crops in 1893 were: Rye, 5,678,733 hectares; oats, 3,987,719; wheat, 1,975,652; barley, 1,690,096; potatoes, 2,929,808; hay, 5,892,717; vines, 118,292; hops, 43,434. The number of horses in 1892 was 3,817,939; cattle, 17,496,696; sheep, 13,775,063; hogs, 12,056,804; goats, 3,077,722. The quantity of sugar beets consumed in 1893 was 9,811,940 metric tons, producing 1,175,137 tons of sugar. The quan-

tity of beer brewed was 54,651,000 hectolitres, the product of 8,460 breweries. The coal output in 1893 was 73,909,000 tons. The product of pig iron in 1892 was 4,937,461 tons, valued at 229,296,000 marks; of manufactured iron, 5,130,891 metric tons were turned out, valued at 671,677,000 marks. The silver product was valued at 57,229,000 marks; zinc, 55,062,000 marks; copper, 24,758,000 marks; lead, 20,547,000 marks.

**Navigation.**—The merchant shipping of various nationalities that visited German ports during 1892 is shown in the following table, each vessel, though calling at different ports, being counted only once:

ENTERED.	WITH CARGOES.		IN BALLAST.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
German.....	40,954	6,812,325	7,726	639,589
British.....	4,868	3,945,963	251	262,163
Danish.....	4,675	772,315	1,286	96,832
Swedish.....	2,809	596,031	133	34,748
Dutch.....	1,105	194,143	192	19,458
Norwegian.....	1,047	433,030	61	26,987
Russian.....	567	167,785	10	2,785
Other foreign.....	238	189,968	5	3,340
Total.....	56,263	13,101,560	9,664	1,035,907

The number of vessels cleared and their tonnage are given according to their flags in the table below:

CLEARED.	WITH CARGOES.		IN BALLAST.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
German.....	37,617	5,865,757	10,802	1,545,979
British.....	2,900	2,044,305	2,192	2,146,123
Danish.....	8,531	639,769	2,149	224,856
Swedish.....	1,379	361,730	1,560	270,652
Dutch.....	941	182,565	303	28,434
Norwegian.....	677	262,654	412	185,348
Russian.....	287	74,067	327	87,759
Other foreign.....	274	118,670	80	81,202
Total.....	47,756	9,549,567	17,825	4,559,833

The total number entered was 65,927, of 14,187,407 tons; cleared, 65,581, of 14,108,950 tons. The number entered at Hamburg was 3,829, of 5,683,353 tons; at Bremen, 3,095, of 1,358,191 tons; at Stettin, 3,762, of 1,233,541 tons; at Kiel, 3,611, of 591,680 tons; at Dantsic, 1,582, of 584,478 tons; at Lübeck, 2,425, of 516,963 tons; at Königsberg, 1,330, of 397,556 tons.

The merchant navy in 1894 consisted of 2,713 sailing vessels, of 698,356 tons, and 1,016 steamers, of 823,702 tons; total, 3,729 vessels, of 1,522,058 tons. Of the sailing vessels 2,017, of 558,139 tons, belonged to North Sea ports, and 696, of 140,217 tons, to Baltic ports; of the steamers, 628, of 665,702 tons, belonged to ports of the North Sea, and 388, of 158,000 tons, to Baltic ports. Not included in these figures are the vessels engaged in the coasting trade and inland navigation, numbering 22,848 in 1893, of about 2,817,000 tons.

**Railroads.**—There were 27,439 miles of railroads in operation in 1894, all of which belonged to the Government, state or imperial, save 3,206 miles, and of these 296 miles were worked by the Government. The gross receipts for 1893 were 1,353,083,000 marks, and expenses 862,267,000 marks, leaving the net receipts 490,816,000 marks,



equal to  $4\frac{1}{2}$  per cent. on the capital, which was 10,917,237,000 marks. The freight traffic for the fiscal year was 230,864,000 metric tons, paying 888,577,000 marks, while 354,793,000 marks were taken in from 488,171,000 passengers.

**Posts and Telegraphs.**—The imperial post office in 1893 carried 1,094,333,514 letters, 385,934,976 postal cards, 471,295,176 circulars, etc., 30,677,658 samples, and 808,257,036 newspapers. The total number of pieces was 2,878,996,588. The separate Bavarian post office handled 302,872,489 pieces, and the Württemberg post office 129,653,312 pieces. The amount of money forwarded was 18,016,532,164 marks in the imperial postal district or 20,638,573,319 marks, including Bavaria and Württemberg. The receipts of the imperial post office for 1894, both from mails and the telegraph service, were 256,466,749 marks, and expenses 239,776,366 marks, leaving a surplus of 16,690,383 marks. Including Bavaria and Württemberg, receipts were 290,615,418 marks, and expenses 270,887,743 marks.

The telegraph lines of the imperial postal district had in 1894 a total length of 66,045 miles, with 245,017 miles of wires. The Bavarian telegraphs were 7,559 miles in length, with 23,404 miles of wire, and those of Württemberg 2,955 miles, with 7,551 miles of wire, making the total length of lines for the empire 76,559 miles, and the length of wires 275,972 miles. The number of domestic telegrams dispatched by the imperial service was 19,592,554; in Bavaria, 1,719,669; in Württemberg, 610,518; total, 21,922,741. The number of foreign telegrams was 8,775,932 for the imperial postal district, 498,471 for Bavaria, and 167,072 for Württemberg; total, 9,441,475.

**The North Sea and Baltic Canal.**—The only means of communication by water between the North Sea and the Baltic has hitherto been by the navigation of the Skager Rack and the Cattegat, round the peninsula of Jutland, with the exception of the old Eider Canal, which gave passage to small vessels only. The route round Jutland is dangerous, for the reason that the passage is not very wide and that the water is crowded with shipping, which in the heavy fogs and the frequent violent storms cause much shipwreck. The annual number of wrecks averages 200. The new canal was ceremoniously opened by Kaiser Wilhelm, June 20, 1895. For an account of the canal, see *ENGINEERING*.

**Prince Bismarck's Birthday.**—On April 1, 1895, Prince Bismarck, ex-Chancellor and founder of the German Empire, celebrated his eightieth birthday, and with him celebrated the German nation, from the Emperor down to the lowest citizen.

In the German Reichstag a resolution was proposed to authorize the president of that body, Herr von Levetzow, to convey to Prince Bismarck the congratulations of the Chamber. The majority of the Reichstag members, however, could not forget the bitter quarrels they had had with the former Chancellor, in which they usually were worsted, and by a vote of 163 to 146 the proposed resolution was rejected. Herr von Levetzow and the second vice-president of the Reichstag immediately resigned, amid great confusion. Emperor William, upon hearing the decision of the Reichstag, sent

the following telegram to Prince Bismarck: "Allow me to express to your Serene Highness my deepest indignation at the decision just taken by the Imperial Diet, which is diametrically opposed to the sentiments of all German princes and their peoples."

The celebrations in Friedrichsruh began on March 25, with the reception by the Prince of the members of the Prussian Diet and many members of the Reichstag. On March 26 Emperor William went to Friedrichsruh to congratulate Prince Bismarck personally, accompanied by the Crown Prince, the Minister of War, the heads of the civil, military, and naval cabinets, and the members of his staff.

On April 1 large delegations from all parts of the empire arrived in Friedrichsruh and presented the congratulations of the German people. In the cities the houses and public buildings were decorated, and in the evening illuminations and fireworks took place. Emperor William gave a grand banquet in honor of the Prince's birthday, and celebrations and festivities were had everywhere—in the United States, in Italy, Japan, China, Africa, Australia, in every place where Germans congregate.

**Session of the Reichstag.**—At the opening of the Reichstag, Dec. 5, 1894, Emperor William, in his speech from the throne, announced the introduction of bills dealing with the extension of the criminal laws; a bill for the regulation of bourse transactions; a measure for the reform of abuses caused by dishonest trade competition; and a bill providing for the further taxation of tobacco. The first of these 4 bills, the *Umsturzvorlage* (see "Annual Cyclopædia" for 1894), created an enormous amount of opposition throughout the whole of Germany. Petitions against its adoption were presented to the Reichstag by thousands, signed by the best learned men of the empire—professors in the universities, poets, writers: all liberal-minded people joined in expressing their disapproval of this proposed measure. The bill, although mainly directed against socialism, was elastic enough to be applied with equal force against any one of the parties that might happen to offend the Government, and it had arrayed against it in the Reichstag all the liberal parties in addition to the Social Democrats. The Government relied chiefly on the support of the Conservatives and the Ultramontane party. After its first reading in the Reichstag it was referred to a committee, and here it underwent considerable changes and modifications. Attempts were made to win the Clericals for the Government, but that party was mindful of the fact that it owed its existence to the *Culturkampf* and the repressive laws originating therefrom. It was therefore not disposed to grant to the Government powers which could be turned against it at any moment unless by giving this weapon to the Government it could derive material benefits. While the bill was in the hands of the committee the Clericals succeeded in gaining many modifications to suit their purposes, and when the bill emerged from the committee room there appeared to be a prospect that with the aid of the Clericals the bill would be adopted. When it came before the Reichstag for a second reading it was found that the Government insisted

on the bill in its original form. The Clerical party, which had agreed to support the Government under the impression that the latter had tacitly consented to the modifications, refused to vote for the original bill. When section 112 was reached only the Clericals voted for the section as modified, and when the section in its original form was read, only the Conservatives voted for it. Eugene Richter then proposed to dispose of the entire bill at once, and not to waste any more precious time upon it. Accordingly, the different paragraphs of the bill were taken up successively, and were rejected by the Reichstag by large majorities, so that not even the formality of a division was required. Thus ended with the inglorious defeat of the Government a campaign undertaken, as the Government expressed it, for the defense of religion, morality, and social order.

The Government had to sustain another defeat in the rejection by the Reichstag of the tobacco-tax bill. This bill provided for a reduction of the import duty on foreign-grown tobacco by 45 marks per 100 kilogrammes, the abolition of the system of specific duties on home-grown tobacco, and substitution for the latter of an *ad valorem* duty of 25 per cent. for cigars and cigarettes and 40 per cent. for snuff and smoking and chewing tobaccos. At the time of its introduction into the Reichstag, the Government declared that these new duties were necessary to prevent a threatened deficit in the budget, and it was expected that the Clericals would rally to its support. When it came before the committee it appeared that there would be no deficit in the budget, and even the committee rejected it. When it came before the House on a second reading, it was rejected by a large majority, only the Conservatives and National Liberals voting for it.

The other two bills mentioned in the speech from the throne were never even laid before the Reichstag. A bill dealing with the regulation of the imperial finances was defeated. The whole accomplished by the Reichstag in its five months' sittings, amounted to the adoption of the budget, 2 bills dealing with the taxation of sugar and spirits, a customs-laws amendment bill, a measure providing for the punishment of slave trading, 2 bills granting pensions to veterans or their widows and orphans, and a few minor proposals. Such lack of positive results has never been equaled by any Reichstag. The sessions closed on May 24.

**Socialism.**—The unsuccessful attempt of the German Government to combat socialism within the German Empire by means of repressive laws in the shape of the *Umsturzvorlage* only served to unite the socialists for stronger activity and helped to increase their numbers. Hitherto the strongholds of the socialists have been large cities and the industrial centers, but the distressing condition of the agrarian population contributed to swell the socialists' ranks in districts where formerly socialism was unknown. In order to meet the demands of this wing of the party for recognition in the party platform, an agrarian committee was appointed to draft amendments to the party principles, which were to be submitted to the Socialist Congress at its meeting at Breslau. The committee prepared a

programme of which the principal points were: The abolition of all administrative functions and of all privileges connected with real property, as well as of any remains of the feudal system; the preservation and increase of public landed property, the transfer of property in mortmain, of the forests, and of water power to the community, under the control of the representatives of the people; the introduction of a right of pre-emption for the communes in case of the sale of property by public auction, and the management of their property by the state and the communes on their own account, or by associations of rural laborers or small proprietors, or, if that was not attainable, by self-dependent tenants, under the supervision of the state or the commune; state credit for associations or for communes for the purpose of improving property; the payment by the empire or state of the expenses involved in the construction and repair of the public means of communication and of dams and dikes; the nationalization of mortgages and a reduction of the rate of interest thereon; state help for distress caused by the elements of Nature; and an extension of forest and shooting rights. This programme, although rejected by the congress, was declared by a resolution accompanying the rejection to form a basis upon which a new committee was to prepare amendments to be laid before the congress in 1896.

Great celebrations were prepared and held throughout the German Empire to commemorate the twenty-fifth anniversary of the victory of the German army over that of France. The socialistic press urged its adherents to refrain from taking part in these celebrations, and especially from celebrating the fall of Sedan, on the ground that it would be an unbrotherly act toward the French socialists. In a good many places the socialists announced their intentions of holding meetings to denounce these celebrations, of which Emperor William was the prime mover. Their press assailed the memory of Wilhelm I in recalling his repressive laws. On Sept. 2, 1895, the anniversary of the battle of Sedan, Emperor William II, in proposing a toast to the Guards at a banquet in the White Hall of the royal castle, concluded his speech as follows: "Yet in the sublime and noble joy of these celebrations a note has been struck which truly has no place there. A rabble unworthy to bear the name of Germans have dared to revile the German people, have dared to drag in the dust the sacred person of their late honored Emperor. May the whole people find strength to repel these monstrous attacks! If not, I now call upon you to resist this treasonable band, to wage a war which will free us from such elements." The Social-Democratic papers took up this speech and attacked the Government and the Emperor in violent articles. This and the aspersions upon Wilhelm I led to the arrest of several of the most prominent socialistic editors, and the institution of charges against them for *lèse-majesté*. A number of socialistic newspapers were confiscated and, with the aid of some old Prussian laws, repressive measures against the socialists were adopted throughout the Kingdom of Prussia. The plant of the "Vorwärts," the leading paper of the socialists in



Berlin, was seized. Prominent socialists were arrested, their houses searched, and all papers and documents confiscated, with the result that the headquarters of the Social-Democratic party was removed to Hamburg, where the Prussian laws are not applicable.

**The Agrarian Movement.**—When, in 1893, the Agrarian League was formed, there was little indication that within two years the Agrarians would succeed in arousing the whole country on the question of agrarian reforms. Nevertheless, the question of relieving the distressing condition of agriculture has assumed tremendous proportions. In 1894 Count Kanitz proposed a measure of relief which, although coming from a staunch Conservative, was socialistic in its scope. He proposed that the Government should go into the grain business, that it should have an absolute monopoly of the importation and sale of foreign cereals, and should fix a price for domestic cereals which would be large enough to yield a comfortable profit to the producer. This proposal was placed before the Prussian Herrenhaus and adopted there by a large majority. It was discussed in the press, in the Reichstag, by citizens and ministers of state, but the Government did not declare itself either way. It recognized that something had to be done to save agriculture in the empire from ruin, but it did not care to commit itself to a scheme like the Kanitz proposal. On the other hand, it had no definite measure of relief which it might substitute, and thus satisfy the clamor of the Agrarians for relief, which had been promised by the Government again and again. In order to escape from this embarrassing position and show the good intentions of the Government, Emperor Wilhelm called a meeting of a select committee of the State Council at Berlin on March 12, 1895, to inquire into the unfavorable condition of agriculture, its causes, and its remedies. Two proposals were laid before the State Council, viz., Count Kanitz's motion and the currency problem. The deliberations of that body lasted ten days, with the result that the Kanitz motion was declared impracticable, while on the currency question the decision was neither for nor against a gold currency; it simply declares that an investigation of the currency question might be serviceable. The reasons for rejecting the Kanitz motion are: That such an extensive enterprise is not compatible with a proper conception of the position of the state in the industrial and economic life of the country; that the organization of the state is not suited to such a task; that such an undertaking would arouse discontent and suspicion, and would damage commerce in general and the export trade in particular; and finally, that it was not reconcilable with the commercial treaties, as it would restrict the guaranteed freedom of trade. For the relief of agriculture the Council recommends the reduction of the costs of production and transport, protection of the sugar and spirit industries, and a reform of the loan system.

This decision gave very little satisfaction to the Agrarians, who renewed their attacks against the Government and increased their demands. Count Kanitz's motion, though thought to be

dead, was reproduced and submitted to the Reichstag, and, contrary to all expectations, it was referred to a committee. One of the principal and most violent leaders of the Agrarians was the editor of the Berlin "Kreuz-Zeitung," Baron von Hammerstein, who for years had been the leader of the Conservative party. In August, 1895, rumors were heard that he was about to resign his position as managing editor, and at the same time appeared charges against him in several newspapers for mismanaging the funds of the "Kreuz-Zeitung." These charges were denied by Baron von Hammerstein, and actions for libel were instituted against the responsible editors of the respective papers. Shortly before the trial of these actions Baron von Hammerstein absconded, leaving his personal effects in charge of a governess, whose wages he forgot to pay in his hurry to get away. The poor woman was left destitute, and, in order to obtain what was due her, she sold Hammerstein's correspondence to the editors of the Social-Democratic paper "Vorwärts." This correspondence contains compromising letters of members of the Conservative and Agrarian parties, addressed to von Hammerstein, and the "Vorwärts" published one letter after another. Von Hammerstein was apprehended in Athens on Dec. 30, 1895, and brought back to Germany.

**GIFTS AND BEQUESTS.** The following list comprises the most notable gifts and bequests for public purposes, of \$5,000 each and upward in amount or value, that were made, became operative, or were completed in the United States during 1895. It excludes the ordinary denominational contributions for educational and benevolent purposes; State and municipal appropriations to public and sectarian institutions; and the Fayerweather bequests to colleges (see "Annual Cyclopædia" for 1894), concerning which the New York Supreme Court, in December, 1895, set aside the deed of trust, allowing the original bequest to stand. The known value of the gifts and bequests enumerated exceeds \$32,800,000.

**Abbott, George A.**, Dexter, Me., gift to the town, a public-library building, July 2, 1895; cost, \$30,000.

**Abbott, Vasta**, Concord, N. H., bequests to local charitable and religious organizations, \$27,500.

**Adams, Frederick O.**, Kingston, N. Y., bequests to the city for a town hall and public library, now available, over \$80,000.

**Adrianse, Mrs. John P.**, Poughkeepsie, N. Y., bequests to local churches and charities, \$6,000.

**Aldridge, Sarah M.**, Newark, N. J., bequests to the Church of the Redeemer \$1,000, and to three local charities the reversion of \$5,000.

**American Education Society**, gift from a New England friend for an endowment, \$60,000.

**American University**, Washington, D. C., gift from a woman of New York city for a chair of history, \$100,755; also gifts from friends for a hall of history, \$150,000.

**Anderson, Mrs. A. A.**, Greenwich, Conn., gift to the city, a public library.

**Anderson, J. Henry**, Brooklyn, N. Y., bequests to Plymouth Church, Seney Hospital, Children's Aid Society, and Consumptives' Home, in equal parts, \$46,000.

**Atwill, Mrs. Cornelia A.**, New York city, gift to Columbia College for 2 art scholarships, \$6,000.

**Avery, Samuel P. and Mary O.**, New York city, gift to Architectural Library of Columbia College, \$10,-

000, making total money gift \$25,000, besides the costly collection of books.

**Ayer, Edward E.**, Chicago, Ill., gift to the Newberry Library of that city, his collection of Americana, comprising about 9,000 books, drawings, maps, manuscripts, photographs, etc., representing thirty years' research.

**Ballantine, John H.**, Newark, N. J., bequests to American Bible Society, Boards of Foreign and Domestic Missions of the Reformed Church, and to 5 charitable institutions, each \$5,000; total, \$40,000.

**Ballantine, Mrs. John H.**, Newark, N. J., gift to the Female Charitable Society, \$10,000.

**Ballou, Maturin M.** See OBITUARIES, AMERICAN.

**Ballou, Newton H.**, M. D., Lansingburg, N. Y., bequest to St. Luke's Church, of Mechanicsville, \$40,000.

**Banigan, Joseph J.**, of Providence, R. I., gift for a chair of political economy in the Catholic University of America, \$50,000; also, with his wife, gift of the St. Maria Home for Working Girls, Providence, R. I., dedicated Jan. 15, 1895.

**Barnard College**, New York city, gifts from 2 friends, each \$100,000, one toward a new building.

**Barnard, Henry**, New York city, gift to the Montefiore Home, an apartment house; equity, \$75,000.

**Barr, Miss Ellen M.**, New Ipswich, N. H., bequest to Radcliffe College (Harvard) for scholarships, residuary estate estimated at \$40,000.

**Bates College**, Lewiston, Me. (friends of), gift of Roger Williams Hall for Cobb Divinity School.

**Beckwith, Abby H.**, Providence, R. I., several charities; \$7,000 in all.

**Belleville (N. J.) Reformed Church**, gift from friends, a chapel; cost, \$9,000.

**Berkeley Divinity School**, Middletown, Conn., friends of, gift for construction of Williams Memorial Library, \$20,000.

**Bishop, Charles R.**, San Francisco, Cal., gifts for schools and benevolent societies in the Hawaiian Islands, which had been sustained by the late Mrs. Bishop, aggregating \$800,000.

**Board of Education**, Brooklyn, N. Y., gift from friends, the Erasmus Hall Academy (chartered 1786) in Flatbush, for a high school; value, \$150,000.

**Brittin, Pemberton**, Newton, N. J., bequests to Dennis Library and Christ Church, of Newton, each \$5,000.

**Brown, Anna**, Quincy, Ill., bequests to Illinois Humane Association, \$70,000; Quincy Humane Society, \$14,000; Connecticut Humane Society, \$42,000; Louisiana Humane Society, \$42,000; Massachusetts Humane Society, \$14,000; Old Folks' Home, Quincy, \$55,000; Illinois Industrial School for Girls, \$5,000; and Quincy Woodland Orphan Home, \$5,000—in all, \$247,000; for other charitable purposes, \$103,000.

**Brown, Martha Wheeler**, Manchester, N. H., bequests to New Hampshire Home Missionary Society, \$3,000; Franklin Street Church, \$5,000; Woman's Aid and Relief Society, \$1,000; city of Manchester, \$500; and residue of her estate, estimated at over \$50,000, to Dartmouth College and the Manchester Children's Home.

**Browne, Abby B. K.**, Gloucester, Mass., bequests to Congregational societies, \$12,900.

**Bull, Mrs. Mary Putnam**, Tarrytown, N. Y., bequests to Davenport (Iowa) Academy of Natural Sciences, \$10,000; and to various churches and institutions, an aggregate of \$24,400.

**Burnham, Thomas Oliver Hazard Perry**, Boston, Mass. (see obituary in "Annual Cyclopaedia" for 1891), bequests distributed by executor to the Massachusetts General Hospital, residuary legatee, \$263,000; town of Essex, \$40,000; Massachusetts Institute of Technology, \$20,000; Tufts College, \$10,000; Home for Aged Men, in Boston, \$10,000; 9 charitable institutions, each \$5,000; and 4 others, each \$2,000; total, \$396,000.

**Burroughs, S. M.**, Medina, N. Y., bequests to John Parsons Presbyterian Church and Boxwood Cemetery, Medina, each \$25,000.

**Cady, David**, Amsterdam, N. Y., bequests to Amsterdam Library Association, a block of buildings, value,

\$10,000; and to benevolent organizations, an aggregate of \$5,500.

**Cady, Mrs. Henrietta**, Sing Sing, N. Y., bequests to the Board of Home Missions of the Presbyterian Church, for Indian Schools in Alaska, \$11,000; Board of Foreign Missions, \$5,000; and the American Female Guardian Society, \$5,000.

**Callender, Elizabeth**, Newport, R. I., bequests to Presbyterian Board of Relief for Disabled Ministers, \$5,000; and for a free bed in Newport Hospital, \$3,000.

**Campbell, Miss Clara**, Ironton, Ohio, bequests, available on the death of certain relatives, to the Methodist Woman's Home Missionary Society and the International Missionary Alliance, an estate, estimated at \$100,000.

**Cannon, Henry Le Grand**, New York city, bequests to National Academy of Design, for prizes, \$3,000; to the University of Vermont, his East Indian curios and bric-a-brac and \$2,500; and to St. Paul's Church, Burlington, Vt., for chime of bells, \$2,500.

**Carleton, James H.**, Haverhill, Mass., bequests, made available by the death of his sister, to the Haverhill City Hospital, \$25,000; Haverhill Public Library, \$15,000; North Church, Haverhill, \$30,000; Young Men's Christian Association, \$15,000; Carleton College, Northfield, \$8,000; city of Haverhill, for a high-school scholarship, \$5,000; American Commissioners for Foreign Missions, \$5,000; American Home Missionary Society, \$5,000; Andover Theological Seminary, \$5,000; Riverside Congregational Society, Haverhill, \$5,000; Union Congregational Church, \$6,000; American Bible Society, \$2,000; Old Ladies' Home, Haverhill, \$3,000; Female Benevolent Society, \$2,000; Whittier Birthplace Association, \$1,000; in all, \$132,000.

**Carnegie, Andrew**, New York city, gift to the city of Pittsburg, Pa., a public library and art gallery, with endowment of \$1,000,000; dedicated Nov. 5. See also NEW YORK BOTANIC GARDEN.

**Carthage (Ill.) College**, gifts from friends, aggregating \$25,000.

**Chandler, Mrs. P. A.**, Andover, Mass., bequest to Abbott Academy, \$5,000.

**Chase, William L.**, Brookline, Mass., bequests to St. Paul's Church, Brookline, \$5,000; 2 charities, each \$2,500; the Papyrus Club, his collection of Papyrian books; Harvard College, for a medical scholarship, \$5,000; Massachusetts General Hospital, for a free bed, \$5,000; in reversion, to Massachusetts General Hospital, \$10,000, Massachusetts Institute of Technology, \$10,000, and 2 charities, each \$5,000; and Harvard College, a contingent residue; total known, \$50,000.

**Chedsey, Nathan R.**, New York, bequest to Congregational Church in Durham, Conn., \$7,000.

**Cheney, Benjamin P.** See OBITUARIES, AMERICAN.

**Childs, Gardner**, Mansfield, Mass., bequests to American Baptist Missionary Union, \$36,666; Baptist Home Missionary Society, \$26,666; and American Baptist Publication Society, \$26,666; total, \$89,998.

"**Christian Herald**," of New York city, gift to Armenian Relief Committee, \$5,000.

**Clarkson, Thomas Streatfield**, Potsdam, N. Y., heirs of, gift, a group of buildings, fully equipped and well endowed, opposite the New York State Normal School at Potsdam, for a school of technology; cost, about \$125,000; endowment, \$100,000.

**Clarkson, William Randolph**, New York city, bequests to Baptist Home Missionary Society of New York, \$5,000; Baptist Ministers' Home Society of West Farms, \$5,000; Young Men's Christian Association, and the Muhlenburg Hospital, Plainfield, N. J., each \$2,000; and to Clarkson Baptist Orphanage, the residue of his large estate, subject to life interest of his widow and sister.

**Cobb, Catherine P.**, Brockton, Mass., bequests to American Board and Congregational Home Missionary Society, each \$5,000; and to the Porter Church, Brockton, her Hollywood estate.

**Cochran, Mrs. William F.**, Yonkers, N. Y., gift of St. Andrew's Protestant Episcopal Memorial Church, \$40,000; consecrated Nov. 1.



**Colby, John F.**, Bangor, Me., bequests to Bangor Theological Seminary, \$5,000; American Missionary Society, \$5,000; Maine Missionary Society, \$5,000; 4 other charities, each \$1,000.

**Cole, John W.**, Watertown, N. Y., bequests to local institutions nearly all an estate of \$80,000.

**Converse, E. S.**, Malden, Mass., gift to Malden Hospital, \$50,000.

**Converse, John H.**, Philadelphia, gift to University of Vermont, a dormitory, cost \$120,000.

**Conway, Bernard**, Philadelphia, bequest to Archbishop Ryan, for the education and support of destitute orphans, \$100,000.

**Cooke, Miss Sara Louise**, New York city (died in 1892), bequest to the parish of St. Mary the Virgin, \$300,000. The money was used in the erection and furnishing of a church in West Forty-sixth Street; dedicated Dec. 8, 1895.

**Coolidge, Mrs. Susan G.**, Cambridge, Mass., bequests to Massachusetts General Hospital, real estate, market value, \$300,000; Massachusetts Institute of Technology, real estate; and Boston Port and Seaman's Aid Society and Boston Fire Department, the remainder of her entire property in equal parts. Contested.

**Crane, Mrs. Clarissa L.**, New York, bequests to public library, Quincy, Mass., \$20,000; Chapin Home, New York, \$10,000; New York Universalist Relief fund, \$5,000; State Auxiliary to Women's National Relief Society, \$5,000; Universalist General Convention, \$3,000; and to benevolent institutions in New York and Connecticut, \$12,000; total, \$55,000.

**Crockett, Mrs. George K.**, Springfield, Mass., bequest to Roanoke College, Salem, Va., \$5,000.

**Crossley, Edward**, Halifax, Nova Scotia, gift to Lick Observatory, California, the three-foot reflecting telescope made for A. A. Common, F. R. S., who gained the gold medal of the Royal Astronomical Society with it.

**Culver, Miss Helen**, Chicago, Ill., gift to the University of Chicago, \$1,000,000.

**Cunningham, James C.**, Brooklyn, N. Y., bequest to the Cathedral of St. John the Divine, New York, \$42,000. Contested.

**Davenport, John**, Bath, N. Y., bequest to Home for Orphan Girls in Bath, \$115,000.

**Davenport, Oliver**, Leyden, Mass., bequests to School for Indigent Girls, Bath, N. Y.; Missionary Society of the Methodist Episcopal Church, and American Bible Society, aggregate of \$10,000.

**Delaney, Rev. John T.**, Washington, D. C., bequests to Holy Name Church, \$5,000; and to Catholic charitable institutions, \$1,250.

**Delaplaine, John F.**, New York city, bequests to 11 charitable organizations, Protestant, Roman Catholic, and unsectarian, an aggregate of \$18,690.

**Denio, Sylvanus A.**, Boston, Mass., bequest to Boston Museum of Fine Arts, for purchase of modern paintings, \$50,000.

**De Peyster, John Watts**, New York, gifts, for an industrial home for girls at Tivoli, N. Y., a building, \$60,000; also a Methodist church building in the same place and a home for consumptives at Verbank, N. Y.; cost, \$30,000.

**Dodge, Isaac Brown**, Salem, Mass., bequests to Home Missionary and the American Bible societies, each \$500; and to Amherst College, \$60,000.

**Dwight, E. P.**, Philadelphia, gift to the Young Men's Christian Association, his country estate of 465 acres near Downingtown, \$30,000.

**Eaton, Homer W.**, Montpelier, Vt., gift to the city, 10 acres, and a building for a public hospital, to cost \$25,000.

**Edgar, Mrs. Jane E.**, New Rochelle, N. Y., bequests to Christ Church, Pelham, N. Y., and New York House and School of Industry, each \$5,000.

**Eldredge, Mrs. Elizabeth T.**, Newton, Mass., bequests to Home for Aged Men, \$25,000; Association for Relief of Aged Women, \$25,000; Massachusetts Hospital, for free beds, \$10,000; Grace Church, Newton, \$7,000; and 4 other institutions, \$8,000; total, \$75,000.

**Ellsworth, Eugene S.**, Chicago, Ill., gift to Ellsworth College, Iowa Falls, Iowa, a library, \$25,000.

**English, James**, New Haven, Conn., bequests to New Haven Hospital and New Haven Orphan Asylum, in equal parts, reversion of \$50,000.

**Ewbank, William H.**, Flushing, Long Island, gift to St. George's Protestant Episcopal Church of that place, buildings valued at \$30,000.

**Farwell, Joseph**, Unity, Me., bequests to Rockland, for charities, \$5,000; Universalist Church there, \$8,500; town of Unity, \$3,000.

**Fiske, Josiah**, Boston, heirs of, gift to Wrentham, a library, to cost \$30,000.

**Fitch, Mrs. Emily N.**, New Haven, Conn., bequest to Theological Seminary of Yale College, \$30,000.

**Fitz, Eustace C.**, Boston, bequests, conditional on his estate exceeding \$750,000, to Wellesley College, Newton Theological Seminary, American Baptist Missionary Union, and the Baptist Home Missionary Society, each \$10,000; and Brown and Colby Universities, each \$5,000; total, \$50,000.

**Fletcher, J. Sherman**, Belmont, Mass., gift for a public library in Westford, Mass., \$10,000.

**Flint, Mary C.**, Haverhill, Mass., bequests to the city hospital, public library, and Young Men's Christian Association \$50,000.

**Flower, Roswell P.**, New York city, gift to the Flower Hospital, \$5,000.

**Fox, Mary D.**, Philadelphia, bequests to Children's Hospital of Philadelphia, \$10,000; Association for the Relief of Women and Children, \$10,000; Protestant Episcopal Hospital, \$10,000; Christmas Fund for Disabled Clergymen, etc., \$10,000; Indian Rights Association, \$5,000; and Pennsylvania Society for the Prevention of Cruelty to Animals, \$1,000.

**Gage, G. G.**, Topeka, Kan., gift, a monument to the members of the Second Kansas Volunteers who fell at Big Blue, near Kansas City, Oct. 22, 1864, \$10,000.

**Gale, Cyrus**, Northboro, Mass., gift, a public-library building; dedicated June 12, 1895; \$30,000.

**Garrett, Walter**, Philadelphia, bequests to Home for Blind Men, \$10,000; Hahnemann Hospital, \$50,000; Pennsylvania Hospital, \$35,000; and Children's Homoeopathic Hospital, \$15,000.

**Gilbreth, Mrs. Martha Bunker**, Brookline, Mass., gift to Radcliffe College (Harvard), a botanical collection made by her daughter Mary.

**Gill, J. S.**, Ludlow, Vt., gift to Grand Lodge of Vermont, I. O. O. F., property valued at \$15,000.

**Gittings, Mrs. Charlotte C.**, Baltimore, bequests to Union Protestant Infirmary, \$10,000; to Church Home and Infirmary, \$10,000; to other charities, \$20,000.

**Glover, Albert**, Boston, bequest to 20 local benevolent institutions, the reversion of \$20,000.

**Gould, Helen Miller**, New York, gift to University of the City of New York, 2 scholarships endowed with \$5,000 each.

**Green, Mrs. Sarah Helen**, New York, gift to Lawrenceville (N. J.) School, founded by her husband, a chapel, cost over \$100,000.

**Griswold, Seneca O.**, bequest to Yale College, \$75,000; contested.

**Hackley, Charles S.**, Muskegon, Mich., gift for a manual training school, \$135,000.

**Hagenmeyer, Mrs. F. E.**, Astoria, Long Island, gift for a hospital, \$6,000.

**Halsey, Mrs. Emma G. K.**, New York city, gift to the Flower Hospital, \$5,000.

**Haly, Mrs. Sara Haldeman**, Harrisburg, Pa., bequests to Harrisburg Public Library, \$60,000 and a building site; Home for the Friendless, \$5,000; City Hospital, \$10,000; St. Stephen's Protestant Episcopal Church, \$5,000; and Children's Industrial Home, \$3,000—total in money, \$83,000; also to local charities her residuary estate, estimated at \$200,000.

**Handley, John**. See OBITUARIES, AMERICAN.

**Hanna, Henry**, Cincinnati, gift to University of Cincinnati, for building, \$45,000.

**Harper, Edward B.**, New York, bequest to Masonic Hall and Asylum fund, for a hospital or industrial school, \$5,000.

**Hartean, Henry**, Brooklyn, N. Y., bequest in reversion for erection of a statue of Lafayette in Prospect Park, \$35,000, and to 5 institutions the residue of his estate.

**Harrison, Charles C.**, Provost of the University of Pennsylvania, gift to the university for encouragement of liberal studies, \$500,000.

**Haskell, Mrs. Caroline T.**, gift to Chicago University for lectures in Bombay, India, on the relations of the religions of the world, \$20,000.

**Hayes, Francis B.**, Lexington, Mass., bequests, to Boston, his large library; to Massachusetts Horticultural Society, \$250,000; contested.

**Helme, Mrs. George W.** and **Mr. and Mrs. George A. Helmetta, N. J.**, gift to the Young Men's Christian Association of New Orleans, La., a new building, dedicated in November.

**Herron, John**, Indianapolis, bequests to Indianapolis Art Association \$200,000, and to several benevolent institutions, smaller sums.

**Hill, James J.**, President of the Great Northern Railway Company, gift, building and endowment of Catholic Seminary, near St. Paul, Minn., total value, \$500,000.

**Hoffman, Rev. Eugene A.**, D. D., New York city, gift to the new St. Luke's Hospital, \$20,000.

**Houghton, Clement S. and Elizabeth G.**, Boston, Mass., gift to the town of Littleton, a library; cost, with ground, \$35,000.

**Houghton, Henry Oscar.** See OBITUARIES, AMERICAN.

**Honston, Henry H.**, Philadelphia, bequest to Protestant Episcopal Church, Wissahickon Heights, ground and church buildings, \$100,000.

**Hubbard, William**, Stamford, Conn., bequest to Universalist church there, \$31,000.

**Hubbell, Mrs. Eliza A.**, New York, bequest to Board of Extension, Methodist Episcopal Church, Philadelphia, \$15,000.

**Huepfel, Anton**, East Orange, N. J., bequests to hospital and orphan asylum, each \$5,000.

**Ingalls, David S.**, Springville, N. Y., bequests to Board of Home Missions, \$200,000; Board of Foreign Missions, \$150,000; Board of Relief for Disabled Ministers, \$50,000—all of the Presbyterian Church; and to the Young Men's Christian Association, business property valued at \$100,000. Contestants gained \$175,000 out of these sums.

**Inslee, Sammel**, New York city, bequests to 7 charitable and educational institutions, each \$5,000.

**Irwin, Robert**, New York city (died Aug. 13, 1892), bequests, on specific contingencies, to New York Post-Graduate School and Medical Hospital, \$250,000; to 13 benevolent and religious institutions, each \$10,000; and to 13 others, each \$5,000—in all, \$445,000. In December, 1895, a grandson, who had been left \$700,000, and was a minor at the time of probate, begun a contest of the clauses containing the charitable bequests, in which the beneficiary institutions joined issue.

**Isabella Heimath, The**, New York city, gifts from friends, \$6,425.

**Jackson, Cornelia Maria**, Providence, bequest to Tufts College, \$100,000, of which \$75,000 must be used for a college for women.

**Jeanes, Sammel**, estate of, gift to promote education, libraries, and moral literature, and to support Friends' schools outside of Philadelphia, \$200,000.

**Jesup, Morris K.**, New York city, gift to American Museum of Natural History, an invaluable collection of American woods.

**Jewish Manna Training School**, in Boston, gift from anonymous friend for instruction of children of Russian refugees, \$20,000.

**Johns Hopkins University**, Baltimore, gift from a friend, the great Oriental library of the late Prof. C. F. A. Dillman, of the University of Berlin, over 5,000 volumes.

**Johnson, Mrs.**, Walpole, Mass., gift to Woman's Board of Missions (Congregational), \$5,000.

**Jones, John D.**, New York, bequests, reversion of \$20,000 to Cathedral of St. John the Divine; to 2

churches on Long Island, each \$1,000; and to Metropolitan Throat Hospital a release from all its obligations to him.

**Keerl, Mrs. Thomas**, Baltimore, bequest to the Protestant Episcopal diocese of Maryland, \$93,000.

**Kellman, Mrs. Jane E.**, New York, bequest to New York Deaconess Home and Training School of the Methodist Episcopal Church, \$20,250.

**Kelly, Eugene**, New York (see obituary in "Annual Cyclopædia" for 1894), executors of, gifts to 18 Hebrew charities, an aggregate of \$9,500.

**Keney, Mrs. Walter**, Hartford, Conn., bequest to Watkinson Farm School, \$20,000.

**Kenyon, Whitman W.**, and **Albro J. Newton**, Brooklyn, N. Y., gift to the House of St. Giles the Cripple, building and ground for a new home.

**Kimball, Moses.** See OBITUARIES, AMERICAN.

**Knowlton, Augustus**, Gardner, Mass., bequest for a home for elderly people, his estate, valued at over \$100,000.

**Kurhardt, Mrs. C. H.**, New York city, gift to the New York Homœopathic Medical College and Hospital, \$15,000.

**Lafon, Thomy**, New Orleans, bequests for a Catholic asylum for boys, the Berchman convent and asylum for girls, and a home for the indigent aged; the latter dedicated Sept. 29, 1895; cost, \$28,000; also a residuary estate yielding \$500 a month for support of the institutions.

**Lane, Levi C.**, M. D., San Francisco, gift to the public, the Lane Free Hospital; dedicated Jan. 2, 1895; cost, \$250,000.

**Learnard, William H.**, Boston, bequests to 12 local charitable institutions and the First Baptist Church, an aggregate of \$16,000.

**Leavitt, James T.**, New York, bequests to New York Orthopædic Dispensary and Hospital, American Board, the American Home Missionary Society of New York, the American Bible Society, and American Missionary Association, each \$5,000; and to Normal Institute, Hampton, Va., for scholarships, \$20,000 in reversion.

**Lewis, Allen C.**, New York, for the establishment in Chicago of an institute to educate the young for business vocations, his whole estate, to be held till it will realize \$800,000.

**Lick, James**, San Francisco (died Oct. 1, 1876), bequests distributed by trustees to Academy of Sciences and Society of California Pioneers, each \$600,000.

**Lilly, Eli**, Indianapolis, gift for a home for sick children in that city, the homestead of the late Walter Q. Gresham.

**Loomis, Alfred, M. D.** See OBITUARIES, AMERICAN.

**Lotsy, Dr. John P.**, director of the Dutch Botanical Gardens in Java, gift to the Woman's College, Baltimore, Md., his entire herbarium of over 5,000 sheets, 250 bottled specimens, numerous alcoholic specimens, and a large number of rock fragments bearing lichens, the whole representing his out-of-door work since boyhood.

**Low, Josiah O.**, Newport, R. I., bequest to Polytechnic Institute, \$5,000.

**Low, Seth**, President of Columbia College, gift to the trustees, the funds necessary to erect the new college library building on Morningside Heights. The library will cost over \$1,000,000. In accordance with President Low's wishes, and in honor of his munificence, the trustees established 12 scholarships in the college for Brooklyn boys and 12 in Barnard College for Brooklyn girls, and agreed to establish 8 annual university scholarships.

**Mack, Mrs. Esther C.**, Salem, Mass., bequests, now available, to American Unitarian Association \$70,000, and for an industrial school in Salem her residuary estate, estimated at \$200,000.

**Mack, William, M. D.**, Salem, Mass., bequests to American Unitarian Association, \$35,000; to Salem Fraternity, the reversion of \$20,000; and to Essex Institute and Salem Fraternity, his residuary estate.

**McKean, Thomas**, Philadelphia, gifts to University of Pennsylvania, \$100,000.



**McMahon, Mgr. James**, gift to Catholic University of America the Hall of Philosophy; dedicated Oct. 1, 1895; cost, nearly \$400,000.

**McMillen, Emerson**, New York, gift to the University of Ohio to equip an astronomical observatory, \$10,000.

**McNamara, Edward**, New York, bequests to charitable institutions, payable on the death of his widow and son, \$9,750.

**Maghee, Miss Mary**, New York, bequest to Metropolitan Museum of Art, outright \$5,000 and conditionally \$10,000 more.

**Mainzer, Bernhard**, New York, bequest for charitable organizations, 4 per cent. of his estate, valued at \$700,000.

**Meigs, John G.**, Philadelphia, bequest to Philadelphia Academy of Natural Sciences, the scientific library and instruments of his son, the late James A. Meigs, M. D., and \$20,000.

**Merian, John J.**, Brooklyn, N. Y., bequests to local charities, \$9,000.

**Miner, Alonzo A.**, D. D. See OBITUARIES, AMERICAN. **Montefiore Home for Chronic Invalids**, New York, gifts from Jacob H. Schiff and Lyman G. Bloomingdale, toward a country home for consumptives, each \$25,000.

**Mount Holyoke (Mass.) College**, Springfield alumnae of, gifts for endowment fund, \$21,000.

**Myer, Mrs. Eleanor**, Katsbaan, N. Y., bequests to American Tract Society, \$1,000; American Bible Society, \$1,000; institutions of the Reformed Church, \$6,000; and to mission boards of that Church her residuary estate.

**New York Botanic Garden**, New York city, incorporators of, gifts from friends, \$250,000. Under the act of incorporation it was agreed that when this amount had been subscribed the city would set apart a tract of 250 acres in Bronx Park for the garden, and issue bonds for \$500,000 to provide buildings. The subscribers for \$5,000 each or upward were J. Pierpont Morgan, Columbia College, Cornelius Vanderbilt, Andrew Carnegie, John D. Rockefeller, Darius O. Mills, and Addison Brown, each \$25,000; William E. Dodge, James A. Scrymser, and William C. Schermerhorn, each \$10,000; and Charles P. Daly, Oswald Otten-dorfer, Samuel Sloan, George J. Gould, Helen M. Gould, John S. Kennedy, William Rockefeller, and James M. Constable, each \$5,000.

**Oberlin College**, Oberlin, Ohio, gift from women of Cleveland, to endow a woman's professorship, \$50,000.

**O'Brien, Eliza**, Boston, bequests to Catholic institutions, \$6,600.

**O'Connell, Rev. Joseph J.**, D. D., gift to the Church of St. Mary Star of the Sea, Brooklyn, a marble altar, cost \$20,000.

**Peabody, Mary D.**, bequest to Catholic university at Washington, D. C., for scholarships, her residuary estate, \$20,000.

**Pearsall, Phoebe**, New York, bequests to local institutions chiefly of the Protestant Episcopal Church, an aggregate of \$45,000.

**Pearson, George**, Green Spring, Ohio, bequest to American Protective Association, \$10,000.

**Pease, George L.**, Brooklyn, N. Y., bequests to Brooklyn Society for the Prevention of Cruelty to Children, \$20,000; Industrial School Association and Home for Destitute Children, \$10,000; Protestant Orphan Asylum, \$10,000; and Brooklyn Nursery and Sheltering Arms, each \$5,000.

**Pepper, William**, M. D., Philadelphia, gift to the University of Pennsylvania, a laboratory of clinical medicine, cost \$50,000, and an endowment for it of \$50,000; dedicated Dec. 4, 1895.

**Perkins, Joseph T.**, Brooklyn, N. Y., bequests to Church Charity Foundation of Long Island, \$25,000; Home For Aged Men, \$25,000; Industrial School Association, \$20,000; and Brooklyn Institute, \$10,000; total, \$80,000.

**Pittsburg, Pa.**, gift from the Fort Pitt Street Railway Company, for a zoological garden, \$100,000.

**Plumb, Horace S.**, Bridgeport, Conn., gift to the town of Huntington, Conn., a library, dedicated Dec. 4.

**Polhemus, Mrs. Caroline H.**, Brooklyn, N. Y., gift to Long Island College Hospital, a dispensary, cost \$250,000, and an endowment for it of \$250,000.

**Pope, Albert A.**, Hartford, Conn., gift to the city, for enlargement of the public park grounds, 16 acres.

**Powers, George W.**, New York, bequests to local charities aggregating \$10,000.

**Pulling, Elizabeth M.**, New York, bequests to the Church of the Incarnation and the Protestant Episcopal Missionary Society, each \$5,000.

**Pullman, George M.**, Chicago, gift to Universalist congregation, Albion, N. Y., a church edifice, cost \$80,000.

**Pyne, Percy R.**, New York, bequests to the Young Men's Christian Association, St. Luke's Hospital, and American Museum of Natural History, each \$20,000.

**Pyne, Mrs. Percy R.**, New York, gift to the Protestant Episcopal Mission Society, for a chapel in Broome street, \$76,000; building dedicated Nov. 5.

**Quinoy, G. H.**, of Massachusetts, bequests to Homœopathic Hospital, Boston, \$5,000; to other institutions, an aggregate of \$8,000.

**Randidge, George L.**, Boston, bequest to provide summer excursions for poor children, \$50,000.

**Renwick, James**. See OBITUARIES, AMERICAN.

**Reynolds, Mrs. Mary Esther**, gift to University of Chicago, \$250,000.

**Rieckhoff, William**, Orange City, Iowa, bequest to Iowa College, \$35,000.

**Rockefeller, John D.**, New York, gifts to Chicago University, \$175,000; also unconditionally for endowment fund, \$1,000,000. He pledged \$2,000,000 more on conditions open till Jan. 1, 1900, of which \$1,000,000 became payable in December, 1895, by reason of a gift of like amount, making his gifts to the institution aggregate \$6,425,000. Also to the village of Tarrytown, N. Y., ground and a high-service water tower, valued at \$50,000.

**Root, Mrs. Francis H.**, Buffalo, N. Y., bequest to the American University, Washington, D. C., \$25,000.

**Rouss, Charles Broadway**, New York, gifts to the University of Virginia, \$25,000; to Confederate Monument Association, \$5,000.

**Rust, Elbridge**, Peabody, Mass., bequest to Tufts College to aid poor students, the reversion of \$50,000.

**St. Luke's Hospital**, new, New York, gifts from friends, \$200,000.

**Saltonstall, Leverett**, Brookline, Mass., bequest to Harvard University, for a scholarship, \$5,000.

**Sampson, Calvin P.**, North Adams, Mass. (died Sept. 28, 1893), bequests to the American Baptist Missionary Union, Boston, \$100,000; American Baptist Home Missionary Society, New York, \$100,000; John B. Stetson University, De Land, Fla., \$70,000; Conference of Baptist Ministers in Massachusetts, \$30,000; Judson Memorial, New York, \$27,500; First Baptist Church, North Adams, subject to a life interest, \$25,000, and outright \$10,000; Massachusetts Baptist Charitable Society, \$20,000; North Adams Hospital and Grande Ligne Mission, Canada, each \$15,000; First and Grace Baptist Churches, Washington, D. C., each \$10,000; and First Baptist Church, Stamford, Vt., \$5,000—total paid in 1895 by the executor, \$437,500; residue for the American Baptist Missionary Union, \$30,000; total bequests, \$467,500.

**Sanford, Stephen**, Amsterdam, N. Y., gift to the City Hospital, \$5,200, supplementing previous gifts of \$8,500.

**Savage, Sarah Ann**, New York, bequests in reversion to Missionary Society of St. Paul, \$9,000; Hospital for Consumptives, \$4,500; and Home for the Aged of the Little Sisters of the Poor, \$4,500.

**Sawyer, Samuel E.**, Gloucester, Mass., bequests for a lyceum and free library, \$120,000; for Ravenswood Park, \$60,000; and for a village chapel at Fresh Water Cove, \$4,000.

**Schermerhorn, F. Augustus**, New York, gift to Columbia College, the Townsend Library of National, State, and Individual War Records, a unique collection for the purchase of which Congress had been asked to appropriate \$50,000; also \$4,000 to pay the cost of indexing it.



**Schermerhorn, William G.**, Chairman of Board of Trustees of Columbia College, New York city, gift for a college building on the new site, \$300,000.

**Schofield, Miss Mary**, Woonsocket, R. I., bequests to various charities, \$9,000.

**Scoville brothers**, Buffalo, N. Y., gift of a public library, Salisbury, Conn.; dedicated July 11, 1895; cost, \$25,000.

**Searles, Edward F.**, Great Barrington, Mass., gifts to the town, three large tracts of land for a public park, a ladies' picnic ground, and an athletic field.

**Shedd, William Greenough Thayer**, New York (see obituary in the "Annual Cyclopædia" for 1894), bequest to the University of Vermont, his large library.

**Shelmerdine, William H.**, Philadelphia, gift to the First Methodist Episcopal Church in Germantown, \$25,000.

**Sherman, Jennie**, Chicopee, Mass., bequests to the city a home for working girls or old women, and to 12 benevolent institutions, an aggregate of \$10,300.

**Shimer, Mrs. T. K. W.**, Mount Carroll, Ill., gift to the University of Chicago, for a girls' training school, the property of the Mount Carroll Female Seminary and an endowment of \$150,000, total value \$250,000.

**Silas Bronson Library**, Waterbury, Conn., gift from friends, a collection of nearly 2,000 mineralogical specimens from the World's Columbian Exposition.

**Silliman, Horace B.**, M. D., Cohoes, N. Y., gift toward a new Presbyterian church building there, \$50,000.

**Skinner, William**, Holyoke, Mass., gift to Northfield Girls' Seminary, a gymnasium, cost \$35,000.

**Sloane, Mr. and Mrs. William D.**, New York, joint gift to the Sloane Maternity Hospital, for an addition, \$300,000. Mrs. Sloane endowed the original building with \$250,000, and has promised to meet all the expenses of the institution during her lifetime.

**Sloane, Mrs. William D.**, Mrs. H. T. Auchmuty, Mrs. Isaac Bell, William C. Schermerhorn, Morris K. Jesup, and others, New York, gift, a home for consumptives in Denver, Col., cost \$100,000.

**Smith, Agnes H.**, Boston, Mass., bequests to Home for Aged Couples, \$10,000; trustees of Donations for Rectory, \$10,000; and two relief societies, each \$1,500.

**Smith estate**, of Massachusetts, gift to Wilbraham Academy for a gymnasium, \$20,000.

**Smith, Mrs. Heloise C.**, West Chester, Pa., bequests to the Protestant Episcopal City Mission, her country seat valued at \$100,000, with a cash endowment.

**Smith, Mrs. James W.**, Brooklyn, N. Y., gift to South Third Street Industrial School, \$25,000.

**Smith, Richard**, Philadelphia, bequest, now available, for the erection and maintenance in Fairmount Park of a monumental memorial of distinguished citizens of Philadelphia who took part in the civil war, and also a playhouse and grounds for children, his entire estate, estimated at over \$1,000,000.

**Smith, Sebastian B.**, D. D. See OBITUARIES, AMERICAN.

**Souberbeillo, Mme.**, daughter of the late Horace F. Clark, bequest to Williams College, \$20,000.

**Spalding, Edward, M. D.**, Nashua, N. H., bequests to Dartmouth College, \$5,000; American Board, \$5,000; American Missionary Association of New York, \$5,000; New Hampshire Orphans' Home, \$5,000; Tuskegee (Ala.) Normal Institute, \$5,000; New Hampshire Bible Society, \$4,000; and First Congregational Church, Nashua, \$1,000; total, \$30,000.

**Stachelberg, Michael**, New York, bequests in reversion to 5 Hebrew benevolent institutions, an aggregate of \$10,000.

**Stearns, George M.**, Watertown, Mass., gift to First Parish Church, an organ, value \$5,000.

**Stevens family**, Hoboken, N. J., gift toward a building for a free public library and a manual training school, \$26,000.

**Stevens, Paron**, New York, bequest to the town of Claremont, N. H., now available, \$40,000.

**Stickney, Mrs. Elizabeth H.**, Chicago, gift to the parish of St. James's Protestant Episcopal Church, a rectory, cost \$20,000.

**Stone, David M.** See OBITUARIES, AMERICAN.

**Stranahan, Mrs. James S. T.**, Brooklyn, N. Y., gift to the University of Michigan, to found scholarships, \$25,000.

**Straus, M.**, Elyria, Ohio, gift to Oberlin College, property valued at \$40,000.

**Sugden, Richard**, Spencer, Mass., bequests to the Public Library, buildings valued at \$35,000; and for an old ladies' home, his residence property.

**Sutro, Adolph**, San Francisco, gifts to the regents of the University of California, 13 acres within the city limits on which to erect buildings for the affiliated colleges of the university; and to the city, an adjoining tract of similar size as a site for a library of over 200,000 rare volumes, for which he will erect a building. The present value of the gifts is about \$1,500,000, and when the improvements and library building are finished it will be about \$2,000,000.

**Syracuse University**, gift from a friend, \$10,000.

**Taylor, Henry Augustus**, Milford, Conn., gift to the town, a library building.

**Thorn, John**, Utica, N. Y., bequests to Tabernacle Baptist Church, Utica, \$20,000; Home for Aged Men, Utica, \$15,000; and Baptist Home Missionary Society, Baptist Missionary Union, New York State Baptist Convention, Baptist Publication Society, and New York State Baptist Educational Society, each \$5,000; total, \$60,000. In life he is believed to have given over \$500,000 to charitable and educational institutions in Utica.

**Thorne, Jonathan**, Millbrook, N. Y., children and grandchildren of, school building with public hall and library, cost \$100,000.

**Townsend, Amos**, Cleveland, Ohio, bequests to local charities, \$13,000; and to Lakeside Hospital, his residuary estate estimated at \$40,000.

**Turner, Mrs. Mary B.**, Boston, Mass., bequests to 12 benevolent institutions in Boston and Randolph, an aggregate of \$36,000; and to Massachusetts General Hospital, Home for Aged Couples, Home for Aged Men, Home for Aged Women, and Kindergarten for the Blind, her residuary estate, in equal shares.

**Tuskegee (Ala.) Normal Institute**, gift from friend, for a chapel, \$12,000.

**Tuttle, Mrs. Sarah**, Hartford, Conn., bequests to the Old People's Home, \$10,000; Larrabee fund, \$6,000; Hartford Hospital, \$5,000; Hartford Orphan Asylum, \$5,000; other institutions, \$3,000.

**Underhill, Mrs. Elizabeth B.**, New York, bequest for a free church and congregation in New York city, to be under the jurisdiction of the Protestant Episcopal Church, \$75,000.

**Union College**, Schenectady, N. Y., Western alumni of, gift, funds for a new dormitory.

**University of Michigan**, gifts for a woman's gymnasium, from 2 of the regents, \$35,000; and from friends, \$15,000.

**University of Pennsylvania**, gifts for the naming of an apartment in the new dormitory system, from Charles C. Harrison, Alfred C. Harrison, Thomas F. Dolan, Robert E. Foerderer, William M. Singerly, Hugh Craig, Jr., Alice D. Craig, Thomas McKean, E. H. Fidler, J. E. Bayard, Richard F. Soper, the Misses Blanchard (2), and Hatfield, Burnham, Williams & Co., each \$10,000; total, \$140,000.

**University of the City of New York**, gift from a friend, funds to defray cost of a central building on the new site. The building will comprise a museum, library, commencement hall, and administration offices, and will cost \$250,000.

**Vanderbilt, Cornelius, Frederick K., George W.**, and William K., New York, joint gift to Vanderbilt Clinic and the College of Physicians and Surgeons, New York city, for additions to buildings, \$350,000.

**Vanderbilt, Mrs. Frederick W.**, New York, gift for an operating room in Newport (R. I.) Hospital, \$5,000, supplementing a former gift of \$3,000.

**Voorhees, Peter L.**, Camden, N. J., bequests to Cooper Hospital, \$7,000; to 2 churches, each \$1,500; and to Cooper Hospital, conditionally, \$20,000.



**Wales, Mr. and Mrs. George W.**, Boston, gift to the Boston Museum of Fine Arts, 700 specimens of ancient and modern pottery and porcelain.

**Walker, Mrs. Hope Potter**, Boston, Mass., bequest to the Bristol (R. I.) Old Ladies' Home, her estate of \$30,000, excepting \$1,000 for Indian and home missions.

**Wallace, Rodney**, Fitchburg, Mass., gift to the town of Rindge, N. H., a library; dedicated June 13.

**Warren, William M.**, Boston, bequest to Boston Museum of Fine Arts, available on the death of his widow, \$50,000. Mrs. Warren has waived her rights, and the money has been paid.

**Waterhouse, Rufus**, New York, bequests to St. Luke's Hospital, for a ward for consumptive sewing women, \$200,000, and the principal of 4 trusts, of \$10,000 each.

**Wellesley College**, Massachusetts, gift from friends of the late Prof. Lewis B. Monroe, for readings and lectures, \$5,000.

**Wells, Mr. and Mrs. Henry and Mr. and Mrs. Frederick H.**, Burlington, Vt., joint gift for a residence for the Protestant Episcopal Bishop of Vermont, \$11,000.

**Whittall, Matthew J.**, South Worcester, Mass., gift to St. Matthew's Protestant Episcopal Church, \$30,000.

**Wicks, W. W.**, Brooklyn, N. Y., gift to Lafayette Avenue Presbyterian Church, for its missionary and benevolent societies, \$20,000.

**Wilbraham Academy**, Massachusetts, gift from a friend, for a scholarship, \$5,000.

**Wildes, Moses** (second), Cambridge, Mass., bequests, available by the death of his widow, to 11 State, Boston, and other benevolent institutions, over \$150,000; also special bequests of \$22,000.

**Wilkinson, Mrs. Martha W.**, Cambridge, Mass., bequests, conditional, to Bates College, Lewiston, Me., and Carleton College, Northfield, Minn., each \$20,000; and outright to the Congregational National Council, \$1,000; residue in reversion to the American Board.

**Williams, Dr. E. H.**, Philadelphia, gift to University of Vermont, a science hall, cost, with equipment, \$130,000.

**Wormser, Simon**, New York (died July 30, 1895), sons of, gifts to Hebrew institutions, an aggregate of \$15,000.

**Wright, John**, Philadelphia, bequests to the Maternity Hospital, the Society to Protect Children from Cruelty, Germantown Hospital, and Howard Hospital, each \$5,000.

**Wright, J. Hood**, New York, bequest to Manhattan Dispensary, a large residuary estate, of which \$100,000 may be applied as a building fund.

**Young Men's Christian Association**, New York city, gifts from 26 friends, toward a building on the West Side, near Central Park, \$200,000. On the completion of this subscription, to be added to the bequest of the late William H. Vanderbilt, for this purpose, now amounting to \$140,000, Mr. and Mrs. Samuel Inslee deeded the association, in fulfillment of a pledge, real estate, valued at \$200,000.

**Zabriskie, Mrs.**, New York, gift for a new chancel for the Church of the Transfiguration, \$60,000; first occupied Feb. 3.

**GREAT BRITAIN AND IRELAND**, a monarchy in western Europe, formed by a union of the British Kingdom, into which the Kingdoms of England and Scotland and the Principality of Wales are merged, and the Kingdom of Ireland, holding supreme dominion over the Empire of India and dependencies of various kinds, from self-governing colonies to barbarian protectorates, the whole constituting the British Empire. The reigning sovereign is the Queen-Empress Victoria, born May 24, 1819, daughter of Edward, Duke of Kent, fourth son of George III, of the house of Guelph, descended from a Margrave of Este of the eleventh century, who married the daughter of Guelph, Count of Altdorf, near Re-

gensburg. The Guelphs became by marriage and inheritance Dukes of Bavaria, and afterward Dukes of Saxony and Lords of Brunswick and Luneburg, and have been Dukes of Brunswick since 1235. Ernst August, who was made Elector of Hanover in 1692, married a princess of the house of Stuart, and his son was proclaimed successor to the throne of Great Britain and Ireland in 1701, and was crowned under the name of George I in 1714. Victoria is the fifth monarch of the Brunswick-Luneburg line. The heir apparent is Albert Edward, Prince of Wales, born Nov. 9, 1841, and married to Alexandra, Princess of Denmark. George, Duke of York, the only living son of this union, born June 3, 1865, married Victoria, daughter of the Duke of Teck, who on June 23, 1894, bore him a son, christened Albert Edward.

The power to legislate for the United Kingdom and, except so far as is delegated to the local legislative authorities, for the whole British Empire is vested in the Parliament, which consists of the House of Lords and the House of Commons. Lords are the princes of full age of the blood royal, of whom there are 5; the 2 Anglican archbishops, the bishops of London, Durham, and Winchester, and 21 other English bishops of ancient sees; the heads by right of primogeniture of the noble houses of England, of Great Britain, and of the United Kingdom, and peers created by the sovereign, of whom there are altogether 494 over twenty-one years of age; 16 Scotch peers elected for each Parliament from among 36; and 28 representatives whom the 94 Irish peers elect for life. The House of Commons has 670 members, elected by the registered electors of counties, boroughs, and universities. In counties, as well as in boroughs, every householder or lodger is now a qualified voter. There are 253 English, 39 Scotch, and 85 Irish county members; 237 English, 31 Scotch, and 16 Irish borough members; and 5 English, 2 Scotch, and 2 Irish university members. There were 6,229,120 registered electors in 1893, of whom 4,862,758 were in England and Wales, represented by 495 members; 619,091 were Scotch, represented by 72 members; and 747,271 were Irish, represented by 103 members. The duration of Parliament, unless it is previously dissolved, is seven years. The executive power is exercised in the name of the sovereign by a committee of ministers, whose tenure of office depends upon their retaining the support and confidence of a majority of the House of Commons, and thus being able to initiate and control legislation. The legislative programme for each annual session is set forth in brief and general terms in the royal address. When through the defection of former supporters and the successes of the opposite party in by-elections a ministry finds itself in a minority on a political question and its policy condemned by a vote of the House, Parliament is prorogued, and the Government appeals to the country by issuing a proclamation of dissolution and writs for new elections, or the Prime Minister advises the sovereign to send for the leading statesman of the opposite party, who is requested to form a new Cabinet to take over the seals of office and the executive business of the kingdom and empire. If he accepts, unless he is sure of the sup-

port of Parliament in the policy that he is prepared to inaugurate, he also dissolves Parliament and orders new elections to be held throughout the United Kingdom.

The Cabinet that assumed office on Aug. 18, 1892, as the result of the general elections, represented a coalition of Gladstonian Liberals and Irish Home Rulers, and was pledged to introduce Irish self-government. This ministry, as reconstructed after the retirement of Mr. Gladstone in the beginning of March, 1894, was composed as follows: Prime Minister, First Lord of the Treasury, and President of the Council, the Earl of Rosebery; Lord High Chancellor, Lord Herschell; Chancellor of the Exchequer, Sir William Vernon Harcourt; Secretary of State for Foreign Affairs, the Earl of Kimberley; Lord Privy Seal and Chancellor of the Duchy of Lancaster, Lord Tweedmouth; Secretary of State for India, Harry H. Fowler; Secretary of State for the Home Department, Herbert H. Asquith; Secretary of State for the Colonies, the Marquis of Ripon; Secretary of State for War, H. Campbell-Bannerman; First Lord of the Admiralty, Earl Spencer; Chief Secretary to the Lord Lieutenant of Ireland, John Morley; President of the Board of Trade, James Bryce; President of the Local Government Board, G. J. Shaw-Lefevre; Secretary for Scotland, Sir George Otto Trevelyan; Postmaster-General, Arnold Morley; Vice-President of the Council on Education, A. H. Dyke Acland.

**Area and Population.**—England has an area of 50,867, Wales 7,442, Scotland 29,785, Ireland 32,583, the Isle of Man 227, and the Channel Islands 75 square miles; total United Kingdom, 120,979 square miles; England, on April 5, 1891, had 27,483,490 inhabitants, 13,291,402 males and 14,192,088 females; Wales had 1,519,035 inhabitants, 761,499 males and 757,536 females; Scotland had 4,025,647 inhabitants, 1,942,717 males and 2,082,930 females; Ireland had 4,704,750 inhabitants, 2,318,953 males and 2,385,797 females; and there were 55,608 inhabitants in the Isle of Man, 92,234 in the Channel Islands, and 224,211 soldiers and sailors abroad; total population of the United Kingdom, 38,104,975. The estimated population of England and Wales in 1894 was 30,060,763; of Scotland, 4,124,691; of Ireland, 4,593,577.

The population of the three kingdoms, counting for England persons above the age of ten years only, was divided in 1891, in respect to occupation and means of living, as follows:

CALLINGS.	England.	Scotland.	Ireland.
Agriculture and fisheries...	1,336,945	249,124	986,759
Commerce.....	1,399,735	150,952	89,173
Industry.....	7,336,344	1,032,404	656,410
Liberal professions.....	926,182	111,319	214,243
Domestics.....	1,900,328	203,153	255,144
Without profession.....	9,154,373	2,248,695	2,559,021
Total.....	22,053,557	4,025,647	4,704,750

The estimated population of the large towns of England and Wales in 1894 was as follows: London (registration district), 4,349,166; Manchester, 520,211; Liverpool, 507,230; Birmingham, 492,301; Leeds, 388,761; Sheffield, 338,316; West Ham, 238,184; Bristol, 226,578; Bradford, 223,985; Nottingham, 223,584; Kingston-upon-

Hull, 212,679; Salford, 205,828; Newcastle-on-Tyne, 201,947; Leicester, 189,136. Scotland has 3 cities with over 150,000 inhabitants: Glasgow, 686,820; Edinburgh, 270,588; Dundee, 158,719. Ireland has 2: Belfast, 255,950; Dublin, 245,001.

The number of marriages in England in 1893 was 218,251; of births, 914,189; of deaths, 569,923; excess of births, 344,266. In Scotland the number of marriages was 27,090; of births, 127,040; of deaths, 79,641; excess of births, 47,399. In Ireland the number of marriages was 21,710; of births, 106,031; of deaths, 82,822; excess of births, 23,209.

The total number of emigrants in 1894 from the United Kingdom was 227,179, including foreigners. Of the total emigration, 159,605 persons went to the United States, 23,731 to British America, 11,185 to Australasia, and 32,658 to other destinations. The British and Irish emigrants in 1894 numbered 156,806, which was 52,008 fewer than in 1893. Of these, 100,663 were English, 14,213 were Scotch, and 41,930 were Irish.

**The Army.**—The peace establishment of the regular army, according to the estimates, was, for the year ending March 31, 1895, as follows: Officers of the general staff, 332, with 130 assistants; accountants, 209; chaplains, 87; surgeons, 620; veterinarians, 76; cavalry, 553 officers, 1,371 noncommissioned officers, and 11,392 rank and file; royal artillery, 850 officers, 2,017 noncommissioned officers, and 20,546 rank and file; royal engineers, 588 officers, 1,222 noncommissioned officers, and 5,413 rank and file; infantry, 2,817 officers, 6,659 noncommissioned officers, and 79,295 rank and file; colonial corps, 161 officers, 372 noncommissioned officers, and 4,695 rank and file; departmental corps, 139 officers, 1,299 noncommissioned officers, and 2,924 rank and file; army service corps, 237 officers, 920 noncommissioned officers, and 2,729 rank and file; staff of yeomanry, militia, and volunteers, 600 officers, 6,199 noncommissioned officers, and 10 rank and file; instruction in gunnery and musketry, 35 officers, 100 noncommissioned officers, and 98 rank and file; Royal Military Academy, at Woolwich, 30 officers, 22 noncommissioned officers, and 18 rank and file; other colleges and schools, 39 officers, 109 noncommissioned officers, and 1 rank and file; regimental schools, 14 officers and 183 noncommissioned officers; other establishments, 99 officers, 63 noncommissioned officers, and 30 rank and file; total army, 7,496 officers, 20,689 noncommissioned officers, and 127,162 rank and file. The infantry consists of 3 regiments of guards, divided into 7 battalions, each regiment having its depot; 69 battalions of the line, with 65 depots; and 20 battalions stationed in South Africa, Canada, Bermuda, the West Indies, Malta, Gibraltar, Hong-Kong, Singapore, Ceylon, and Egypt. The weapon is the Lee-Metford rifle of 7.698 millimetres caliber, with a detachable magazine holding 8 cartridges. The cavalry forces are 3 guard regiments of cuirassiers, each of 8 troops; 17 regiments of the line, with 11 depots; and 1 battalion in Egypt, 1 in Natal, and 9 in the Indies. The weapon is the Martini-Metford carbine. The yeomanry numbers 10,697 men, organized since April, 1893, in 194



squadrons. The artillery comprises 20 batteries of horse artillery, with 2 depot batteries; 80 mounted batteries of field artillery, with 4 depot batteries; 10 mounted batteries; and 3 sections of garrison artillery, containing 97 companies, with 3 depots. The armament consists of breech-loading rifled cannon of 7.62 centimetres caliber for the horse artillery and 8.9 centimetres for the mounted batteries and muzzle-loading mountain guns. Each battery consists of 6 pieces. The engineers comprise 8 companies of field and 10 of fortress pioneers, 2 railroad companies, and 4 companies of surveyors, with 17 depot companies; 11 companies of submarine mines, with 1 depot company; and 1 battalion of telegraphists, 1 battalion of pontonniers, and 1 balloon section, with a depot. The number of horses provided in the estimates was 14,556. In the beginning of 1894 there were 105,550 officers and men in the home stations, of whom 75,435 were in England and Wales, 3,689 in Scotland, and 26,426 in Ireland. The troops stationed in Egypt numbered 5,015, and in the colonies there were 31,577. The regular forces, home and colonial, in returns for 1895 had 143,788 effectives; the army reserve, 80,559; militia, 126,273; yeomanry, 10,424; volunteers, 227,741; total, 588,785. The regular British troops drafted into the Indian army numbered 76,721, making the total effective regular British troops 665,506. There are 2 schools for the training of officers, the Royal Military Academy, at Woolwich, and the Royal Military and Staff College, at Sandhurst. Other military educational institutions are the military asylum and normal school, at Chelsea, the Hibernian Military School, at Dublin, the department for the instruction of artillery officers, the military medical school, and schools and libraries for the garrisons. The yearly requirements of recruits for the British army are from 32,000 to 36,000. About 17,000 men are transferred annually to the army reserve.

The Duke of Cambridge, field marshal commanding the British army, was retired in August in spite of his plaintive protests, and his inveterate antagonist, Field-Marshal Viscount Wolseley, the foremost champion of military reform, was appointed his successor. During all the years that he was commander in chief the Queen's cousin was the object of incessant radical attacks as an exponent of the royal prerogative, having been appointed in 1856 at the dictation of the Queen in spite of his failure as a general in the Crimean War, and being the recipient, though rich, of an annuity of £12,000 and the emoluments of various sinecures. Scientific military men and the chiefs of the War Office have long desired the removal of the pipe-clay martinet who has fought every reform and was the chief obstacle to administrative reorganization on the modern Prussian model, to effect which Lord Wolseley was chosen in preference to the Duke of Connaught, the Queen's third son. Lord Wolseley assumed the chief command on Nov. 1.

**The Navy.**—The British navy since the completion in 1894 of the programme of the naval-defense act of 1889 has 10 first-class battle ships launched since 1890, 13 more built between 1880 and 1890 that can steam 15½ knots an hour or

over, 18 others above 6,000 tons of older type that are still classed as effective for port-defense or conveying purposes, if not for the line of battle, and 9 above 3,500 tons with from 9 to 12 inches of side armor, and armed with 18-, 22-, or 25-ton guns. Of the 10 new ships 7 ("Royal Sovereign," "Empress of India," "Repulse," "Royal Oak," "Romillies," "Resolution," and "Revenge") have a displacement of 14,150 tons, 18 inches of armor, engines of 13,000 horse power, giving a speed of 17.5 knots, and carry 4 67-ton guns in barbette batteries, with an auxiliary armament of 10 6-inch, 16 6-pounder, and 12 3-pounder quick-firing guns, with 7 torpedo ejectors. There is another vessel ("Hood") in this class that carries her heavy guns in closed turrets. The 2 other new armor clads ("Centurion" and "Barfleur") are lighter and more mobile, having only 12 inches of armor and a displacement of 10,500 tons, and with the same engine power develop a speed of 18.2 knots. Of 3 turret ships completed in 1891 and 1892, 2 ("Nile" and "Trafalgar"), of 11,940 tons, having 20 inches of armor over the vital parts, carry 4 67-ton guns and a secondary battery of 6 4.7-inch, 8 6-pounder, and 9 3-pounder quick-firing guns, and the third ("Sans Pareil"), of 10,470 tons and 18-inch plates, with engines indicating 12,000 horse power, carries 2 111-ton guns, 1 29-ton gun, 12 5-ton guns, and 12 6-pounder and 9 3-pounder quick-firers, and has engines of 14,000 horse power. These have a nominal speed of 16.7 knots, and the 4 barbette ships launched in 1885 ("Benbow," "Camperdown," "Howe," and "Anson"), of 10,600 tons and 18-inch armor, develop the same speed with engines of 11,500 horse power, while they carry an armament of 4 67-ton and 6 5-ton guns, with 19 quick firers, and are fitted with tubes for discharging 5 torpedoes, 1 less than the vessels last mentioned. This standard of speed was fixed by a vessel of similar type ("Rodney"), whose main armament consists of 1 69-ton and 3 67-ton guns. Two turret ships ("Edinburgh" and "Colossus"), of 9,420 tons, having 18 inches of armor and an armament consisting of 4 45-ton and 5 5-ton guns and 14 quick firers, developed a speed of 15.5 knots, the rate set by a lighter armed and protected vessel ("Conqueror") launched in 1881. Into a barbette ship that was next built ("Collingwood"), of 9,500 tons, having the same side armor as they and the same armament, were put engines of 9,500 horse power, with which the speed of 16.5 knots was first reached. These 4 ships come rather within the second class of squadron fighting ships than within the first, to which belongs a more recent turret ship ("Hero"), of 6,200 tons, which carries 2 45-ton guns and a powerful auxiliary armament, and makes 15.5 knots an hour. There are 4 older vessels counted in the second class, 1 of which ("Temeraire") was the first British barbette ship, launched in 1876, and armed with 4 25-ton and 4 18-ton guns; 1 is a turret ship ("Dreadnaught") carrying 4 38-ton guns; and 2 ("Superb" and "Alexandra") carry 18- and 22-ton guns in a central battery. A monster vessel built at the same period ("Inflexible") of 11,880 tons, with plates 24 inches thick and 4 80-ton guns, is now accounted too slow and unwieldy for fleet purposes, and is not even

placed in the third class, which comprises 7 vessels, 2 of which ("Hercules" and "Sultan") carry 8 18-ton guns in a central battery and 5 are turret ships ("Monarch," "Devastation," "Thunderer," "Rupert," and "Neptune") armed with 38-, 29-, 22-, or 18-ton guns. There are 17 other armor clads classed as efficient for coast defense, of which 8 ("Penelope," "Audacious," "Invincible," "Iron Duke," "Swiftsure," "Triumph," "Belleisle," and "Orion") have their guns disposed in a central battery, and 9 ("Hotspur," "Cyclops," "Glatton," "Gorgon," "Hecate," "Hydra," "Inflexible," "Agamemnon," and "Ajax") carry their heavy guns, mostly 25-, 29-, or 18-ton, in closed turrets.

A new programme of construction was begun upon as soon as the old was completed. The first vessel laid down ("Renown"), launched in May, 1895, is an improved "Centurion," with the same armament more effectively arranged and better protected; she has a displacement of 12,350 tons, engines of 10,000 horse power, is calculated to steam 17 knots, and is fitted with 5 torpedo ejectors of new design. The first ("Magnificent") of a class of colossal battle ships, of 14,900 tons displacement, was launched in 1894; a sister ship ("Jupiter") was launched on Nov. 18, 1895, and 7 others ("Majestic," "Prince George," "Cæsar," "Hannibal," "Victorious," "Illustrious," and "Mars") are building. They will have engines of 12,000 horse power, capable of making 18 knots, and will be armed with 4 12-inch guns in barbettes and 12 6-inch and 28 smaller quick-firing guns, and have 5 torpedo ejectors.

Under the naval-defense act 9 first-class deck-protected cruisers were built, 5 ("Edgar," "Endymion," "Hawke," "Grafton," and "Theseus"), of 7,350, and 4 ("Royal Arthur," "Crescent," "St. George," and "Gibraltar"), of 7,700 tons, all equipped with engines of 12,000 horse power, capable of steaming 19½ or 20 knots an hour, with coal space for long cruises and an armament of 2 22-ton guns and 12 6-inch, 12 6-pounder, and 5 3-pounder quick-firing guns, except the "Royal Arthur," which carries only 1 heavy gun. Two older cruisers ("Blake" and "Blenheim"), of 9,000 tons, have engines of 20,000 horse power and a nominal speed of 22 knots. Seven belted cruisers launched in 1886 and 1887, of 5,600 tons and a nominal speed of 18½ knots ("Undaunted," "Aurora," "Australia," "Galatea," "Immortalité," "Narcissus," and "Orlando"), have also 2 22-ton guns, and nearly as large a secondary armament. Lighter deck-protected cruisers, of 5,600 tons and engines of 9,600 horse power, giving a trial speed of 19½ knots, of which 3 ("Eclipse," "Minerva," and "Talbot") have been begun, to be followed by 6 others ("Diana," "Dido," "Doris," "Isis," "Juno," and "Venus"), carry only quick-firing guns, 5 of 6 inches caliber, 6 of 4·7 inches, and several smaller ones. The "Talbot" was launched in April, 1895. Two enormous protected cruisers have been begun under the latest programme ("Powerful" and "Terrible"), of 14,000 tons, with engines of 25,000 horse power, designed to give a trial speed of 22 knots; the armament will be 2 9·2-inch, 12 6-inch quick-firing, and 18 12-pounder and 12 3-pounder quick-firing guns. The "Terrible" was launched in the Clyde on May 27, 1895. Every one of these cruisers is equipped

with 4 torpedo ejectors. There are 12 armored cruisers built between 1860 and 1885, which are classed as first class for conveying purposes ("Warrior," "Black Prince," "Minotaur," "Achilles," "Bellerophon," "Agincourt," "Northumberland," "Shannon," "Nelson," "Impérieuse," and "Warspite." There are 29 second-class cruisers built under the naval-defense act, which are of 2 types and sizes, 3,400 tons ("Apollo") and 4,360 tons ("Astræa"), with 9,000 horse power and a speed of 19½ or 20 knots. Three improved "Astræas" and 6 fast cruisers of another type are projected. The older second-class cruisers number 20, and the third-class cruisers and gunboats 172. Of torpedo craft there are 85 of the first class, including torpedo-boat catchers or torpedo gunboats of the "Rattlesnake" class, the more recent ones of the "Sharpshooter" class and the "Speedy" class, the still larger torpedo gunboats of the "Halcyon" class, and 42 of the new torpedo-boat destroyers, of which the "Havock," "Hornet," "Ardent," and "Daring" were the first to be completed; 33 of the second class; and 18 of the third class. The destroyers have a displacement of 220 tons, and are fitted with 5 torpedo tubes, and are armed with a 12-pounder quick-firing gun and, usually, 5 6-pounders. The torpedo-boat destroyers were decided on in 1893 on the theory that England, being the strongest naval power, has no need of torpedo boats, but rather of special craft large enough and fast enough to put torpedo boats out of action. As the French torpedo boats have a speed of 25 knots, the destroyers were tested for 27 knots. Abandoning the heavier types, of which the "Rattlesnakes," of 550 tons, marked the first departures followed by the "Sharpshooters," of 800 tons, and still larger "Speedy" class and "Halcyons," the Admiralty reverted to the first idea of the torpedo-boat catchers of 1885, boats of 200 tons, armed with quick-firing guns, and capable of overtaking the fleetest torpedo boats in all weathers. There were 23 completed before the end of 1895. The speed has been improved, the "Boxer," built by Thornycroft, making 29·17 knots. Since the "Sokol," built by Yarrow, showed 29·76 knots, and the French have turned out a torpedo boat ("Forban") speeding 31 knots, the 19 destroyers called for in 1896 will be required to show over 30 knots. New first-class cruisers to be begun in 1896 will be improved "Blenheims." Second-class cruisers, of about 5,750 tons, will have the armament of the "Talbot" class and similar, but increased protection. Third-class cruisers are to have a displacement of 2,100 tons, locomotive boilers developing 7,000 horse power, and giving a speed of 20 knots, an armament of 8 4-inch quick-firing guns, 8 3-pounders, and smaller guns, and in torpedo armament and general type and arrangements will resemble the "Barham" class, but will have greater free board and much larger coal capacity. There are under construction 10 first-class battle ships, 6 first-class cruisers, 13 second-class cruisers, 2 third-class cruisers, and nearly 50 torpedo-boat destroyers. Harveyized steel has been definitely adopted for armor plates. Besides locomotive boilers, Du Temple water-tube boilers, Thornycroft boilers capable of being forced under air pressure, and the Belleville



boiler have been tried, and the water-tube type has been adopted for most of the new ships. The number of officers, seamen, boys, coast guards, and marines provided for in the estimates for 1896 is 83,400. An attempt to recruit men from the mercantile marine having failed, the experiment was tried of engaging boys, not such as are taken on the ordinary training ships, but older boys that can be trained for the service in a few months. The complement of officers and men to be provided in 1897 is 88,850.

**Commerce and Production.**—The total value of the imports in 1894 was £408,505,718. The value of the exports of British products was £216,194,239; of re-exports of foreign and colonial products, £57,066,484. The values are not determined for the year, as in most countries; but the declared values are taken, subject to revision and a fine for false declaration. The exports of British produce shrank from \$31.80 *per capita* in 1891 to \$27.60 in 1893, and the imports from \$56 to \$51. Of the total imports in 1893, amounting to £404,688,178, British colonies and dependencies furnished 22½ per cent. and foreign countries 77½ per cent., and of the exports of British produce and manufactures 33 per cent. went to British possessions and 67 per cent. to other countries. The imports from and domestic exports to the different colonies and dependencies in 1893 were valued as follow:

BRITISH COLONIES.	Imports.	Domestic exports.
India .....	£26,238,949	£28,776,001
Australasia .....	29,874,862	15,083,490
British America .....	13,343,596	7,200,352
South Africa .....	5,550,153	8,584,388
Straits Settlements .....	4,515,387	1,756,537
Hong-Kong .....	885,634	1,822,047
British West Indies .....	1,740,550	2,384,251
Ceylon .....	4,252,794	899,789
British Guiana .....	772,681	819,861
Channel Islands .....	1,226,204	780,965
West Africa .....	2,162,247	1,624,019
Malta .....	76,771	721,618
Mauritius .....	250,497	805,127
All others .....	881,599	1,256,706
<b>Total .....</b>	<b>£91,769,454</b>	<b>£72,015,101</b>

The imports of wheat in 1894 were 130,482,520 bushels. Including flour, the imports of wheat and other cereals were 178,477,173 hundredweight. The imports of flour were 19,134,605 hundredweight, of which 15,925,486 hundredweight came from the United States. Of wheat, 24,658,245 hundredweight were imported from the United States, 16,775,881 hundredweight from Russia, 13,272,152 hundredweight from the Argentine Republic, 5,349,056 hundredweight from India, 3,877,418 hundredweight from Australia, 2,828,515 hundredweight from Canada, 1,764,413 hundredweight from Chili, and 715,043 hundredweight from Germany. The imports of bacon and hams were 4,846,387 hundredweight; of fish, 2,556,929 hundredweight; of butter, 2,576,063 hundredweight; of margarine, 1,109,313 hundredweight; of cheese, 2,263,287 hundredweight; of beef, 2,346,405 hundredweight; of preserved meat, 554,346 hundredweight; of fresh mutton, 2,295,065 hundredweight; of refined sugar, 13,916,642 hundredweight; of raw sugar, 14,306,739 hundredweight; of tea, 244,474,625 pounds; of spirits, 11,989,863 proof gallons; of wine, 14,362,171 gallons. The imports

of live stock consisted of 484,764 sheep and lambs and 476,021 cattle.

The imports from foreign countries and the trade with them in British produce are shown in the following table:

FOREIGN COUNTRIES.	Imports.	Domestic exports.
United States .....	£91,788,547	£28,957,352
France .....	48,658,090	18,865,444
Germany .....	26,864,849	17,698,457
Netherlands .....	28,851,490	9,248,678
Russia .....	18,574,565	6,872,236
Belgium .....	16,848,979	7,128,862
Spain .....	10,858,982	3,614,516
Egypt .....	8,845,426	3,363,745
Denmark .....	8,936,835	2,589,799
Brazil .....	4,636,102	7,773,433
Sweden .....	8,416,252	2,695,558
Turkey .....	4,978,721	5,768,747
Argentine Republic .....	4,886,682	5,535,754
China .....	8,594,258	4,612,885
Italy .....	2,948,336	5,206,758
Chili .....	3,797,429	2,885,621
Roumania .....	4,218,174	1,397,449
Norway .....	3,570,592	1,756,813
Japan .....	1,046,598	8,485,770
Portugal .....	2,377,892	1,739,090
Java .....	1,352,512	1,901,401
Philippine Islands .....	2,179,696	728,736
Austria .....	1,627,086	1,095,150
Peru .....	1,399,287	790,698
Greece .....	1,420,167	604,905
Central America .....	1,198,127	694,512
Mexico .....	584,235	1,152,847
Uruguay .....	181,262	1,499,030
Colombia .....	629,786	957,608
Spanish West Indies .....	130,612	1,321,926
Foreign West Africa .....	382,795	741,073
Morocco .....	549,687	494,908
Venezuela .....	89,684	919,261
Algeria .....	477,854	225,444
Ecuador .....	201,187	300,114
Tunis and Tripoli .....	294,604	182,321
Hayti and San Domingo .....	67,706	382,810
Persia .....	119,001	251,882
Bulgaria .....	100,188	169,711
French Indo-China .....	32,017	234,799
Foreign East Africa .....	42,977	318,437
Madagascar .....	124,816	96,708
Siam .....	46,995	85,961
All other countries .....	797,444	1,385,060
<b>Total .....</b>	<b>£312,918,724</b>	<b>£146,079,764</b>

The values of the principal imports in 1894 were: Cereals and flour, £48,223,785; raw cotton, £32,944,346; wool, £24,791,160; meat, £22,724,273; sugar, raw and refined, £19,149,576; butter and margarine, £16,515,200; wood and timber, £17,146,896; silk, manufactured, £12,749,035; tea, £9,840,206; woolen manufactures, £9,261,316; flax, hemp, and jute, £9,040,101; seeds, £7,125,534; leather, £7,094,156; fruits and hops, £6,270,824; cheese, £5,467,137; wine, £5,020,097; eggs, £3,786,320; coffee, £3,525,016; tobacco, £3,512,601; iron ore, £2,983,597; iron manufactures, £3,061,035; tin, £2,718,499; copper, £2,364,318; copper ore, £2,260,590; dried currants and raisins, £1,761,948; lead, £1,511,855; zinc, £1,194,771; bar iron, £555,558.

The values of the principal exports of domestic manufactures were: Cotton goods, £57,297,120; cotton yarn, £9,289,078; woolen goods, £14,035,544; woolen yarn, £4,721,874; linen manufactures, £4,504,639; linen yarn, £938,419; jute manufactures, £2,093,625; jute yarn, £382,382; apparel and haberdashery, £5,372,952; pig iron, £1,912,350; bar, angle, bolt, and rod iron, £822,557; iron wire, £621,422; iron hoops, sheets, and plates, £2,999,777; cast and wrought iron, £3,438,065; old iron, £226,873; steel, wrought

and unwrought, £2,474,311; hardware and cutlery, £1,838,126; copper manufactures, £2,367,433; machinery, £14,265,122; chemicals, £8,496,333. The value of the coal exported was £17,375,807.

The imports of the various classes of merchandise in 1893 and 1894 were as follow:

IMPORTS.	1893.	1894.
Live animals, for food.....	£6,351,704	£9,098,796
Articles of food and drink, free..	144,267,798	139,411,601
Articles of food and drink, dutiable.....	24,726,172	24,383,880
Tobacco.....	3,549,182	3,512,601
Metals.....	20,629,596	19,062,612
Chemicals, dyes, and tanning substances.....	6,353,119	6,318,268
Oils.....	7,409,905	7,505,703
Textile materials.....	68,007,487	70,623,435
Various raw materials.....	40,988,806	43,091,143
Manufactured articles.....	65,554,296	68,958,531
Miscellaneous articles.....	15,958,055	15,730,206
Miscellaneous, by parcel post....	619,118	808,892
<b>Total.....</b>	<b>£404,688,178</b>	<b>£403,505,718</b>

The values of the exports of British produce of various classes for the two years were as follow:

EXPORTS.	1893.	1894.
Live animals.....	£629,991	£665,353
Articles of food and drink.....	10,619,408	10,698,194
Raw materials.....	17,035,372	19,516,100
Textile fabrics and yarns.....	96,554,056	96,090,032
Metals and metal manufactures..	30,337,175	28,045,527
Machinery.....	13,917,543	14,265,122
Apparel, etc.....	9,548,516	8,740,732
Chemicals and medicines.....	8,630,313	8,496,333
All other articles.....	29,230,140	28,267,710
Miscellaneous, by parcel post....	1,042,351	1,109,136
<b>Total British produce.....</b>	<b>£218,094,565</b>	<b>£216,194,239</b>

The area under grain crops in Great Britain in 1894 was 7,854,974 acres, having decreased in twenty years 1,576,516 acres; the production of hops showed a like decrease, the growing of flax has almost ceased, and green crops fell off 10 per cent., about the same amount of land being added to the meadows, while the rest of the land that went out of tillage was turned into permanent pasture, the area of which increased from 13,178,412 acres in 1874 to 16,465,069 in 1894. The crop of wheat in 1894 was 59,173,000 bushels in Great Britain and 1,666,000 in Ireland; barley, 72,295,000 bushels in Great Britain and 6,211,000 in Ireland; oats, 135,463,000 bushels in Great Britain and 55,701,000 bushels in Ireland. The number of horses in the United Kingdom in 1893 was 2,079,587; of cattle, 11,207,554; of sheep, 31,774,824; of pigs, 3,278,030.

The United Kingdom's output of coal for 1893 was 164,325,795 long tons, value £55,809,808; of iron ore, 11,203,476 tons, value £2,827,947; of iron, 3,978,694 tons, value £9,333,797; the value of all metals produced from British ores, £10,649,610; total value of mineral products, £70,767,651, which was £11,583,109 less than in 1892. There were 718,747 persons employed in the mines, 570,978 of them underground. The exports of coal in 1893 were 29,031,955 tons, valued at £14,375,476. The imports of iron ore were 4,065,000 tons; the total production of pig iron, 6,977,000 tons. The number of furnaces in blast in 1892 was 362, against 414 in 1890. The im-

ports of cotton in 1893 were 1,416,780,064 pounds; the year's consumption of raw cotton was 1,482,000,000 pounds. The imports of raw wool were 677,947,464 pounds; including the home product, wool clipped from imported sheepskins, and imports of goat hair and woollen rags, the year's supply was 951,000,000 pounds, of which 362,000,000 pounds were exported. The actual consumption of wool was 580,000,000 pounds; the consumption of flax and tow, 200,000,000 pounds. The quantity of cotton piece goods exported was 4,652,000,000 yards; of woollen goods, 194,000,000 yards; of linen, 158,000,000 yards; of cotton yarn, 206,000,000 pounds; of woollen yarn, 50,000,000 pounds; of linen yarn, 16,000,000 pounds; the total value of cotton exports, £63,700,000; of woollen exports, £20,900,000; of linen exports, £5,800,000.

**Navigation.**—The number of vessels in the foreign trade entered at the ports of the United Kingdom during 1893 was 59,916, of 37,142,000 tons, of which 36,587, of 26,919,000 tons, were British, and 23,329, of 10,223,000 tons, were foreign; the number cleared was 59,918, of 37,491,000 tons, of which 36,511, of 27,229,000 tons, were British and 23,407, of 10,262,000 tons, were foreign. Of 20,484,183 tons, the foreign tonnage cleared and entered, 5,013,533 tons belonged to Norway, 3,789,702 to Germany, 2,155,707 to the Netherlands, 1,848,856 to Sweden, 1,787,583 to France, 1,772,837 to Denmark, 1,165,551 to Spain, 1,022,546 to Belgium, 617,583 to Russia, 464,468 to the United States, 358,108 to Italy, and 191,136 to Austria. Of the total tonnage, 13,418,056 tons were entered at the port of London, 9,839,801 at Liverpool, 9,408,044 at Cardiff, 4,487,523 at Newcastle, 3,540,869 at Shields, 3,415,330 at Hull, 2,748,599 at Glasgow, 2,130,753 at Southampton, and over 1,000,000 each at Sunderland, Newport, Middlesbro, Leith, Grimsby, Swansea, and Grangemouth. The vessels with cargoes entered from foreign countries had an aggregate tonnage of 28,796,000 tons, of which 20,962,000 were British and 7,834,000 foreign: the tonnage cleared with cargoes for foreign countries was 32,953,000 tons, of which 24,496,000 were British and 8,457,000 foreign.

The number of vessels registered as belonging to the United Kingdom in 1893 was 12,327, of 8,778,503 tons, of which 13,239, of 3,038,260 tons, were sailing vessels and 8,088, of 5,740,243 tons, were steamers. The merchant shipping numbered 16,828 vessels, of 8,541,388 tons, employing 240,974 men, of whom 29,549 were foreigners. There were 8,211 sailing vessels, of 518,264 tons, and 2,446 steam vessels, of 372,527 tons, engaged in the home trade; 263 sailing vessels, of 32,345 tons, and 345 steamers, of 224,562 tons, engaged both in the home and the foreign trade; and 1,994 sailing vessels, of 2,348,584 tons, and 3,569 steamers, of 5,045,106 tons, engaged exclusively in the foreign trade.

**Communications.**—The railroads open to traffic at the beginning of 1894 had a length of 20,646 miles. The average rate of extension since 1890 has been 191 miles a year, compared with 214 miles in the preceding ten years. There are 14,440 miles in England and Wales, 3,215 miles in Scotland, and 2,991 miles in Ireland. The capital invested was £971,323,000. The receipts for 1893 were £80,631,892, of which



£40,994,637 were from freight and £35,849,449 from 873,177,052 passengers.

The telegraphs in 1894 had a length of 35,286 miles of line, with 214,804 miles of wire. The number of messages forwarded during the year ending March 31, 1894, was 70,899,498. The revenue was £2,534,264 and expenditure £2,641,518.

During the year ending March 31, 1894, the post office carried 1,812,000,000 letters, 245,500,000 post cards, 574,300,000 book packets, 164,900,000 newspapers, and 54,000,000 parcels. The number of money orders issued was 10,524,774, for £28,720,000: the numbers of postal orders was 57,232,939, for £21,768,793. The revenue was £10,472,875 and expenses were £7,738,602.

**Parliamentary Session.**—The fourth and last session of the Parliament elected in July, 1892, was opened on Feb. 5. The original Ministerial majority of 41 had dwindled to 33, including the refractory Parnellites and Keir Hardie, an independent Socialist. There were 270 Gladstonian Liberals, 72 Anti-Parnellites, and 9 Parnellites on the Ministerial side, and 271 Conservatives and 47 Liberal Unionists in Opposition. In the Queen's speech the first place was given to proposals for remedying defects in the working of the Irish land law and for dealing with the cases of certain evicted tenants whose situation constitutes a peril to social order. The offenses against the law in Ireland had sunk to the lowest level recorded. A bill dealing with the Church establishment in Wales was promised. Other bills would have for their object popular control of the liquor traffic, the abolition of the system of plural voting, and a provision for the payment of the charges of returning officers at elections. A bill would be presented founded upon the report of a commission appointed in 1893 to study the best means of unifying the government of the metropolis. Agriculture continued in a seriously depressed condition and a commission appointed in the autumn of 1893 still had the subject under consideration; in the meantime a proposal would be submitted for facilitating the construction of light railways, as these were expected to prove beneficial to the rural districts. Bills would also be presented for the promotion of conciliation in labor disputes and for the amendment of the factory acts. The Scotch measures promised were measures for completing the system of county government and further legislation in respect of the crofter population in that country. In the House of Lords the Marquis of Salisbury asked about the reform of that House which the Premier had announced, and was told that a resolution would be introduced in the House of Commons. John Redmond moved an amendment to the address calling for dissolution on the ground that the Government had failed to carry home rule. James Keir Hardie offered one expressing regret that there was no allusion in the Queen's speech to the distress prevailing among the people and asking for legislation in the direction of alleviating the sufferings of the poor. The Duke of Devonshire thought that no bill was likely to pass in any form except the Irish land bill. The practice of introducing and reintroducing measures

that had no chance of going through was likened to "plowing the sands of the seashore," and their constant defeat by Conservative tactics was called "filling the cup." Justin McCarthy was re-elected their chairman by the Irish Nationalists. Clement Higgins, a county member from Norfolk, dissatisfied with the Liberal party, announced his withdrawal from the discussions of Parliament. The Unionists had won in many by-elections. The Parnellites threatened to revolt because of the postponement of Irish measures. The Anti-Parnellites were divided by a bitter faction fight between the friends and the opponents of Mr. McCarthy, in the course of which it came out that the party had received contributions from Liberal politicians, which were expended in supporting evicted tenants. Mr. O'Brien was sued by the lawyer who conducted his libel suit against the London "Times," and was compelled to go into bankruptcy and retire from Parliament. On Mr. Redmond's amendment the Government had only a majority of 20, and on Mr. Jeffrey's amendment to the address, censuring official indifference to agricultural distress, commercial stagnation, and the increase of the unemployed, the majority sank to 12.

On Feb. 12 the Nationalist Lord Mayor of Dublin, Mr. Dillon, presented a petition of the burgesses and corporation for the release of Fenian convicts who had been many years in prison. Similar petitions were forwarded from Limerick and other Irish boroughs. Peter Callaghan and Henry McCann had been released after serving eleven years. Dr. Gallagher and the others the Government refused to amnesty.

Sir Henry James's motion censuring the Government for levying an import duty in India on cotton goods to the detriment of the Lancashire trade was lost on Feb. 21 by 304 to 109 votes. On Feb. 26 the ministry accepted, and the House of Commons approved a motion of Robert L. Everett, a Liberal member, seconded by Henry Chaplin, Conservative, that the House regards with increasing apprehension the constant fluctuation and growing divergence of the values of gold and silver, and heartily concurs in the recent expressions of opinion of the governments of France and Germany in regard to the serious evils resulting therefrom. The resolution urged upon the Government the desirability of co-operating with other powers in an international conference for the purpose of considering measures for removing or mitigating those evils. Sir William Harcourt declared later in a public utterance that the Government in any discussion in which they might take part would not admit a doubt as to their intention to adhere to the single gold standard. Sir Joseph Pease, anti-opium champion, mustered a minority of 59 for a vote of censure on the Royal Commission that inquired into the opium trade in India and reported in favor of its continuance. Arthur Wellesley Peel, who had been for eleven years speaker of the House of Commons, resigned on account of his health on April 8, and William Court Gully was elected to succeed him on April 10 by a majority of 11 over Sir Matthew White Ridley, the candidate put forward by the Conservatives.

Three members of the House of Commons,

heirs to peerages, determined to test the question whether a member could not elect to remain a commoner instead of qualifying as a peer. One of them, Viscount Wolmer, fell heir to the Earldom of Selborne in May. On his appearing in his accustomed seat Sir William Harcourt moved to have a committee appointed to inquire whether he had succeeded to a peerage. George N. Curzon and St. John Brodrick, the two eldest sons of peers who were allied with Viscount Wolmer in the contest, supported his contention in and out of Parliament. It has been the custom to treat the succession to a peerage as creating a vacancy, but the question had never been decided. The controversy ended in its being established as the law of Parliament that the succession to a peerage of a member of the Lower House vacates his seat whether he applies for or receives a writ of summons to the Upper House or not.

The budget was presented by Sir William Harcourt on May 3. The revenue for 1894-'95 had realized £509,000 more than the estimates and the expenditure, including £704,000 of supplementary estimates for Uganda, the navy, education, Cyprus, and Irish relief, varied only £34,000 from the estimates. The balance showed a surplus of £776,000. The total receipts were £3,551,000 more than the receipts of the preceding year; customs yielded £408,000 more, excise £850,000 more, stamps £1,580,000 more, income tax £400,000 more, the post office £290,000 more, and telegraphs £40,000 more. The import duty on spirits, in spite of the extra 6*d.* a gallon, yielded only £67,000 more than in 1893-'94, and the excise receipts from domestic spirits were £330,000 less than the estimates, whereas the extra tax of 6*d.* a barrel on beer did all that was expected of it. The new death duties, expected to produce £1,000,000, fell short of that figure only £32,000. The large increase in the stamps receipts was due to activity in the mining market and a general recovery in business. The public debt was reduced by £8,529,000 during 1894-'95. The interest on the Suez Canal shares owned by the British Government was set free in 1895. These shares are valued at £23,900,000. The savings banks gained in deposits £7,169,000 during the year. The funds of the friendly, industrial, provident, and building societies amounted to £240,296,733, a net increase of £60,000,000 in ten years. The expenditure of the Government for 1895-'96 was estimated at £95,981,000. The increase of £2,000,000 is due to the navy, which requires £1,400,000 more than in 1895, and to additional expenditure for the civil service, especially for the enlargement of education. The total expenditure for 1895-'96, including the imperial contribution of £7,262,000 to local revenues, is £103,243,000, which is raised by local taxation. The Government revenue proper was estimated at £95,662,000, leaving a deficit of £319,000 on the assumption that the additional beer and spirit duties would expire on July 1. To avoid this deficit the Chancellor of the Exchequer proposed to re-enact the duty of 6*d.* a barrel (36 gallons) on beer, which would increase the revenue to £96,162,000 and turn the deficit into an estimated surplus of £181,000. The reimposition of the extra beer duty in preference

to the spirit duty, which was unpopular in Ireland, drew forth sarcastic comments from the Conservatives. The income tax was continued at the rate of the preceding year, 8*d.* in the pound, or 3½ per cent.

The Irish land law bill, prepared by Mr. Morley, altered the statutory term for the revision of rents from fifteen to ten years. It applied to terms already fixed as well as to new cases where a judicial rent was prayed for. The bill abolished the landlord's right of pre-emption and provided that the tenant should pay no rent on his improvements and that allowance should be made in respect of his occupancy. Two valuers would estimate what was a fair rent, and the Land Commission would fix the judicial rent at that figure unless the landlord or the tenant objected. The bill also abolished in certain cases the remedy of ejectment for nonpayment of rent. All improvements made since 1850 are presumed to have been made by the tenant. This clause is intended to undo the results of the decision in the law case of *Adams against Dunseath*, which affirmed that the land act of 1870 provided compensation for improvements. Mr. Morley's bill prescribes that in fixing a fair rent the court shall include in the tenant's interest any increase in the letting value of the holding that has resulted from improvements that he has made, and also the right to the continued occupation of his holding secured to the tenant by the various land acts. No contract by a tenant not to claim compensation for improvements warrants the allowance of rent in respect of any improvement, unless the landlord proves that it was made by him. Either tenant or landlord can apply to the Land Commission to have a fair rent fixed. The landlord can not determine a tenancy by subletting the land. No action to recover rent or evict a tenant can be brought if the rent has been two years overdue. When a statutory term has expired the tenant continues in occupation under the former conditions until his tenancy is determined or until a new judicial rent is fixed.

The Welsh Disestablishment bill to terminate the legal establishment of the Church of England in Wales and Monmouthshire was introduced by Mr. Asquith. The Welsh Church, originally a spontaneous national growth, having been for centuries used as a dependency of the English Church, dissent sprang up in the eighteenth century and spread until now there are 4,000 nonconformist congregations in the principality, comprising three quarters or four fifths of the population. Mr. Gladstone, dissatisfied with some of the provisions of the bill, withdrew his pair toward the close of the session. The Government accepted amendments placing schools and public chapels under a representative body, instead of disendowing them entirely.

A bill dealing with Church patronage was drawn up by the bishops. It aimed at checking the worst abuses of the patronage system, and renders almost impossible sales of the right of patronage. Sales by auction are absolutely prohibited. Persons presented to livings who are vicious or incapable can be rejected by the bishops.



The bill for the local control of traffic in intoxicating liquors was the local veto bill that was lost in 1893 with some modifications and amplifications. It provided that on a requisition signed by one tenth of the parochial electors in any ward of a town or other determined local area, a vote shall be taken as to whether all liquor licenses shall be revoked without compensation and no new ones issued within the area. If two thirds of the electors vote in the affirmative, then the liquor traffic will cease in that locality at the date of the next annual licensing meeting that occurs after three years have expired from the commencement of the act or after the lapse of one year when the act has been two years in operation. If the reintroduction of the liquor traffic in a locality where it has been prohibited is called for by one tenth of the electors, another vote is taken, and a bare majority decides whether prohibition shall be maintained or whether the local area shall have its public houses again. If a petition is signed by the same proportion of electors, not for the suppression, but for the restriction of the liquor traffic, then a poll shall be taken, and if a majority vote for a reduction of the number of public houses, all existing licenses shall be canceled at the end of a year, and the licensing magistrates shall have authority to grant new ones not to exceed three fourths of the number abolished. Ireland was exempted from the application of the bill.

Mr. Shaw-Lefevre introduced a bill to prohibit plural voting and to provide for taking the polls at Parliamentary elections on one and the same day throughout the kingdom. The number of plural voters was computed to be 160,000 in 1888, but probably the real number is much greater. It has increased enormously since the reform act of 1832. In local elections the plural vote has already been abolished. In Parliamentary elections some electors hold property in 20 or 25 different constituencies and are therefore qualified to vote in all of them. The Conservatives denounced the bill as a gerrymander, intended to reduce their party vote in the metropolitan boroughs and other constituencies. The bill was accompanied by a measure to relieve candidates of the expenses of returning officers. This was a sop for the Radicals, who demanded the payment of members. When William Allan moved on March 22 that the members receive pay for their services Sir William Harcourt declared that the Government would advance the proposal in every way possible; it was the logical outcome of the extension of the suffrage and would not lead to corruption and the election of unfit members, for democracy would guard against that; the House was too much of one class. The resolution, which had been passed before, in 1893, with the Government's approval, was carried by 176 votes to 158.

A bill was introduced to empower municipalities and local authorities to acquire and work tramways. The general tramways act of 1870 gave power to local authorities to build and own street railroads, but required that these should be leased to companies in every case. Glasgow, under a special act, obtained in 1871 power to work its street-car lines, but nevertheless leased them to a company for a term of years. Recent-

ly the municipal authorities have taken the management of the Glasgow tramways into their own hands and have operated them with eminent success, improving the service, raising wages, and cheapening fares for work people and school children. Huddersfield obtained similar powers in 1882, finding no company willing to take the lease. The success of this town led other municipalities to petition Parliament for the right to work their tramways, but these requests were always refused, either by the House of Commons or the House of Lords, until in 1892 a standing order was passed that provided for the working of tramways by local authorities when companies can not be found to undertake it on fair terms. Besides Glasgow and Huddersfield only Blackpool, Plymouth, and Greenock availed themselves of the privilege and are actually working their street railroads, although 8 other municipalities have permission. The new act was intended to give a general right to municipalities to manage their street railroads under such circumstances as arose in Huddersfield and the other boroughs mentioned above.

The bill for the conciliation of trade disputes empowered the Board of Trade to inquire into the circumstances of a dispute between employers and employed and to report; also to act as arbitrators or to appoint a conciliator or a chairman and board of conciliation, to which the parties may submit the question at issue. A conciliator or board of conciliation appointed by the Board of Trade would act on the application of one or both of the parties. The county council could also appoint a conciliator or board of conciliation, which in certain cases would have the right to intervene and exercise compulsory powers.

Mr. Bryce's light-railways bill was all that the Government offered for the relief of agricultural depression. Its purpose was to enable local narrow-gauge railroads to be built without the special authorization of Parliament. A scheme would have to be presented first to the county council and examined by a committee of that body, which would consult all the local authorities and submit the plans to the Board of Trade for it to determine whether it is a light railway within the meaning of the act; it must also see that the requirements of the public safety are satisfied, and hear the objections of landowners through whose land the route passes. In the case of other railroads running through the rural districts the bill empowers the Board of Trade to relax some of the precautions hitherto required and sanction less expensive methods of construction and working.

Mr. Asquith's factories and workshops bill was passed by both Houses. It provided for more sanitary arrangements and stricter regulations for the safety of workers in factories and the proper fencing of machinery. To allow wearing apparel to be made up in places where there is infectious disease is made a penal offense. Children are not permitted to be employed in cleaning machinery while it is in motion. Every factory or workshop must have a fire escape. Persons receiving bodily injury and the families of persons killed through neglect of the factory acts or the regulations made under them can

recover compensation. Overtime for young persons is prohibited, for women it is restricted, and no woman, young person, or child after working the full time allowed can take work home. A register of accidents must be kept. The factory acts are extended to laundries, and the provisions requiring the fencing of machinery and notice of accidents to docks, wharves, and quays. The law relating to bakeries is extended to all kinds of bakeries. The powers of the Home Secretary to regulate dangerous employments are enlarged. Medical practitioners are required to send notice to the chief inspector of factories of any case in which disease has arisen from the conditions of employment. All workers in textile industries who are employed on piecework have a right to have supplied to them such particulars as will enable them to ascertain the rate of wages. Workshops must be registered and lists of outside workers must be furnished to the inspector of factories.

A bill for adding one or two colonial judges to the Judicial Committee of the Privy Council was unsatisfactory to the colonies because there was no provision for a salary, and therefore no active judge of the first rank in the colonies would be likely to accept the office. The House of Lords negatived, as often before, the proposal to abolish primogeniture in cases of intestacy and divide real estate in the same way as personality among the family of an intestate.

A criminal appeal bill proposed to create a Court of Criminal Appeal and to grant the right of appeal in all capital cases when there is a conviction. The court would be able to amend or set aside the sentence, not only on grounds of informality or irregularity, but if the jury was misdirected or the verdict is found to have been against the weight of evidence, and to order a new trial if there has been any miscarriage of justice. Prisoners under less sentences than that of death would only have the right of appeal by leave of the court of trial or the Court of Appeal or in certain cases of the Attorney-General. They may also apply for a revision of their sentences, subject to the peril of having them increased.

A bill was passed, in accordance with an agreement with the Russian Government, which extended the protection of the Paris arbitration award to the Russian seal fisheries in Bering Sea. The bill went further than the agreement with the United States in that it contained no limitation of time and covered the whole Pacific Ocean north of the forty-second degree of latitude. Russia agreed in return for the extension of Russian jurisdiction over English sealers beyond the three-mile limit to restrict the annual catch on the Pribyloff Islands to 30,000 seals.

Mr. Shaw-Lefevre brought in a bill to exempt horseless carriages from the regulations governing the use of locomotives on highways, which prohibit them from going at a greater speed than 4 miles an hour and require that they shall be preceded by a man bearing a red flag. A bill requiring the registration of midwives was passed; also a naturalization bill dealing with naturalized citizens residing abroad.

The Irish members proposed to extend to Ireland the institution of county councils as they existed in England and Scotland. It was supported by the Government, but the Unionists,

although the proposition was their own idea, ridiculed the bill and the motives of its authors. On a motion to erect a statue to Oliver Cromwell all the Nationalists as well as the Conservatives voted against the proposition, and the Government was saved from defeat only by the votes of Liberal Unionists. The ministers thereupon renounced the project.

Scotch bills, except those of a contentious character, were referred early in May to a grand committee including all the Scotch members. When the Government refused to refer the crofters' bill to this committee, Dr. MacGregor resigned his seat for Inverness-shire, which was won by the Opposition. The Welsh disendowment bill was the only one of political importance that was advanced in committee. The Parnellites, disappointed because the Irish bill was deferred, went into opposition. The Government majority fell to 10, and on David Thomas's proposal to omit the provision for vesting in the county councils the property of the Welsh Church the majority was only 7. On the night following, June 21, Mr. Brodrick moved the reduction of the salary of the Secretary for War, alleging that there was an insufficient supply of ammunition for the infantry. Some of the Radicals refrained from voting, and when a division was taken the amendment was carried against the ministers by 132 votes to 125. Mr. Campbell-Bannerman, whom his colleagues had kept out of the Speaker's chair because they could not spare his services, immediately resigned. The Cabinet on the following day chose to resign and leave to their opponents the duty of dissolving Parliament. This task the Opposition was prepared to accept. Lord Salisbury was requested by the Queen to form a new ministry. This he was able to do without difficulty, with the co-operation of Mr. Chamberlain and the Duke of Devonshire.

The new Government obtained the necessary votes in supply, passed the Bering Sea bill, and rescued the factories and workshops bill and others of a noncontentious character, including a bill relating to inquiry into fatal accidents in Scotland, a bill for naval works, a bill to amend the corrupt practices act, the Scotch bill for the regulation of sea fisheries, the extradition bill, the naturalization bill, and the Judicial Committee bill. Parliament was prorogued on July 6 and dissolved on July 8.

**The Salisbury Cabinet.**—The Unionist Cabinet was constituted on June 25, as follows: Prime Minister and Secretary of State for Foreign Affairs, the Marquis of Salisbury; Lord President of the Council, the Duke of Devonshire; First Lord of the Treasury, Arthur James Balfour; Secretary of State for the Colonies, Joseph Chamberlain; Chancellor of the Exchequer, Sir Michael Hicks-Beach; First Lord of the Admiralty, George Joachim Goschen; Lord Chancellor, Lord Halsbury; Lord Privy Seal, Viscount Cross; Chancellor of the Duchy of Lancaster, Sir Henry James; Secretary of State for the Home Department, Sir Matthew White Ridley; Secretary of State for War, the Marquis of Lansdowne; Secretary of State for India, Lord George Hamilton; President of the Board of Trade, Charles T. Ritchie; President of the Local Government Board, Henry Chaplin; Lord



Lieutenant of Ireland, Lord Cadogan; Lord Chancellor of Ireland, Lord Ashbourne; Secretary for Scotland, Lord Balfour of Burleigh; First Commissioner of Works, A. Akers-Douglas; President of the Board of Agriculture, Walter Long.

The Duke of Devonshire, who was chairman of the commission that laid down the lines of army reform, the inauguration of which was announced by Mr. Campbell-Bannerman just before the vote of censure, accepted the headship of the Naval and Military Council of Defense appointed to work out the details of the reforms. The most important office outside of the Cabinet was that of Under Secretary for Foreign Affairs, to which George N. Curzon was called. Gerald Balfour was appointed Chief Secretary for Ireland; the Duke of Norfolk, Postmaster-General; and Sir John E. Gorst, Vice-President of the Council for Education. Lord Salisbury offended the retiring Secretary for War by sending at once for his seals of office.

**The General Election.**—At the dissolution the Conservatives in the House of Commons numbered 272 and the Liberal Unionists 49, making a gain for the Unionist party of 7 votes since the Parliament first came together in 1892, while the National Liberals, composed of 267 Liberals, 72 Anti-Parnellites, and 9 Parnellites, had lost 7 seats, reducing their normal majority from 41 to 27. The elections took place in the latter part of July.

In the electoral campaign the Conservatives and Liberal Unionists, following the lead of Arthur J. Balfour and Joseph Chamberlain, offered to the democratic masses a programme of social reforms to match that of the Radicals. The National Liberal Federation announced an electoral programme embracing home rule, disestablishment of the Welsh Church, the employers' liability bill, the Irish land bill, one man one vote, the liquor veto, sweeping reforms for dwellers in towns and for the rural population, and the submission of the House of Lords to the will of the representative Chamber. Mr. Chamberlain promised that wild projects of constitutional change and destructive legislation would be succeeded by constructive social reform.

The Radical association, called the National Reform Union, advocated one man one vote, payment of members, local legislation by local bodies alone, simplification of parliamentary procedure, and the abolition of the legislative power of the House of Lords, together with home rule, land-law reform, local option, suppression of grants and pensions, international arbitration, recognition of the rights of weaker races, closer union of English-speaking races, taxation of all land values, graduation of taxation according to ability to pay, recognition of the claims of the sick, aged, and distressed, and admission of the claims of labor to limitation of hours, right of combination, compensation for injuries, and direct representation in Parliament.

The Irish Nationalists renewed their professions of allegiance to the Liberal party on the basis of the public pledges of its leaders to place home rule in the forefront of its programme.

The platform of the Social Democrat Federation, besides the eight-hour law, free maintenance

nance of children, a minimum wage of 30s. a week, and wholesome dwellings, declared for the ownership of railways, factories, mines, and land by the whole people, a single chamber of paid delegates, elected by universal suffrage, and the popular initiative and referendum.

The members of the Independent Labor party, of which James Keir Hardie was chief, were pledged to sever all connection with the great political parties and vote for their own independent socialist candidates. The Welsh Nationalists, the Local Optionists, the Publicans' Association, the McCarthyites, Healyites, and Redmondites, and various other factions issued electoral manifestoes. The Agricultural Union demanded protection for farmers. The Liberty and Property Defense League denounced all state interference.

Each Liberal leader magnified on the platform the project of which he was the special advocate in Parliament. Lord Rosebery proclaimed as the need of the hour the annihilation of the legislative power of the House of Lords, Mr. Morley put home rule at the head of the programme, and Sir William Harcourt laid stress on the local veto. The Conservative programme was chiefly a negative one. The Unionists were the champions of the integrity of the United Empire and the continuity of its Constitution, and upholders of the greatness of the British Empire. Politicians of both parties had schemes to lay before the working classes. Mr. Morley advocated old-age pensions. Mr. Chamberlain came out with a larger scheme, which had the indorsement of Mr. Balfour—that of making every artisan the owner of his own dwelling and securing to every agricultural laborer a small holding and a cottage by the intervention of the credit of the Government and its right of expropriation. Mr. Balfour enumerated as tasks of the next Parliament the better housing of the working classes, the encouragement of freehold occupancy, the amelioration of the lot of the aged poor, the protection of agricultural tenants in their improvements, the preservation of voluntary schools, provision of compensation for injured workmen, the easing of the burdens of British agriculture, and the opening of markets for British industry.

The Unionists were successful in the elections beyond their anticipations. The Conservatives gained a majority over all other parties combined. The new Parliament was composed of 411 Conservatives, 71 Liberal Unionists, 177 Liberals, 70 Anti-Parnellites, and 12 Parnellites, or 411 Unionists against 259 Home Rulers, giving a Ministerial majority of 152. The English constituencies elected 323 Conservatives, 115 Liberals, 53 Liberal Unionists, and 1 Anti-Parnellite; Welsh constituencies elected 22 Radicals, 7 Conservatives, and 1 Liberal Unionist; there were returned from Scotland 39 Liberals, 20 Conservatives, and 13 Liberal Unionists; and the Irish representation was divided between 69 Anti-Parnellites, 17 Conservatives, 12 Parnellites, 4 Liberal Unionists, and 1 Radical.

**The New Parliament.**—Parliament was convoked on Aug. 12. Speaker Gully was unanimously re-elected. The Queen's speech mentioned the representations made to the Chinese Government to secure the punishment of the authors of outrages upon English missionaries

and the joint intercession of the British, French, and Russian ambassadors with the Sultan of Turkey and their suggestion of reforms for Armenia; also the incorporation of British Bechuanaland with Cape Colony. No legislative proposals were made, the business of the session being confined to voting the estimates for the service of the year which were not voted by the last Parliament.

James William Lowther was elected chairman of committees. John Daly, who was chosen a member for Limerick city, was declared incapable of being elected because he was undergoing a sentence for treason-felony. Gerald W. Balfour promised the Irish members to consider a noncontentious bill for the relief of evicted tenants, but said that he would not introduce a land-law bill then on account of its controversial character. In fulfillment of his pledge the new Irish Secretary secured the re-enactment of a clause of the land act of 1891 for the reinstatement of evicted tenants with the consent of their landlords. Further than this he refused to go. Dr. Charles K. D. Tanner, Anti-Parnellite, was suspended for a week because he created a disorderly scene. The Liberals supported the demands that were made on the Government for the immediate treatment of the questions of the condition of agriculture and the unemployed. The session came to an end on Sept. 5.

**London County Council.**—The County Council that has managed the affairs of the metropolis for six years has been in control of the Progressive party. The Progressives desire the unification of the metropolis and seek to extend the powers of the County Council, whereas the Moderates, their opponents, propose that the metropolitan area shall be divided into 10 self-governing municipalities. The Progressives have, indeed, acceded to the creation of separate municipalities, each with its own mayor, but not to the principle that each of these shall assess and spend its own rates. The effect of that would be that rich districts, having banished all the poverty and labor into the poorer districts, would not be responsible for any of the cost of improving and keeping up these districts; that the parishes of the West End, which have their Hyde and St. James's Parks maintained out of the taxes, would be relieved of the expense of partly paying for the parks and open spaces of the East End; that poor districts, having a valuation one tenth that of the city or the luxurious divisions and in which all the insanitary areas are found, would have to clear these unhealthy areas away at the expense of the poor themselves. The Progressives have endeavored to introduce the principle of assessing the rates upon the owners rather than upon the occupiers of the land, and the Council has incurred large expenses in trying to obtain the sanction of Parliament to this method of local taxation. In education, sanitation, and other matters the metropolis has made great progress. The rates have been increased over 20 per cent., from 11½d. to 14d. in the pound, during the six years the County Council has been in existence. Six schemes of street improvements were proposed in Parliament in 1893, the Council making the condition that Parliament should pass a public bill for taxing ground values, otherwise the im-

provements would not be made. This resulted in a deadlock, for the Government declined to introduce such a bill. Later the Council was willing to proceed with some of the schemes, provided Parliament should sanction the principle of betterment, which is that owners whose land is enhanced in value by improvements should be made to pay for them in proportion to the benefit received. In furtherance of the project of unification the Progressives have proposed to take from the corporation of the city of London its ceremonial functions. In compliance with their wishes the city companies have already given up some of their surplus revenues for technical education. Many of their proposals are called socialistic, such as the municipalization of docks and markets and the establishment of municipal pawnshops. The municipalization of gas and waterworks and street railroads is not opposed absolutely by the Moderates, but the majority of the Council have not been able to agree with the opposite party or with the companies owning the existing waterworks and tramways in regard to the price and the conditions of the transfer. The County Council adopted the policy of executing all public works and conducting all the public business without the intervention of contractors. The Committee on Works regarded the results as satisfactory, although the rule was adopted to pay the trade-union rates or the highest market rate of wages to all workmen employed. The Moderates have ceased their opposition to the purchase of the street railroads since the Court of Appeals decided that the price shall not be based on the market value of the shares, and must not be more than the actual value of plant and material. The Moderates want the tramways, however, to be leased and operated by companies, while the Progressives propose that the County Council shall run them. Bills have been brought before Parliament for the expropriation of all the water companies.

Elections for a new County Council were held in March, 1895. The general reaction in favor of the Conservative and Unionist party operated in favor of the Moderates, who have been affiliated with the Conservatives. The result was a tie, 57 Moderates against 57 Progressives. The Moderates gained 23 seats. Nevertheless, the Progressives obtained a majority in the new Council with the votes of the 9 aldermen who have seats and votes in the Council. They elected their candidate for chairman, Robert Arthur Arnold, over the Duke of Norfolk by 66 votes to 57.

The Progressives, grown modest through their electoral reverses and the prospective victory of the Conservatives in the national election, offered in Parliament a compromise bill, combining betterment with worsement in assessing special taxes for local improvements. The compromise, having been arranged by Mr. Stuart with Lord Cadogan, had the support of the Moderates. The principle of worsement, securing indemnity to owners whose property is injured by improvements, has heretofore been rejected by the majority of the Council. The bill provides that in certain conditions owners may call upon the County Council to purchase the lands and houses on which a special tax has been assessed.



**Trade Union Congress.**—The Trade Union Congress, which was held at Cardiff in the beginning of September, restored the Old Unionists to the position from which they were ousted in the Norwich congress in 1894; and yet the collectivist doctrines of the New Unionism were not repudiated. The resolution for nationalizing the whole of the means of production, distribution, and exchange remained unrepealed. The nationalization of land, mines, and railroads was approved without discussion. The municipalization of docks, with the financial and administrative aid of the state, was unanimously accepted. The present system of education was condemned as based upon commercialism and unfitted to supply the educational needs of the nation. The congress called for the reintroduction into Parliament of the employers' liability bill without the clause for contracting out, and commended an eight-hours' bill that should apply to all trades and districts. The abolition of the House of Lords was demanded because it had shown hostility to labor legislation. The amendments to the truck act passed by Parliament were declared to be ineffective as a protection against deductions from wages, because a worker may have to sign a contract to submit to deductions as a condition of obtaining employment. An additional resolution called for the payment of all wages at the first regular pay day, and one suggested by the women's trade unions condemned deductions for house rent or for work-room conveniences, such as motive power, light, or tools. Another resolution asked the Government to put into operation the principle of a fair wage and to pay the union rates always, with a minimum rate for laborers of 24s. a week; also to deal only with fair houses, in which fair conditions of labor exist, and where trade-union rates are paid for all labor and trade-union customs as to hours, holidays, and the number of hands and apprentices are observed. The congress assented to the proposition that in labor legislation perfect equality of treatment as to hours of work and remuneration should be secured to both sexes. When a mill or company stops work without providing for the payment of all wages earned, it was proposed to give to the work people the right to distrain at once which a landlord has for collecting arrears of rent. The parliamentary committee was instructed to have the trade union-acts so amended that a person of the age of fourteen years may become a member of a registered union. The congress declared itself of opinion that employers should be responsible to workmen when tools are destroyed or damaged by fire on their premises.

**Institute of International Law.**—The fourteenth session of the Institute of International Law was opened at Cambridge on Aug. 8. An article was adopted recommending that claims against a diplomatic representative, over which, on the principle of extritoriality, the courts of the country to which he is accredited have no jurisdiction, should be sued in the court of the capital of his own country, or in the court of his domicile if he is able to contest the jurisdiction of the court of his capital on the ground of being domiciled elsewhere. Immunity from taxation was held not to extend beyond the official *per-*

*sonnel* of a diplomatic mission. Persons enjoying diplomatic immunities can not be cited as witnesses before local courts, but they should be obliged to give testimony within the precincts of the mission before a magistrate specially delegated by the local authority. The question of establishing an international tribunal to decide cases arising out of the international copyright treaty was postponed. The subject of guardianship over adults came up, and the institute held that the national law should apply, rather than the law of the domicile. Another decision was that the judgment of the competent national tribunal should be enforced in other countries without being ratified by the courts of those countries. Proceedings against a foreigner should, however, be provisional only, and should not be concluded without notifying the diplomatic or consular representative of the state to which the foreigner belongs, and hearing any observation made by such representative. The Bern copyright convention was discussed and amendments were suggested. The institute decided in favor of extending the author's exclusive right of translation from ten to twenty years, or to the full copyright term; also in favor of, and against altering the clause only giving the foreign author copyright for the least term allowed in either of the two countries, and allowing the term of the country of reproduction; the rules regarding adaptations should be made unequivocal, and newspaper articles should be protected, with the exception of news and political articles, and reproductions of these should contain an indication of the source. The question of contraband of war was extensively discussed, but the decision was postponed. On the subject of nationality the institute decided that no one should be without a nationality, and no one should have two nationalities; that every one should be allowed to change his nationality, but that to do it a simple declaration should not suffice; and that the nationality of origin should not be transmissible from generation to generation on foreign soil.

**Colonies and Dependencies.**—Besides British India (see INDIA) and the colonies possessing responsible and representative government (see AUSTRALASIA, CAPE COLONY, DOMINION OF CANADA, and WEST INDIES), Great Britain has Crown colonies and protectorates in every continent and ocean. The total area of the British Empire is estimated at 11,334,701 square miles and the aggregate population at 380,938,000. The expenditure of the mother country on the colonies is about £2,000,000 a year, mainly for military and naval purposes. There are about 32,000 British troops maintained in the British colonies and naval stations, not counting the garrisons in India and Egypt.

In Europe England has Gibraltar and Malta, which serve chiefly as naval and military bases for operations in the Mediterranean Sea. Gibraltar, governed as a Crown colony, is garrisoned by 9,000 troops. The Governor is Gen. Sir Robert Biddulph. The native population of Spaniards and descendants of the original Genoese settlers is about 20,000. The revenue in 1893 was £60,919, and expenditure £58,405. Malta, an island south of Sicily, has an area of 95 square miles and a population of 168,105, of whom 1,773 are

English. The Governor is Lieut.-Gen. Sir Arthur J. L. Fremantle. The revenue in 1893 was £291,158; expenditure, £304,993.

At the eastern end of the Mediterranean is the island of Cyprus, administered by Great Britain for the Sultan of Turkey, in accordance with a convention concluded at Constantinople on June 4, 1878. It was the compensation obtained for England in the readjustment of the Eastern question by the Treaty of Berlin. Lord Beaconsfield, who brought back "peace with honor," expected that the island would become an important military post; but the climate proved unhealthy for troops, and the island ceased to possess strategic value for Great Britain after the occupation of Egypt. The British administration has been inefficient, and its expense crushing to the inhabitants and a burden to the British taxpayer, for Parliament has granted subsidies aggregating about £500,000 for the relief of the Cypriots, and still contributes £30,000 to cover the deficit. The annual tribute due the Turkish Government and guaranteed by Great Britain is £92,800. The annual revenue previous to the British occupation was £132,000. Some of the Turkish taxes it was necessary to abandon, they were so oppressive. The revenue in 1894 was returned as £177,054, and local expenditure as £117,654. After the good harvest of 1892 no grant in aid was required for two years. The revenue is derived from customs, a salt monopoly, tithes, a land tax, excise, stamps, court dues, a tax on trade profits, military exemption fees, and taxes on sheep, goats, and pigs. The tithes are paid in kind. The Governor is Sir Walter Joseph Sendall, appointed in 1892. The area of Cyprus is 3,580 square miles. The population in 1891 was 209,286, exclusive of the garrison. The exports are grain, carobs, cotton, linseed, olives, cocoons, raisins, fruit, wine, cheese, live animals, wool, skins, vegetables, sponges, and gypsum. The imports in 1893 amounted to £316,872, and exports to £316,543.

Negotiations have been carried on with Turkey for the reduction of the tribute by its commutation into a lump sum. To this Turkey would not consent, because it would practically extinguish her rights over the island and lead to its annexation by Great Britain. The Greek inhabitants protest against the payment of tribute and demand relief from the heavy taxation that is tending to their destruction. They ask for the cession of the island to Greece.

In Asia, on the trade and military route to the East, Great Britain possesses the fortress and coal-ing station of Aden, with territory on the opposite coast of Africa, which serves as a basis of supplies and a gateway for trade. Aden has a population of 41,910. The island of Socotra has 10,000. The Somali coast protectorate has an area of 75,000 miles. On both sides of the African continent Great Britain has more recently acquired or claimed by treaty arrangements or partial occupation enormous spheres of influence (see EAST AFRICA and WEST AFRICA).

At the southern extremity of India is the fertile island of Ceylon, now largely given up to the cultivation of tea on a commercial scale. It has a partly representative government. The Governor is Sir Arthur Elibank Havelock. The area is 25,365 square miles, and the population

in 1891 was 3,008,466. The natives are Buddhists, Hindus, Mohammedans, Christians, and pagans. The revenue in 1893 was 18,051,950 rupees, and the expenditure 18,276,108 rupees. The imports were valued at 72,340,662 rupees, and exports at 74,195,368 rupees. Besides tea the products of commercial importance are cocoanuts, coffee, rice, cinchona, areca nuts, cinnamon, tobacco, and cacao. Plumbago and pearls are valuable exports. The abolition of the obnoxious paddy tax has caused a temporary decline in the revenue. The export of tea increased from 72,000,000 pounds in 1892 to 82,000,000 pounds in 1893; that of coffee from 43,000 to 55,000 hundredweight.

British North Borneo, with Labuan and the sultanates of Brunei and Sarawak, constitutes a recently acquired British possession on the island of Borneo. The Governor is Charles Vandeuleur Creagh. The total area is about 85,000 square miles, and the population 475,000. North Borneo produces tobacco, pepper, coffee, woods, sago, gutta-percha, gums, gambier, rattan, pearls, and *bêche-de-mer*. Coal and gold have been found. The revenue in 1893 was \$289,220. The imports were valued at \$1,780,593, and exports at \$1,116,714.

Beyond India, guarding the sea route to China and the protected states of the Malay peninsula, are the Straits Settlements, a Crown colony comprising Singapore, Malacca, and Penang, with the dependencies of the Cocos Islands and Christmas island. The Governor is Sir C. B. H. Mitchell. The total white population in 1891 was 3,483, and the colored population 419,901. Of the latter half were Malays and half Chinese. The revenue in 1893 was \$3,706,308, and expenditure \$3,915,482. The forts defending the new harbor at Singapore cost £100,000 to build. This expense the colony had to bear, together with an increased and growing burden for the support of the increased garrison and armaments. The imports in 1893 were valued at £160,148,960, and exports at £144,757,394. The exports are tin, sugar, pepper, gutta-percha, gambier, gums, copra, coffee, tobacco, tapioca, rattan, dye stuffs, and spices.

The colonists have complained seriously of the burdens they have been made to take upon themselves for imperial defense, which were doubly heavy on account of the fall in the value of the rupee. The British Government decreed that they should raise for that purpose £100,000 a year from 1894 till 1898, but afterward agreed that the contribution should be reduced to £80,000 for the first year and £90,000 for the second on condition that if the colonial finances should be more prosperous in subsequent years they should make up the sums remitted. They asked to have the amount reduced to £70,000 a year, and instead of that were called upon to pay £110,000 in 1897 and £120,000 in 1898. Unable to obtain any better terms, the best known of the nonofficial members of the Legislative Council, together with the justices of the peace and the members of the Chinese Advisory Council, resigned their places by way of protest in January, 1895. The entire body of colonists signed a petition setting forth that the contribution for the year amounted to 27 per cent. of the total revenue, and asking to have a reason-



able percentage of the revenue assigned for the purpose instead of an arbitrary sum. In June Lord Ripon agreed to fix the military charges at  $17\frac{1}{2}$  per cent. of the gross revenue.

The native states under the protection of the Straits Settlements are Perak, Selangor, Sungei Ujong, Negri Sembilan, and Pahang. Their aggregate revenue exceeds \$7,000,000. Johore is a semi-independent state. A scheme has been drawn up for confederating the protected states under a British Resident General. A rebellion broke out in Pahang in 1895, a renewal of the disturbances that ceased in 1892. The most valuable product of these territories is tin. Gold has been found in Negri Sembilan.

Hong-Kong, a military station and free commercial port in the China Sea, is a small island at the mouth of the Si-Kiang river. The population in 1894 was 246,009. There were 8,545 whites in 1892. The revenue for 1893 was \$1,940,260, not including \$137,874 of premiums from the water account. The expenditure was \$1,903,695, exclusive of \$355,144 of extraordinary expenditure for defensive works and the water account. The revenue is derived from land taxes, license fees, and the opium monopoly. There is a public debt of £341,800, raised for fortifications and waterworks. In the six years preceding 1891 there were \$647,300 spent for fortifications, and since then the expenditure has been higher. The Governor is Sir William Robinson. The trade with China increased from 129,181,000 Haikwan taels in 1893 to 133,218,000 in 1894.

The inhabitants of Hong-Kong have prayed for an amendment of the Constitution converting the colony from a Crown colony into one having a larger degree of representative government. The civil population consists of 211,000 Chinese, 2,000 Portuguese, 1,400 British, and a few hundred other Europeans and Americans. The colonists have protested as strenuously as those of the Straits Settlements against the excessive charges imposed upon them by the Colonial Office in London for fortifications, armaments, and garrison expenses, and also for public buildings and other improvements that they were not ready to undertake.

Mauritius is an island in the Indian Ocean, near Madagascar. It was originally owned and settled by the French. The area is 705 square miles, and the population is 371,655, of whom two thirds are natives of India, who came originally as coolies from Bombay to work on the sugar estates of the creoles. The revenue in 1893 was 8,103,922 rupees, and the expenditure 7,872,096 rupees. The imports were 18,899,939 rupees in value, and the exports 22,176,486 rupees. Besides raw sugar and rum, drugs, hemp, and caoutchouc are the principal exports. The Seychelles, Rodriguez, Diego Garcia, and other small islands are governed from Mauritius. The Governor is Sir Hubert Edward H. Jerningham. Mauritius, as well as Hong-Kong and Singapore, objects to the heavy demands of the Imperial Government for military purposes.

In America, besides the Canadian Dominion, Newfoundland, and the British Antilles, the British possessions are British Honduras and British Guiana. The former has grown out of a settlement established on the coast of Central

America for the cutting of mahogany and logwood, to which the Spanish Government granted the privilege of municipal self-government. The area is 7,562 square miles, and the population in 1893 was 31,371. The revenue in 1893 was \$301,922, and the expenditure \$365,519. The imports were valued at \$1,460,941, and exports at \$2,135,117. The Governor is Sir C. Alfred Moloney.

British Guiana has grown up from the former Spanish settlements of Demerara, Essequibo, and Berbice. The area is given as 109,000 square miles. The population in 1892 was 278,295. The limits of the colony are a subject of dispute (see VENEZUELA). The revenue in 1894 was £602,762, and expenditure £566,833. The imports were £1,920,710, and exports £2,358,918 in value. The Governor is Sir Charles Cameron Lees.

**The New Laureate.**—The office of poet laureate, which had been vacant since the death of Tennyson, in the autumn of 1892, was filled, late in the year, by the appointment of Alfred Austin. Mr. Austin was born in Headingly, near Leeds, May 30, 1835. His father was a merchant; his mother was a sister of Joseph Locke,



ALFRED AUSTIN, POET LAUREATE.

the civil engineer. Both were Roman Catholics. Alfred was educated at Stonyhurst College and at St. Mary's College, Oscott. He took his degree at the University of London in 1853, and four years later was called to the bar. But his heart was in literature rather than in the law. At the age of eighteen he published anonymously a poem entitled "Randolph," and two years afterward a novel. He definitely abandoned the law in 1861, and traveled on the Continent. He was a special correspondent in the field during the Franco-German War in 1870, has written much for journals and magazines, and founded and for ten years edited the "National Review." His predecessors in the office of laureate were: Edmund Spenser, 1591-'99; Samuel Daniel, 1599-1619; Ben Jonson, 1619-'37; William Davenant, 1660-'68; John Dryden, 1670-'89; Thomas Shadwell, 1689-'92; Nahum Tate, 1692-1715; Nicholas Rowe, 1715-'18; Lawrence Eusden, 1718-'30; Colley Cibber, 1730-'57; William Whitehead, 1757-'85; Thomas

Warton, 1785-'90; Henry James Pye, 1790-1813; Robert Southey, 1813-'43; William Wordsworth, 1843-'50; Alfred Tennyson, 1850-'92.

Mr. Austin's prose works include 3 novels—"Five Years of it" (1858), "An Artist's Proof" (1864), and "Won by a Head" (1866)—and "A Vindication of Lord Byron" (1869); "The Poetry of the Period" (1870); "Russia before Europe" (1876); "England's Policy and Peril" (1877); and "The Garden that I love" (1894). In poetry he has published "The Season," a satire (1861); "The Human Tragedy" (1862); "The Golden Age," a satire (1871); "Interludes" (1872); "Rome or Death" (1873); "Madonna's Child" (1873); "The Tower of Babel," a drama (1874); "Leszko the Bastard" (1877); "Savonarola," a tragedy (1881); "Soliloquies in Song" (1883); "At the Gate of the Convent" (1885); "Love's Widowhood" (1887); "Prince Lucifer" (1888); "English Lyrics" (1890); "Fortunatus the Pessimist" (1893); and "England's Darling" (1896).

**GREECE**, a constitutional monarchy in southern Europe. The legislative body is a single Chamber called the Boule, composed of 207 members, elected by universal suffrage for the term of four years, or until the Legislature is dissolved by the King on the advice of his responsible ministers. The reigning King is Georgios I, born Dec. 24, 1845, the second son of Prince Christian of Sleswick-Holstein-Sonderburg-Glücksburg, now King of Denmark. He was elected by the Boule in virtue of a protocol signed at London on June 5, 1863, by the three protecting powers—England, France, and Russia—and began to reign on June 27, 1863. The heir apparent is Konstantinos, Duke of Sparta, eldest son of the King, born Aug. 2, 1868, and married to Sophia, Princess of Prussia.

The ministry at the beginning of 1895 was composed as follows: President of the Council and Minister of Finance, C. Trikoupis; Minister of Foreign Affairs, M. Stephanou; Minister of the Interior, M. Boupchidis; Minister of Ecclesiastic Affairs and Education, M. Kalliphronas; Minister of War, Col. Tsamados; Minister of Marine, Capt. Bouboulis; Minister of Justice, M. Stephanou.

**Area and Population.**—The area of the kingdom is 25,041 square miles. The population is 2,187,208, of whom 1,133,625 are males and 1,053,583 females. Of the male population, 444,096 are engaged in agriculture and stock raising, 64,211 in mechanical arts, and 117,979 in commerce, 31,321 are in service, 15,735 are professional men, 12,109 are officials, 10,059 are clergymen, and 34,624 compose the army and navy. The people belong to the Greek Orthodox Church, with the exception of insignificant communities of Roman Catholics and Jews and a few thousand Mohammedans.

**Defense.**—The strength of the army in 1894 was 24,877 officers and men, with 3,739 horses and 120 field guns. There were 16,039 infantry, 1,146 cavalry, 2,287 artillery, 1,213 engineers, and 3,229 gendarmes. The legal term of active service is two years, but furloughs are commonly granted after slight instruction.

The naval force consists of 3 steel-clad vessels ("Hydra," "Spetsai," and "Psara") of 4,885 tons displacement, having 11.8 inches of armor at the

water line, and carrying 3 Canet guns of 30 centimetres caliber, 4 of 15 centimetres, and 24 small guns; two older armor clads ("Basilissa Olga" and "Basileus Georgios") armed one with 4 5½-ton and 2 3½-ton and the other with 2 10-ton Krupp guns; 4 unprotected cruisers, 12 gunboats, and 30 torpedo boats, not including 2 submarine Nordenfeldt boats.

**Commerce and Production.**—The principal commercial product is Zante currants, grown between Corinth and Patras, on the shore of the Gulf of Corinth, on the islands of Zante and Cephalonia, and in other parts of Greece, in such quantities that the price has fallen. The Greek Government has endeavored to extend the market by inducing other governments to abolish or lower their duties, and has met considerable success on the Continent, but not in England, which is the largest consumer of the Greek staple. Merchants have succeeded in opening up some new markets, notably in Russia.

The next most important exportable product is metallic ore—lead, silver, and zinc. The values, in drachmai or francs, of the principal exports in 1893 were: Currants, 46,274,650; ores, 15,002,625; wine, 4,194,250; fruit, 2,686,125; olive oil, 2,675,000; tobacco, 2,453,150; sponges, 2,290,625; silk and cocoons, 1,396,175; valonia, 1,131,500; hides, 539,325; soap, 537,500; emery, 468,925; all others, 8,384,000; total exports, 88,033,850 drachmai. The principal imports were valued, in drachmai, as follows: Cereals, 23,301,500; coal, 7,482,125; cotton goods, 5,363,175; caviar and fish, 4,049,200; woolen goods, 4,036,025. Other imports are hides, timber, sugar, coffee, animals, hardware, and metals. The total value of the imports in 1893 was 91,484,925 drachmai.

**Navigation.**—There were 6,582 vessels, of 2,788,815 tons, entered at Greek ports during 1892, and 5,482, of 2,340,720 tons, cleared.

The merchant navy consisted of 125 steamers, of 134,687 tons, and 762 sailing vessels, of 343,442 tons.

**Railroads and Telegraphs.**—The length of railroads in operation in 1893 was 568 miles, of which the Government owned 92 miles. There were 306 miles under construction.

The telegraphs have a total length of 4,751 miles, with 5,630 miles of wire. There were 817,034 internal and 347,829 foreign messages sent and received in 1892.

**Finances.**—The financial statements of the Greek Government have been unreliable, owing to a loose and variable system of accounts and the mutable theories of different financiers. The total revenue was estimated for 1894 at 88,729,669 drachmai, of which 18,236,900 were derived from direct taxes, 18,000,000 from customs, 12,477,067 from stamps, 11,027,000 from monopolies, 6,218,400 from excise, 4,309,672 from dues and fines, 3,535,796 from public property, 2,937,000 from posts and telegraphs, 1,961,200 from educational fees, 1,650,000 from police, 1,320,119 from sales, and arrears. The direct taxes are always in arrear, the Government refraining from collecting them, from consideration for agricultural distress, mixed with political motives.

The expenditures for 1894 were estimated at the total of 81,693,158 drachmai, divided as follows: Public debt, 21,999,083 drachmai; army, 14,761,946; Interior Department, 10,209,689; ad-



ministration, 8,902,661; Worship and Education, 7,359,521; Justice, 5,393,564; navy, 5,303,611; pensions and allowances, 5,270,494; Finance Department, 2,456,556; Foreign Relations, 2,001,522; civil list, 1,325,000; Boule, 496,561.

Municipal taxation is limited by law to  $2\frac{1}{2}$  per cent. of the direct taxation of the Government, besides an *octroi* duty of 2 per cent. The revenues of the municipalities amount to 17,000,000 drachmai.

The total debts of the Government amounted in 1894 to 657,653,247 drachmai payable in gold and 169,420,210 drachmai redeemable in currency. The gold debt consists of 71,521,012 drachmai, advanced by the three protecting powers in 1838, sinking-fund loans of 104,370,000 drachmai raised in 1880, 91,350,000 drachmai raised in 1884, and 133,045,000 drachmai raised in 1887, perpetual consuls amounting to 155,000,000 drachmai issued in 1889, a railroad debt of 59,907,500 drachmai contracted in 1890, 16,800,000 drachmai of gold treasury notes, and 14,159,735 drachmai of temporary loans.

**Change of Government.**—In the beginning of January, 1895, distraining for taxes and the foreclosure of mortgages by the National Bank caused disturbances in Elis and other districts. The opposition blocked legislation in the Chamber. The Government proposed to abolish *octrois* and to impose a higher house tax and a tax on all trades and professions. The people made demonstrations against these new taxes, and the police and soldiery roughly dispersed the protesting crowds that gathered in the streets of Athens on Jan. 20. The Crown Prince, who is commander of the Athens Army Corps, resented not being consulted as to the movements of his troops. He rode to the Field of Mars, where the great mass meeting was to be held, and ordered the prefect of police to cease interfering with the people's constitutional right of assemblage. The prefect refused to obey any orders but those of the Minister of the Interior. When the people surrounded the prince's horse he advised them to present their grievances to the King by deputations, and calmed their angry spirits, preventing the threatened collision between the crowd and the troops. Trikoupis got together with difficulty a quorum, to prove that he could still command a majority, and immediately adjourned the Chamber. Thus fortified, the Prime Minister complained to the King about the prince's interference, and the King sustained the prince. The Cabinet thereupon resigned on Jan. 22. The King promptly accepted the resignation of Trikoupis, and, after Admiral Kanaris had given up an attempt to form a provisional Cabinet, sent for Nikolaos Delyannis, nephew of Theodoros Delyannis, the veteran political leader. A new Cabinet was constituted on Jan. 24, as follows: President of the Council and Minister of Foreign Affairs, Nikolaos Delyannis; Minister of War, Col. Papadiamantopoulos; Minister of Marine, Capt. Kriezis; Minister of Education and Public Worship, Angelos Vlachos; Minister of Finance, Ketseas; Minister of the Interior, Col. Metaxas; Minister of Justice, Aravantinos. This was a nonpolitical ministry, composed mainly of personal friends of the King, appointed for the purpose of dissolving the Cham-

ber and superintending new elections. The ministers gave pledges that they would not be candidates for the Boule. The sessions of the Chamber were immediately suspended by royal decree for forty days. During the five months that the ministry lasted the diplomatist who presided over it did much useful work in improving the commercial relations of Greece. He concluded the negotiations for a new commercial treaty with Egypt that Trikoupis had begun, made other new commercial treaties with Russia and Belgium, and succeeded in getting the Swedish duty on currants lowered. In the Belgian treaty the duty on currants was reduced one fifth, and abolished altogether if the currants are used for distilling. In the Russian treaty Greece agreed to reduce by one half the duties on caviare, lard, and oak timber, and Russia promised to make the same reduction in her duties on olive oil, olives, and figs, and to admit currants free. Greece furthermore agreed to use only Russian petroleum, and to take it at the price current in Bremen for American oil. The Egyptian treaty opens a market for Greek tobacco. He also established better political relations with Turkey. The internal administration was improved as well. Public order was well preserved, even during an excited political campaign, and brigandage received a blow in the extermination of two out of the three bands that infested the northern part of the kingdom.

**The Delyannis Ministry.**—The elections were held on April 29. The party of Delyannis was successful in obtaining a surprising majority over the followers of Trikoupis and the outside parties. The election hinged on the readjustment of the debt. Trikoupis having attempted to scale down the principal and interest by arbitrary decree, and having failed, Delyannis promised to rehabilitate the finances of the country, restore specie payments, and raise the price of all staple commodities by means of an arrangement with the creditors, although the organs of his party had previously criticised Trikoupis for making too great concessions to the bondholders. The Trikoupiist party secured only 16 seats, while the party of his old rival won 155. Trikoupis lost his own seat in Missolonghi, and his most trusted lieutenants were defeated. There were 24 Independents elected, and 20 supporters of Ralli, 4 Progressists, and 4 followers of Deligeorgi. Trikoupis announced his withdrawal from public life for a time, leaving his adherents in the new Chamber free to adopt such course as they deemed best. The Government, so far from exercising the pressure and influence in the elections customary with partisan administrations, had forbidden state officials to take any part, and confined to their barracks all officers and soldiers on election day. In Missolonghi several officials were removed because they electioneered in behalf of Trikoupis. The sudden overthrow of the late Premier was due not wholly to his failure to extricate the country from its financial difficulties, notwithstanding the crushing taxation, but partly to some unpopular measures that he instituted, such as the establishment of a military police and the exaction of fees for tuition at the university—160 drachmai a year. When the Chamber met on June 10 and elected a Delyannist

President, the Cabinet resigned. The King sent for Theodoros Delyannis, who formed a Cabinet composed as follows: President of the Council and Minister of Finance, Theodoros Delyannis; Minister of Foreign Affairs, Skouzes; Minister of the Interior, Mavromichalis; Minister of War, Smolentz; Minister of Marine, Levidis; Minister of Justice, Varvoglis; Minister of Public Instruction, Petridis.

In intrusting the Government to Delyannis, with whom he had been on bad terms since he dismissed that statesman from office in 1892, the King exacted a promise that the ministry would not interfere with the command of the army, nor introduce any bill in the Boule to diminish the authority of the sovereign as commander-in-chief, or restrain him from making promotions and assignments to duty, on grounds of seniority and fitness only, without regard to political or social considerations.

The plan of Delyannis for the service of the debt was to allocate certain revenues, after setting aside a sufficient sum for the proper working of the administrative machine to meet the claims of the public creditors. For the administration of the sequestered surplus revenues a debt commission would be appointed, composed of some of the most important and independent men of the kingdom, but containing no representatives of the foreign bondholders. The commission was to consist of the Minister of Finance, the President of the Board of Audit, the President of the Boule, the President of the Court of the Areopagus, and the managers of three of the principal banks. He proposed to complete the Chalcis section of the Piræus and Larissa Railroad, which had cost the state 85,000,000 drachmai and was falling into decay; to save from ruin also the Myli and Kalamata Railroad; and to finish the incomplete and neglected roads throughout the country. The military police were to be altered into a state civil police in the cities and a municipal police in small towns. Educational fees were to be reduced, and the contributions of municipalities for primary education abolished. After passing these measures and two bills for the relief of the producers of currants—one slightly reducing the export tax, and one authorizing the Government to take 20 per cent. of the superabundant crop and hold it back for a year—the Boule closed its session on Aug. 1. The provisional reduction of 70 per cent. in the interest on the foreign debt was continued by Delyannis pending the arrangement of a compromise with the English, French, German, and Russian creditors. Since many of the bondholders objected to the proposals that had been made by the committees that pretended to speak for them, the Greek Government demanded that the holders of Greek bonds should register their names and the amount of their holdings as a preliminary to the negotiations, and delegate persons to act for them who would be truly representative. With the premium on gold mounting up to 89 per cent., the Government could only, at a great sacrifice, obtain the money to pay even 30 per cent. of the face of the coupons. There were 118,800,000 paper drachmai in circulation, of which 16,800,000 called for gold. The provisional gold loans amounted to 14,160,000 drachmai. The debt

amounts to \$54 per capita, and the annual charge for interest and amortization is nearly \$4. Even at the reduced interest the bondholders received a fair return for their money, as most of the loans were issued for less than 65 per cent. of their face value.

**The Olympian Games.**—An international congress held in Paris in the summer of 1894, under the presidency of the Baron de Courcel, decided on reviving the Olympian games of ancient Greece in the form of an international athletic tournament, to be held in different European cities at intervals of four years. The first celebration takes place in Athens in the spring of 1896, and the second will be in Paris in 1900. The games include gymnastics, running, quoits, bicycling, tennis, rowing, and sailing. The festivities will be diversified by spectacles and ancient Greek music.

**GUATEMALA**, a republic in Central America, declared independent when the Central American Confederation dissolved in 1847. The legislative power is vested in the National Assembly, a single chamber elected for four years by universal suffrage. The President is J. M. Reyna Barrios, elected for the constitutional term of six years that ends in 1898.

**Finances.**—Customs duties provide nearly half the revenue, and excise duties on alcohol and tobacco more than a quarter. The principal expenditures are for the debt, the army, and education. About a tenth of the revenue goes to maintain the regular army of 3,718 officers and men and pay the necessary expenses of the militia force of 67,300 men. The Government has expended money lately to procure modern military arms. It has also erected many new public buildings and entered into heavy engagements to subsidize railroads. A national bank has been established.

Guatemala defaulted on her bonds in February, 1894. The bonds are held mostly in England, though Americans and Germans hold a part. The English bondholders formed a committee, with Sir John Lubbock as chairman, and sent an agent to Guatemala. They went so far as to suggest the forcible intervention of the British Government. The Guatemalan Government declared that it had no intention of repudiating either principal or interest of the debt, that the temporary suspension was due to the depreciation of silver, and that the customs duties hypothecated for the service of the debt were regularly deposited in the treasury. Guatemalan commissioners were sent to England, and an arrangement was finally made in May, 1895. The Government offered to give a new bond for £75 bearing 4 per cent. interest in exchange for every £100 bond of the external debt, and for the internal bonds to issue new ones for 93½ per cent. of their face value, bearing likewise 4 per cent. interest. The London bondholders agreed to accept this compromise.

**Education.**—Education is free and compulsory by law, and the Government maintains 1,304 primary schools, but only 43,789 children out of 143,453 of school age were in attendance in 1893. The Government expended \$1,120,000 on education in 1894, over a tenth of its income.

**Railroads.**—A railroad from San José to the capital, 72 miles, and one from Champerico to



Ritalhuleu, 27 miles, were completed in 1883. The latter was afterward extended to San Felipe, 20 miles from Ritalhuleu. A railroad from the capital to the Pacific coast, built by an American company, was opened on March 15, 1895. The division completing the line to the Atlantic coast is to be finished by 1897. The Government grants a subsidy of \$8,000 a mile.

**The Mexican Boundary.**—A dispute with Mexico over a part of the boundary between the two republics became so acute before the beginning of 1895 that troops were sent to the frontier by both governments, and military preparations were made on a large scale. Each Government stood firmly by its claim to the district, and Mexico demanded compensation for the damage inflicted upon *cessionnaires* by the expulsion of their servants, the destruction of buildings, and the burning of forests. The disputed district is a gore jutting into

Guatemalan territory that looks as though it ought to belong to Guatemala. Costa Rica and the other Central American states showed strong sympathy with Guatemala, and indicated a willingness to come to her aid with their military forces. The United States Government, on Jan. 25, 1895, intervened with the suggestion that the dispute was a proper subject for arbitration, and proffered its services to bring about an amicable settlement. The Mexican Government was ready to concede the disputed district to Guatemala, but demanded an apology and reparation. A treaty was signed by Ministers De Leon and Mariscal, in the city of Mexico, that gave complete satisfaction to Guatemala, and the Mexican Senate, in April, ratified it by a unanimous vote. The question of indemnities was left to be settled by arbitration. The United States minister to Mexico was, on Sept. 16, selected as arbitrator.

## H

**HAWAII**, a republic in the Hawaiian Islands of the Pacific Ocean, proclaimed July 4, 1894, succeeding a Provisional Government that was formed on Jan. 13, 1894, when Queen Liliuokalani conditionally abdicated the throne. The legislative power is vested in a Senate and a House of Representatives, the former consisting of 15 members elected for six years by indirect limited suffrage, and the latter also of 15 members, elected by the suffrage of native or naturalized Hawaiians and whites. The President is elected for six years by the two houses in joint session. There is a State Council of 15 members, appointed by the Senate, the House of Representatives, and the President, each naming one third.

The President is Sanford B. Dole, elected for the term that expires in 1900. His Cabinet in the beginning of 1895 was composed as follows: Minister of Foreign Affairs, Francis March Hatch; Minister of the Interior, James A. King; Minister of Finance, S. M. Damon; Attorney-General, William Owen Smith.

**Commerce and Production.**—Sugar is the principal product. The imports in 1893 were valued at \$5,347,000, and the exports of domestic produce at \$10,742,000. The export of sugar was \$10,200,958; of rice, \$317,473; of bananas, \$105,096; of wool, \$30,259. The principal imports are provisions, cotton goods, cereals, timber, apparel, machinery, and hardware. Nearly all the exports go to the United States, and the bulk of the imports come from there, though lately Japanese, Chinese, and British merchants have diverted a part of the trade to other countries. All the sugar was formerly shipped to San Francisco, but in 1895 cargoes were sent to New York by way of Cape Horn. There were 315 vessels, of 323,685 tons, entered at the port of Honolulu in 1893.

**Prosecution of Royalists.**—A royalist uprising that occurred in the environs of Honolulu on Jan. 6, 1895, was quickly suppressed. Of the insurgents 12 were killed and 500 taken prisoners. On the Government side C. L. Carter, late

Commissioner to the United States, was killed. In one of the improvised forts were found 36 rifles with ammunition and 2 dynamite bombs. These munitions were landed from the schooner "H. A. Wahlberg," of San Francisco, whose entire crew was arrested. A second fight occurred in the Manoa valley on Jan. 9, in which several insurgents were slain. Among 70 persons who were arrested for complicity in the attempted rebellion were 10 American citizens and 10 British subjects. The leaders in the uprising were Samuel Nowlein, formerly colonel of the Queen's body guard, and Robert Wilcox, who directed the revolutionary uprising of 1887. There were 40 rifles and cartridge belts found in the residence of the deposed Queen. All persons not in the police or on military service were compelled to deliver up their arms. Under martial law, which was proclaimed on Jan. 7, Major Seward, formerly of the United States army, and Charles T. Gulick, who was Minister of the Interior in 1885-'86 under King Kalakaua, and who claimed to be an American citizen, were condemned to death; also an Englishman, William H. Rickard. T. B. Walker was condemned to imprisonment for life and fined \$5,000. United States Minister Willis, under special instructions from Secretary Gresham, demanded delay of execution for American citizens who were condemned to death by a military tribunal for mere complicity without participation in the revolution, or condemned for actual participation without a fair and open trial and opportunity for defense. He was instructed to report in either case the evidence relied on to support the death sentence. Identical representations were made by the British Government.

Ex-Queen Liliuokalani was arrested on Jan. 16 and imprisoned on the charge of complicity in the insurrection. On Jan. 24 she sent a letter to President Dole in which, in the hope of obtaining clemency for the misguided Hawaiians and others who had engaged in a rebellion for her restoration, but asking for no indulgence for herself, she solemnly renounced all her claims

to the throne and absolved her former subjects from all allegiance to herself and her heirs and successors, declaring her intention to live henceforth in absolute privacy and retirement from public affairs, and offering to take an oath to support the republic and never encourage or assist directly or indirectly in the restoration of a monarchical form of government. Attorney-General Smith accepted the renunciation of sovereign rights and oath of allegiance, on the understanding that the ex-Queen was in no degree exempt from liability to punishment for complicity in the rebellion, and with the reservation that her sovereign rights ceased to exist on Jan. 24, 1893, when she refused to be longer bound by the fundamental law, and promised to give full consideration to her unselfish appeal for clemency for those who took part in the insurrection.

The trial of the supposed instigators of the attempted rising began on Jan. 17. Wilcox and Nowlein pleaded guilty and gave information regarding the conspiracy. The prisoners were Gulick, Rickard, T. B. Walker, Seward, Bowler, Bertlemann, Wilcox, Nowlein, James Lane and his brother, Grey, Weidemann, and Marshall. John Cummings, Kalakaua's last Premier, was implicated. T. B. Walker pleaded guilty, and for that reason was not sentenced to death. Gulick denied guilt emphatically. A new royalist Constitution had been drawn up and a Cabinet selected, with R. W. Wilcox at its head. C. W. Ashford, a Canadian, who was named Attorney-General, was sentenced on trial to a year's imprisonment and \$1,000 fine. John S. Bowler, an Irish-American, was sentenced to five years' imprisonment and \$5,000 fine. Of 70 natives and half whites who were tried for treason or misprision 23 were convicted and sentenced to imprisonment, the terms ranging from five to ten years. While the trial proceeded fresh arrests were made daily, 700 in the course of a month. American newspaper correspondents and local journalists were arrested to prevent undesirable news from being published. J. B. Johnston, J. Cranstoun, and Alfred Muller were taken from prison and against their protest placed on board a steamer bound for British Columbia; 17 other men, mostly Englishmen, accepted the privilege of leaving the country in preference to standing trial. Charles Creighton, Attorney-General under the Queen, and other old officials, were released from prison and allowed to sail for the United States. In all, 234 were banished. The persons condemned to death by court-martial were retried by the military commission. Gulick, Seward, Rickard, Bertlemann, Nowlein, and Wilcox were sentenced to thirty-five years' imprisonment and fined \$10,000 each; Walker, W. H. C. Grey, Louis Marshall, and Judge Weidemann to thirty years' imprisonment. Nowlein and Bertlemann were released in consideration of their disclosures to the Government, their sentences being suspended. The trial of Mrs. Liliuokalani Dominis, the ex-Queen, for misprision of treason, resulted in her conviction. She was condemned to imprisonment for five years, it having been proved that she had ministers selected for the event of her restoration, but not that she knew of the intended rebellion or the secreted arms. The military commission adjourned on March 18, and

martial law was suspended. The United States and British Governments both refused to interfere in behalf of those of the convicted persons who claimed to be their citizens but had also exercised the rights of citizenship in Hawaii. The sentences of the convicted leaders were commuted on July 4 to twenty years of imprisonment. The British Government, after inquiry, represented that Rickard and Walker were British subjects, since they had never abjured their allegiance to Great Britain. The Government was not willing to recognize in their case the principle of dual citizenship, and offered to submit the rights of the matter to arbitration.

**Political Affairs.**—Financial and race problems complicated the political situation and added to the perplexities of the Government. After the Queen's formal abdication there was little disposition on the part of the natives to start a new rebellion. When they saw that neither the United States nor Great Britain intervened to rescue the imprisoned royalists, they generally followed the ex-Queen's advice to make the best of their lot under the white men's republic, although individual plotters still endeavored to recruit filibustering expeditions and procure arms in the United States and Canada for a fresh uprising. The Government rendered its military position secure by thoroughly training and equipping a standing army of 1,200 men, many of them from the United States. Lorin A. Thurston, minister to the United States, was recalled, having become *persona non grata* through discussing state papers prematurely in newspaper interviews, and publishing reflections upon the diplomatic attitude of the Government to which he was accredited. Secretary Gresham requested his recall on Feb. 21. Mr. Hatch was sent to Washington in his place. The Government made new repressive laws to check open expressions of discontent. Any one who criticised the rulers could be tried under an act against persons suspected of unlawful intentions. This act provides that any person suspected of lawless intentions, hostile to public order or to the Government, may be summoned before a court and summarily examined, and, if the intention be shown to have existed, this person shall be sentenced to expulsion from the Hawaiian Islands. If the judge be not fully convinced, he may put the person under bonds. No Legislature having yet been convoked, legislation still remained in the hands of the combined Executive and Advisory Councils, the 19 men who formed the original Provisional Government. The President introduced an act giving to the Government power to suppress for a period not exceeding four years any offending newspaper or any journal started in the place of one that has been suppressed. The wealthy supporters of the Government were very anxious about the Japanese, who already made one third of the male population, and were coming in increasing numbers, who were clamoring for the suffrage, and who were aggressively independent, and so united that the authorities refrained from arresting them for the same offenses that other foreigners had to suffer for, or released such as were arrested at the truculent demand of their fellow-countrymen. The Government is disposed to discourage the further immigration of



Japanese, but can only stop their importation as contract laborers, their free entrance being secured by a treaty in which most-favored-nation treatment is guaranteed. As a counterpoise to the Japanese, the Portuguese have been invited to come in larger numbers, but a Hawaiian agent who was sent to the Azores in 1894 was unable to engage many either as colonists or as laborers. An act was passed securing indemnity to officers of the Government and others for acts done under martial law for the suppression of the rebellion, and protecting them from legal claims for damages. Another act forbade the return of any person deported under martial law, or banished by sentence of any court without the permission of the Minister of Foreign Affairs. The first Legislature was convened for a special session on June 12. President Dole in his address deprecated Asiatic immigration, and proposed to settle American and other white immigrants on the crown estates and public lands.

Some of the natives and white royalists, men who had always opposed annexation, held meetings in conjunction with the Hawaiian Annexation League and members of the American League to promote the policy of annexation to the United States. These natives changed front on this question in the hope that annexation would put an end to the objectionable Government, and bring the country under the liberal laws of the United States.

The British Government, having recognized the Hawaiian Republic, recalled Major James Hay Wodehouse, for twenty-five years British minister to Hawaii, and appointed Mr. Hawes British commissioner and consul general. Major Wodehouse, on his departure, neglected to pay an official farewell to the Dole Government, and proposed to take leave of the ex-Queen, who was imprisoned in a room of the palace, but could not get permission to visit her. Col. C. S. Spalding, a sugar-planter of Hawaii, obtained a concession to lay a cable between the islands and the Pacific coast of the United States, with a subsidy of \$50,000 a year for twenty years, in return for which he promised to send all messages of the Government free. He formed a company in conjunction with American capitalists, and applied to the United States Congress for a subsidy.

**HAYTI**, a republic on the island of Hayti, in the West Indies. The National Assembly consists of a Senate, of 39 members, and a House of Representatives. The President and electoral colleges present separate lists of nominees, from which the House of Representatives every two years elects one third of the Senators to take the place of those whose term of six years has expired. The Representatives are elected directly for two years by the votes of all male citizens who have a regular occupation. The President is elected for the term of seven years by the direct vote of the people or by the joint vote of both houses of the Legislature. The President is Gen. L. M. F. Hippolyte, elected in May, 1890.

**Finance.**—Almost the sole source of the revenue is the customs tariff. Duties on exports are paid in United States gold and import duties in currency. The revenue for the year ending Sept. 30, 1893, was \$7,405,250 in gold, the export duties amounting to \$3,164,960 and import

duties to \$4,526,620 in currency. The expenditure for 1893 was estimated in the budget at \$8,498,524 in currency.

The public debt on Jan. 1, 1893, consisted of a 5-per-cent. external loan of \$4,471,312, internal loans of \$4,406,083, also paying 5 per cent., a floating debt of \$186,960 in gold and \$802,714 in currency, and \$3,085,482 of temporary loans, besides the paper currency, of which \$4,040,795 were outstanding, making a total of \$16,993,347.

**Attempted Rebellion.**—President Hippolyte in March, 1895, made a tour of the country with his army. In the north and on the south coast the antagonists of the President were quiet, but near the border of Santo Domingo Gen. Hippolyte was suddenly attacked while sleeping by a small band of revolutionists. He mounted his horse and directed the troops, who, after a short and sharp fight, put the rebels to flight, as they were armed with revolvers and *machetes* only. All who were taken were instantly shot. The rebels were partisans of Gen. B. Canal, successor to Gen. Anselm Prophete, deceased, as a candidate for the presidency. They knew that some of Gen. Hippolyte's troops were dissatisfied, and expected them to join the revolt.

**HOLLAND.** (See NETHERLANDS.)

**HONDURAS**, a republic in Central America. The Congress is a single chamber, containing 37 members, elected by direct suffrage for four years. The President is elected by popular vote for the term of four years, though Policarpo Bonilla, President for the term ending in 1897, became chief of the state as leader of a revolution, and was elected on Dec. 24, 1893, by a constituent assembly. There is an active army of 500 men, and about 20,000 militia. The republic is computed to be 46,250 square miles, with a population of 396,048. Tegucigalpa, the capital, has 12,000 inhabitants.

**Communications.**—A railroad from Puerto Cortez to San Pedro Sula, 37 miles, has been built twenty-five years. Originally it extended to Pimienta, but the whole line, being poorly constructed, fell into disuse, and under subsequent managements it never reached beyond Pimienta, until, on Feb. 22, 1895, an extension to Chamelecon, 6 miles, was opened to traffic. The line will be continued to Pimienta and Comayagua. Concessions have been granted for a railroad from Tegucigalpa to the Pacific coast and to one terminating in the Mosquito territory in Nicaragua. There are 1,800 miles of telegraph.

**Central American Union.**—The hostile acts of Great Britain in Nicaragua gave a fresh impulse to the movement for confederation of the five Central American republics. First a treaty establishing an offensive and defensive alliance between Honduras and Nicaragua was concluded and promulgated on May 4, 1895. The treaty did away with the commercial boundaries between the two countries, and pledged the two contracting governments to labor incessantly for the adoption of similar treaties by all the Central American republics until they become one united nation. The presidents of the other republics expressed themselves as in favor of union, and in June a conference was called by President Gutierrez, of Salvador. President Bonilla and Zelaya, the Nicaraguan

President, met him at Amapola and discussed the question of union and the terms of agreements tending toward federation. An agreement was prepared which prohibits exiles from fomenting revolutions. President Barrios declined to take part in a federation conference unless the old claim of Guatemala to supremacy on the ground of its superior size and population should be recognized beforehand. President Iglesias, of Costa Rica, on account of a boundary dispute with Nicaragua, also declined to come. A compact to establish permanent peace in Central America was drawn up and signed by the heads of the three republics. The compact unites them into a single nation in regard to their external political and commercial relations. The united republics will be known as the Greater Republic of Central America until Guatemala and Costa Rica also accept the agreement, when the title will be the Republic of Central America. The internal affairs of each republic will continue to be carried on under its own constitution by its proper legislature. All external affairs will be transacted under the directions of a Diet consisting of one deputy from each legislature and one other member representing each republic. The members serve three years. A majority vote decides. In negotiations with other governments the Diet chooses one of its members to act as plenipotentiary. It appoints all diplomatic and consular representatives. The Diet meets annually at the capital of each republic in turn. All questions now in abeyance or that may arise in future between any of the republics and a foreign government shall be discussed by the Diet according to data and instructions furnished by the interested government. If it be impossible to arrange in a friendly manner a question presented for consideration or to have the question submitted to arbitration, it shall notify all three governments, and a majority of them shall decide whether to accept the result of the negotiations or to declare war. When arbitration is agreed upon the Diet shall nominate an arbitrator, and must select from among the residents of the American republics.

**HUNT, RICHARD MORRIS**, architect, born in Brattleboro, Vt., Oct. 31, 1828; died in Newport, R. I., July 31, 1895. He was a son of Jonathan Hunt, a Representative in Congress for many years, and a younger brother of William Morris Hunt, the painter. In 1843 he was graduated at the Boston High School, and, having chosen the profession of architecture, went to Europe to study in the same year. He spent 1844 with Samuel Darier in Geneva, Switzerland, and in 1845 entered the *atelier* of Hector Lefuel in Paris, and also became a student at the *École des Beaux Arts*. During the nine years he was with Lefuel he made several professional journeys in Europe, Egypt, and Asia Minor. In 1854, Lefuel succeeded Visconti as architect of the new buildings connecting the Tuileries and the Louvre, and secured for his pupil the appointment of inspector of the work. Mr. Hunt was placed in special charge of the *Pavilion de la Bibliothèque*, opposite the *Palais Royal*, and under his chief made all the studies and drawings for that work. He returned to the United States in 1855, and established himself in New

York city. His first engagement here was with Thomas U. Walter, whom he assisted in preparing plans for the completion of the Capitol in Washington. On settling permanently in New York, he opened an *atelier* for students similar to those in Paris, at first in the University Building, and afterward in the Tenth Street Studio Building, which he had recently designed and erected, and was influential in founding the American Institute of Architects. His first public work comprised designs for the four southern entrances to Central Park, which were adopted by the Park Department in 1860, but up to the present time have not been carried out. In 1861-'2 Mr. Hunt was principally engaged in study and travel in Europe, being part of the time a pupil of Barye the sculptor, and in 1867 he was a member of the jury of the Paris Exposition. In 1870 he entered on the really productive part of his career, which first exhibited the results of his study and the direction of his mind in the line of domestic architecture at Newport, R. I. His work there transformed that city from a popular summer resort to a costly and artistic residential place, replete with charm and comfort all the year round. His genius soon began to find expression in great business structures, so that within a few years he distinguished himself as the creator of a unique style of both domestic and business architecture. In 1876 he was appointed a member of the jury of the Centennial Exposition at Philadelphia. His last noted public work was in connection with the World's Columbian Exposition at Chicago in 1893. He was president of the board of architects selected to confer with the Chief of Construction regarding the grouping of buildings and their architecture, and besides this advisory work he designed the noble Administration Building (see "Annual Cyclopædia" for 1891, page 838). He was awarded the Queen's gold medal by the Royal Institute of British Architects in 1893, and at the personal presentation of it President MacVickar Anderson paid Mr. Hunt and his work this compliment: "We are about to do honor to a citizen of the great Western republic, one whose name we are proud to enroll as one of our gold medalists not only on account of high personal and professional merit, but also because he is the first American whose name will appear in that roll call of illustrious artists. That the selection should this year have fallen on one who has designed the principal building in the great Columbian Exposition which attracts the world's sightseers to Chicago at the present moment, and which will hereafter associate the name of America with the most wondrous development that international exhibitions have ever reached, or perhaps are ever likely to attain, is, to say the least, a singularly fortunate coincidence. In honoring Mr. Hunt, in recognition of his eminence and of his works as an artist, we rejoice that we are thus able to pay a graceful tribute to the United States in the person of one of her most distinguished sons." On Dec. 23, 1894, Mr. Hunt received the honor of election to a vacant associate membership of the *Académie des Beaux Arts*, a distinction rarely conferred on a foreigner, and a graceful supplement to the honorary membership of the Institute, which he had held for some years. He was also an honorary mem-



ber of the Central Society of French Architects, the Royal Institute of British Architects, the Engineers' and Architects' Society of Vienna, and the Academy of St. Luke, in Rome, Italy, and a member of the Legion of Honor of France, the American Institute of Architects, and the Architectural League. In 1892 he received the honorary degree of LL. D. from Harvard Col-



lege, being the first artist ever so honored by that institution. Among the best-known structures designed by him, besides those already mentioned, are the monument erected by the United States Government at Yorktown, Va., in 1881; the pedestal of the statue of Liberty in New York harbor; the Astor memorial doors of bronze in Trinity Church, New York city; the United States Naval Observatory at Washington; the new academic and gymnasium buildings of the United States Military Academy at West Point; the Marquand Chapel and Theological Library at Princeton College; the Divinity School and the Scroll-and-Key Society building at Yale College; the Lenox Library, Presbyterian Hospital, "New York Tribune" building, Coal and Iron Exchange, Guernsey office building, and the residences of William K. Vanderbilt, Ogden Mills, Elbridge T. Gerry, John Jacob Astor, and Henry G. Marquand—all in New York city; residences of Cornelius Vanderbilt ("The Breakers"), Ogden Goelet ("Ochre Court"), J. R. Busk, Prof. Shields, and Oliver H. P. Belmont ("Belcourt")—all in Newport, R. I.; residence of William K. Vanderbilt at Oakdale, L. I.; residence of George Vanderbilt at Biltmore, N. C.; the Fogg Museum, Cambridge, Mass.; the Vanderbilt mausoleum on Staten Island; and the Mills tomb at Tarrytown, N. Y.

**HUXLEY, THOMAS HENRY**, an English scientist, born in Ealing, Middlesex, England, May 4, 1825; died in Eastbourne, June 29, 1895. His father was a teacher in Ealing. Of his mother he wrote: "Physically and mentally, I am the son of my mother so completely—even down to the peculiar movements of the hands, which made their appearance in me as I reached the age she had when I noticed them—that I can hardly find any trace of my father in my-

self, except an inborn faculty for drawing, which, unfortunately, in my case has never been cultivated; a hot temper, and that amount of tenacity of purpose which unfriendly observers call obstinacy. My mother was a slender brunette of an emotional and energetic temperament, and possessed of the most piercing black eyes I ever saw in a woman's head. With no more education than other women of the middle classes in her day, she had an excellent mental capacity. Her most distinguishing characteristic, however, was rapidity of thought. If one ventured to suggest that she had not taken much time to arrive at any conclusion, she would say: 'I can not help it; things flash across me!' That peculiarity has been passed on to me in full strength; it has sometimes played me sad tricks, and it has always been a danger." His earliest education was received at the school where his father taught. Poverty made a university career impossible, and he turned to reading. The works of Thomas Carlyle, John Stuart Mill, and the philosophical writers of Germany were studied with eagerness. No book came amiss. He took up one pursuit after another, but failed to continue in any very long. His great desire was to become a mechanical engineer, and he read much with this in mind. Although he failed to realize this ambition, he retained to the last a taste for the mechanical side of investigation. Finally, he began the study of medicine in the office of his brother-in-law, a physician. Thence he passed to the Charing Cross Medical School, where he was graduated in 1846 with high honors in physiology. Of this period he wrote: "The only part of my professional course which really and deeply interested me was physiology, which is the mechanical engineering of living machines; and notwithstanding that natural science has been my proper business, I am afraid there is very little of the genuine naturalist in me. I never collected anything, and species work was always a burden to me; what I cared for was the architectural and engineering part of the business, the working out of the wonderful unity of plan in the thousands and thousands of diverse living constructions, and the modification of similar apparatus to serve diverse ends." While he was in the medical school he published a paper in which he described the layer of cells of the inner root-sheath of the hair, and this is now called Huxley's layer.

As he was too young to qualify at the College of Surgeons, he applied to Sir William Burnett for a medical appointment in the navy. He was instructed to call, which he did, and he thus describes the result:

I think I see him now as he entered with my eard in his hand. The first thing he did was to return it with the frugal reminder that I should probably find it useful on some other occasion. The second was to ask whether I was an Irishman. I suppose the air of modesty about my appeal must have struck him. I satisfied the director general that I was English to the backbone, and he made some inquiries as to my student career, finally desiring me to hold myself ready for examination. Having passed this, I was in her Majesty's service and entered on the books of Nelson's old ship "Victory" for duty at Haslar Hospital about a couple of months after I made my ap-

plication. My official chief at Haslar was a very remarkable person—the late Sir John Richardson, an excellent naturalist, and far famed as an indomitable Arctic traveler.

Months passed, during which his existence was apparently ignored, when suddenly “Old John” (as the chief was styled), meeting him, described the service in which the “Rattlesnake” was about to be ordered: “He said that Captain Owen Stanley, who was to command the ship, had asked him to recommend an assistant surgeon who knew something of science. Would I like that? Of course I jumped at the offer. ‘Very well, I give you leave; go to London at once and see Captain Stanley.’ I went, saw my future commander, who was very civil to me, and promised to ask that I should be appointed to his ship, as in due time I was.” Then followed four years of absence from home, during which the “Rattlesnake” surveyed some of the passages round the coast of Australia and explored the sea between that continent and New Guinea. In the course of his voyage Mr. Huxley made extensive observations of the natural history of the sea, especially with reference to the anatomy of the mollusks and *Medusæ*. He collected a great number of specimens, and wrote several papers which he sent home. Of these he says:

During the four years of our absence I sent home communication after communication to the Linnean Society, with the same result as that obtained by Noah when he sent the raven out of his ark. Tired at last of hearing nothing about them, I determined to do or die, and in 1849 I drew up a more elaborate paper and forwarded it to the Royal Society. This was my dove, if I had only known it. But, owing to the movements of the ship, I heard nothing of that either until my return to England in the latter end of the year 1850, when I found it was printed and published, and that a huge packet of separate copies awaited me.

For three years after his return he continued in the navy, and persistently tried to persuade his superiors to contribute to the expense of publishing the scientific results of the expedition. At last, weary of his efforts, the Admiralty ordered him to join a ship, “which thing,” he says, “I declined to do,” and he resigned.

I desired to obtain a professorship of either physiology or comparative anatomy, and as vacancies occurred I applied, but in vain. My friend Prof. Tyn-dall and I were candidates at the same time—he for the chair of Physics, and I for that of Natural History in the University of Toronto, which, fortunately, as it turned out, would not look at either of us. I say fortunately, not from any lack of respect for Toronto, but because I soon made up my mind that London was the place for me, and hence I have steadily declined the inducements to leave it which have at various times been offered.

In 1854 his friend Edward Forbes resigned from the place of palæontologist to the Geological Survey and from the lectureship on natural history in the Royal School of Mines. “I refused the former point-blank,” says Huxley, “and accepted the latter only provisionally, saying that I did not care for fossils and that I should give up natural history as soon as I could get a physiological post. But I held the office for thirty-one years, and a large part of my work has been palæontological.”

Meanwhile he had begun to attain a standing among scientists. He was made a fellow of the Royal Society in June, 1851, and in 1852 one of its medals was conferred upon him. In 1859 the Royal Society published the scientific results of his expedition, under the title of “*Oceanic Hydrazoa: A Description of the Calycoporidæ and Physophoridæ.*” Then came the memorable discussion on Darwin at the Oxford meeting of the British Association in 1860. Michael Foster, his friend for forty years, describes the event in these words:

The bishop [Wilberforce] had spoken; cheered loudly from time to time during his speech, he sat down amid rapturous applause, ladies waving their handkerchiefs with great enthusiasm, and in almost dead silence, broken merely by greetings which, coming only from the few who knew, seemed as nothing. Huxley, then well-nigh unknown outside the narrow circle of scientific workers, began his reply. A cheer, chiefly from a knot of young men in the audience—hearty, but seeming scant through the fewness of those who gave it, and almost angrily resented by some—welcomed the first point made. Then as, slowly and measured at first, more quickly and with more vigor later, stroke followed stroke, the circle of cheers grew wider and yet wider, until the speaker's last words were crowned with an applause falling not far short of, indeed equaling, that which had gone before—an applause hearty and genuine in its recognition that a strong man had arisen among the biologists of England.

To the scientific reputation that he had already achieved he thus added one of a more popular character, and thereafter he took rank among the great men of England. Other appointments followed his acceptance of the chair in the Royal School of Mines. In 1854 he was made Fullerian Professor of Physiology to the Royal Institution, and during the same year he became examiner in physiology and comparative anatomy for the University of London, which place he held for seven years. From 1863 to 1869 he was Hunterian Professor in the Royal College of Surgeons, and during the absence of C. Wyville Thompson in 1875–76 he filled his place as Professor of Natural History in the University of Edinburgh. In 1870 he was elected a member of the London School Board, and in its deliberations he became specially prominent as the opponent of denominational education, particularly that of the Catholic Church. He retired from the board in 1872, owing to illness. In the same year he was elected Lord Rector of the University of Aberdeen, and in 1874 was installed. On the death of Frank Buckland, in 1881, he was called to the vacant post of Inspector General of Salmon Fisheries. Failing health compelled his resignation from various appointments in 1885, but at the request of the lord president he retained his connection with the Normal School of Science and the Royal School of Mines as dean and Honorary Professor of Biology. He served on many Government and royal commissions, among which were those relating to fisheries, contagious diseases, vivisection, and Scottish universities.

The degree of Ph. D. was conferred on him by Breslau, that of M. D. by Würzburg, that of LL. D. by Edinburgh and Cambridge in 1879, and that of D. C. L. by Oxford in 1886.











New York, D. Appleton & Co.

*J. M. Mulvey*





The King of Sweden made him a Knight of the Pole Star, and he became a privy councilor to his own sovereign in 1892. The Royal Society gave him its Wollaston medal in 1876, its Copley medal in 1888, and its Darwin medal in 1894. The Academy of Natural Sciences of Philadelphia awarded him in 1893 the Hayden memorial medal. He became its secretary in 1873, and its president in 1883, serving for two years only. The Geological Society made him its president in 1869, and the Ethnological Society similarly honored him in 1870, while during the same year he presided over the British Association. In 1884 he was made a fellow of the Royal Col-

also lectured on the "Elements of Comparative Anatomy" and on the "Classification of Animals and the Vertebrate Skull." In 1876 he visited the United States, and after delivering an address at the opening of Johns Hopkins University, lectured in New York city "On the Direct Evidences of Evolution." He delivered the Rede lecture in Cambridge in 1883 on "The Origin of the Existing Forms of Animal Life—Creation or Evolution," and in 1893 he delivered the second Romanes lecture, "Evolution and Ethics," in Oxford. With Darwin, Tyndall, and Herbert Spencer, he brought about the general acceptance of the doctrine of



HOUSE IN WHICH PROFESSOR HUXLEY WROTE MANY OF HIS BOOKS, NO. 4 MARLBOROUGH PLACE, ST. JOHN'S WOOD.

lege of Surgeons. In 1879 he was chosen a corresponding member of the French Academy of Sciences, and in 1883 he was elected a foreign member of the National Academy of Sciences. He was also a foreign or corresponding member of academies in Berlin, Brussels, Göttingen, Haarlem, Lisbon, Munich, Philadelphia, Rome, St. Petersburg, and Stockholm.

Huxley more than any other scientist of the century influenced public opinion by his writings and public utterances. In 1860 he delivered a course of lectures to workingmen on "The Relation of Man to the Lower Animals." At once his views became the subject of controversy, and a summary of the discussion is given in his "Evidences as to Man's Place in Nature" (1863). In 1862 he gave another course to workingmen, and his lectures were published with the title "On our Knowledge of the Causes of the Phenomena of Organic Nature" (1863). He

evolution. Huxley's special work was that of proving it by biological evidence. Of his success Haeckel has written the following words:

Not only has the evolution theory received from Prof. Huxley a complete demonstration of its immense importance, not only has it been largely advanced by his valuable comparative researches, but its spread among the general public has been largely due to his well-known popular writings. In these he has accomplished the difficult task of rendering more fully and clearly intelligible to an educated public of very various ranks the highest problems of philosophic biology. From the lowest to the highest organisms he has elucidated the connecting law of development. In these several ways he has rendered science a service which must ever rank as one of the highest of his many and great scientific merits.

Huxley's scientific papers for the most part appeared in the journals and proceedings of the Royal, Linnæan, Geological, and Zoölogical Societies, and in the memoirs of the Geological

Survey of Great Britain. In book form, his scientific works include: "On Tape and Cystic Worms, with an Introduction on the Origin of Intestinal Worms by Carl Theodor von Siebold" (1857); "Lectures on the Elements of Comparative Anatomy" (1864); "An Elementary Atlas of Comparative Osteology" (1864); "Lessons in Elementary Physiology" (1866); "Palaeontologia Indica: Vertebrate Fossils" (1866); "An Introduction to the Classification of Animals" (1869); "A Manual of the Anatomy of Vertebrated Animals" (1871); "A Manual of the Anatomy of Invertebrated Animals" (1877); "The Crayfish: An Introduction to the Study of Zoölogy" (1879); and an "Introduction" to the series of "Science Primers" (1880). Concerning his more popular works it has been well said that "for mere rhetoric, for polish of expression, for structural harmony, for keen wit and sarcasm masked under the most graceful urbanity, for unsparing logic, and for luminous simplicity even when dealing with the most abstruse and difficult subjects, the books which Huxley addressed to the unscientific world are almost unparalleled in English literature." They include: "On the Educational Value of the Natural History Sciences" (1854); "Protoplasm: The Physical Basis of Life" (1869); "Lay Sermons, Addresses, and Reviews" (1870); "Essays: Selected from Lay Sermons" (1871); "Critiques and Addresses" (1873); "Hume" in the series of "English Men of Letters" (1877); "American Addresses, with a Lecture on Biology" (1877); "Physiography: An Introduction to the Study of Nature" (1877); "Science and Culture, and other Essays" (1881); and "Inaugural Meeting of the Fisheries Congress: An Address" (1883). A complete edition of collected essays, grouped in accordance with the general subject, was issued in 9 volumes, each with a new introduction (New York, 1894-'95). He was associated with Robert Etheridge in the prepa-

ration of "A Catalogue of the Collection of Fossils in the Museum of Practical Geology" (1858), and with Newell H. Martin in the "Course of Practical Instruction in Elementary Biology" (1875).

It was Huxley who coined the word "agnostic," and of its origin he wrote: "When I reached intellectual maturity and began to ask myself whether I was an atheist, a theist, or a pantheist, a materialist or an idealist, a Christian or a freethinker, I found that the more I learned and reflected the less ready was the answer, until at last I came to the conclusion that I had neither art nor part with any of these denominations except the last. The one thing in which most of these good people agreed was the one thing on which I differed from them. They were quite sure they had attained a certain 'gnosis,' had more or less solved the problem of existence, while I was quite sure I had not, and had a pretty strong conviction that the problem was insoluble. So I took thought, and invented what I conceived to be the appropriate title of agnostic. It came into my head as suggestively antithetic to the gnostic of Church history, who professed to know so much about the very things of which I was ignorant."

Still, as he saw the end approaching, he made request that the following words, written by his wife, should stand on his tomb:

And if there be no meeting past the grave,  
If all is darkness, silence, yet 'tis rest.  
Be not afraid, ye waiting hearts that weep,  
For God "still giveth his beloved sleep,"  
And if an endless sleep he will—so best.

Concerning this, Michael Foster says: "Future visitors to the burial place on the northern heights of London, seeing on his tombstone the above lines, will recognize that the agnostic man of science had much in common with the man of faith."

## I

**IDAHO**, a Northwestern State, admitted to the Union July 3, 1890; area, 84,800 square miles; population, according to the census of 1890, 84,385. Capital, Boise City.

**Government.**—The following were the State officers during the year: Governor, William J. McConnell, Republican; Lieutenant Governor, Frank B. Mills (until Aug. 10); Secretary of State, Isaac Garrett; Auditor, Frank C. Ramsey; Treasurer, C. Bunting; Attorney-General, George M. Parsons; Adjutant General, A. Case; Superintendent of Public Instruction, Charles A. Foresman; State Engineer, Frank B. Mills; Chief Justice of the Supreme Court, John T. Morgan; Associate Justices, J. W. Huston, I. N. Sullivan.

**Legislative Session.**—The Legislature met Jan. 7, and continued in session until March 9. In the House, 168 bills were introduced, and in the Senate 97. Of the 83 bills that were passed by both Houses, the Governor signed 77 and vetoed 6, two of which were passed over the veto.

Among the measures enacted was the repeal

of the law passed unanimously by the last Legislature, providing that all obligations shall be paid in gold or silver, all contracts to the contrary notwithstanding, the ground for repeal being that the measure had been detrimental to the business interests of the State. An act making a new legislative apportionment provides for a senator for every county, while representation in the House is on the basis of one representative for every 536 votes, or fraction over one half of 536, cast at the last election. The new game-and-fish law abolishes the office of county game warden, specifies what are the closed seasons, and prohibits transporting or dealing in hides of wild animals, as also hunting with dogs. Three irrigation bills were passed—the joint irrigation bill providing means of accepting the gift of 1,000,000 acres of land, under the Carey act, from the Federal Government, and two measures providing for the organization of irrigation districts, a system of water measurements, and the fixing of water rates in certain emergencies by the district courts. Un-



der the system it is proposed to purchase existing ditches or construct new ones by issuing bonds based on the property of the district and taxing all the land in the district for the payment of the bonds.

A radical change in the system of locating mines was made by a new mining law, whose most important feature is a provision requiring a locator to sink a shaft at least 10 feet within two months after location. Any open cut, cross cut, or tunnel which shall cut the lode at a depth of 10 feet below the surface, or an adit tunnel of at least 10 feet in and along the lode from the point where the lode may be in any manner discovered, shall, it is provided, be equivalent to the sinking of the required 10-foot shaft. In the case of the relocation of an abandoned claim, the relocater may sink the old shaft 10 feet farther in order to perfect his location.

The age of consent was raised from fourteen years to eighteen.

The office of State engineer was created in March, to which the Governor appointed the Lieutenant Governor, Frank B. Mills, who in August handed in his resignation as Lieutenant Governor, when Vincent Bierbower, President *pro tem.* of the Senate, became acting Lieutenant Governor. Among other laws enacted were these:

Extending the time for redemption of property sold under execution from six months to one year.

Providing for the distribution of moneys collected from liquor and gambling licenses as follows: Fifty per cent. to the school fund, 40 per cent. to the road fund, and 10 per cent. to the State treasury; in incorporated cities and towns, 50 per cent. to the school fund, 40 per cent. to the municipal treasury, and 10 per cent. to the State.

To abolish the counties of Logan and Alturas, and create therefrom the county of Blaine.

To establish the county of Lincoln from the southern portion of the new county of Blaine.

Providing for exemption from execution of certain property other than that specified as homesteads.

Repealing the merchant license law.

Providing for the issuance of seven-year improvement bonds by incorporated cities for the purpose of paving streets and constructing sidewalks, the cost to be a lien on the property benefited, and payable in seven annual payments.

Repealing the test oath.

Requiring marriage licenses.

To remit penalties on delinquent taxes in certain cases for the years 1894 and 1895.

Joint memorials to Congress were passed petitioning for free and unlimited coinage of silver and protesting against the passage of the Carlisle bill; for an appropriation of \$125,000 to be used in making surveys in Idaho preliminary to carrying into effect the provisions of the Carey law; for the removal of obstructions from the Clark's Fork of Columbia river; favoring the election of United States Senators by a direct vote of the people; and asking for a bankruptcy law.

The constitutional amendments to be submitted to popular vote, including one granting the franchise to women, and one providing for the election of a prosecuting attorney in each county.

On March 7, George L. Shoup was re-elected to the United States Senate, on the 52d ballot. The final vote was: George L. Shoup, Republican, 27; Willis Sweet, Republican, 12; A. J. Crook, Populist, 14.

**Finances.**—The State owes for outstanding warrants \$156,644.81, estimated interest on the

same \$5,000, total \$161,644.81; civil deficiency for 1893-'94, \$43,357.59; militia deficiency, \$7,965.08. Grand total of indebtedness, \$212,967.48. Resources to meet this indebtedness are: Cash in general fund, \$15,531.01; taxes due from counties, \$201,851; probable poll taxes, \$12,000; total, \$229,382.01. Deducting \$16,000 for delinquent taxes leaves a balance of revenue of \$213,382.01, or \$414.53 in excess of indebtedness. The estimate of expenses for 1895-'96 is \$463,480. The bonded indebtedness is as follows: Capitol building, \$80,000; insane asylum, \$5,000; refunding, \$108,000; wagon road, 1889, \$50,000; wagon road, 1893, \$135,000; total, \$378,000.

The appropriations made by the Legislature amounted to \$484,000, half of which were for the expenses of 1895. Additional sums to the amount of \$48,980 also became due this year, making a total of \$290,980. The State Board of Equalization in August fixed the valuation of the property of the State at \$29,332,210.38, an increase over 1894 of \$344,979.04. Of this increase \$69,000 was in the valuation of horses and \$142,000 in the valuation of sheep; another source of increase was in patented land, heretofore not taxable because the patents were not complete.

The valuation of the 900 odd miles of railroad in the State and of the telegraph and telephone lines and instruments was \$6,456,299.88, the same as last year.

Under the restrictions of the Constitution the total tax levy can not exceed 10 mills on the dollar, of which  $1\frac{1}{4}$  mill is pledged for payment of debts owed prior to the admission of the State, and for redemption of university warrants. A tax levy of  $8\frac{1}{2}$  mills on the valuation for 1895 produces \$256,656.84. The levy for 1894 was  $8\frac{1}{2}$  mills.

**Metal Output.**—During 1894 the production of gold was 111,687 fine ounces, valued at \$2,308,775; of silver, 3,774,349 fine ounces, valued at \$7,188,630. The production of lead was valued at \$2,605,450. The total metal production was valued at \$9,793,080, an increase in valuation over the production of 1893 of \$1,108,222. The flour gold, to be found in great quantities on Snake river, has attracted unusual attention, and has contributed largely to the increased production.

**Wool.**—The wool clip this year amounted to nearly 8,000,000 pounds, an increase over 1894 of more than 1,000,000 pounds. In that year there were in the State 575,178 sheep, valued at \$1 each; in 1895 the number had increased to 717,339, with the valuation the same. The valuation in 1893 was a little over \$2 each. The decrease in valuation is said to be because of the change in the tariff.

**Rabbit Bounties.**—An inquiry from the United States Department of Agriculture has developed the fact that since 1878 Ada County has paid for rabbit scalps, at 3 cents each, \$31,093.44, which is said to be a larger amount than the aggregate of bounties paid by all other States in the West that have offered bounties on jack rabbits. As the amount paid for the last quarter was over \$2,500, and the maximum tax levy for bounties was 5 mills on the dollar, the county commissioners in October stopped payment of bounties on rabbits and gophers.

**State Lands.**—The State Land Department has secured the approval of 283,000 acres of selected land during the past two years, as also the rescinding of an order withdrawing from settlement 137,000 acres of land, chiefly in Kootenai County, heretofore withdrawn as a forest reservation. The State may now select lands there, and a very valuable tract of agricultural land is made available for settlement under the homestead laws.

The State has secured the reversal of a uniform line of decisions of the Interior Department, holding that double minimum lands—that is, lands within the limits of a railroad grant—could not be selected by States in satisfaction of grants made to them.

**Surveys.**—In the allotment of the appropriation carried in the sundry civil-service bill for public surveys in 1895, Idaho received \$23,000. The general appropriation act provides that the survey of the agricultural lands thereunder must be on the application of settlers.

**Education.**—The State University began its fourth year in September with an attendance of 108, an increase of nearly 50 per cent. over 1894. To it the Legislature made an appropriation of \$16,230 to reimburse the Morrill fund, and \$2,000 for regents' expenses.

The Legislature of 1893 established State normal schools at Lewiston and Albion, but made no financial provision for them. At Albion a building has been erected by the citizens and a flourishing school opened, and in August arrangements for a new building were made. This was made possible by the legislative act authorizing the issue of bonds to the amount of \$75,000 for the support of the two schools. The enrollment at Albion for the half year ending July 1 was 83, the expenses during that period were \$5,278.22. At Lewiston the people have laid the foundations for a building. The amount of the semiannual apportionment of the State school fund, made in August, was \$9,664.46.

By act of the Legislature the location of the Agricultural College was fixed at Idaho Falls.

**Insane Asylum.**—In this institution, for whose support the Legislature made an appropriation of \$65,000, there were in December 152 patients, of whom 56 were women.

The issuing of bonds to the amount of \$25,000 for asylum improvements was authorized by the Legislature.

**Penitentiary.**—On July 1 there were 115 prisoners confined in the penitentiary, of whom 7 were held on account of the United States. To this institution an appropriation of \$65,000 was made.

**Soldiers' Home.**—An appropriation of \$28,000 was made for the support of the home, and a bill was passed enacting that the board of trustees for the home shall consist of the Governor, Secretary of State, and Attorney-General, and that they shall serve without compensation. The number of inmates at the end of September was 27, and the number of officers and employees 11.

**Decisions.**—A decision of the Supreme Court affirmed the constitutionality of the law providing that water companies shall furnish water free for fire purposes and other great public necessities.

The same court also decided that women were eligible to practice law in Idaho, the Idaho statutes to the contrary notwithstanding. The ground for the decision was that the State Constitution provides that "the Legislature has no power to deprive the judicial department of any power or jurisdiction which rightfully pertains to it as a co-ordinate department of the government," and that the admission and control of the attorneys were within the purview of this section of the Constitution.

**ILLINOIS**, a Western State, admitted to the Union Dec. 3, 1818; area, 56,650 square miles. The population, according to each decennial census, was 55,162 in 1820; 157,445 in 1830; 476,183 in 1840; 851,470 in 1850; 1,711,951 in 1860; 2,539,891 in 1870; 3,077,871 in 1880; and 3,826,351 in 1890. Capital, Springfield.

**Government.**—The following were the chief officers for the year: Governor, John P. Altgeld, Democrat; Lieutenant Governor, Joseph B. Gill; Secretary of State, William H. Hinrichsen; Auditor, David Gore; Treasurer, Henry Wulff, who qualified Jan. 15, 1895, succeeding Elijah P. Ramsey; Attorney-General, Maurice T. Mahoney; Adjutant General, Alfred Owendorff; Superintendent of Public Instruction, Samuel M. Inglis; Secretary of Labor Bureau, George A. Schilling; Fish Commissioners, R. Roe, G. W. Langford, and H. Schmidt; Railway and Warehouse Commissioners, Isaac N. Phillips, J. R. Wheeler, and Jonathan C. Willis; Secretary Canal Commission, W. A. S. Graham; Secretary Live-stock Commission, A. M. Brownlee; Superintendent of Insurance, Bradford K. Durfee; Secretary of State Board of Charities, George F. Miner; Secretary of Board of Health, Dr. J. W. Scott; Secretary of Board of Dental Examiners, L. L. Davis; Secretary of Board of Pharmacy, Frank Fleury; Factory Inspector, Florence Kelley; Chief Justice of the Supreme Court, Joseph W. Wilkin; Associate Justices, David J. Baker, Alfred M. Craig, Benjamin D. Magruder, Jesse J. Phillips, Joseph N. Carter, and Joseph Meade Bailey, who died in October.

**Finances.**—The available surplus of the treasury was practically exhausted a month before Oct. 1, 1895, the close of the fiscal year, but an advanced payment of \$250,000 from the Illinois Central Railroad Company temporarily relieved the embarrassment.

The tax rate for 1895 was 52 cents on the \$100 valuation, as equalized by the State Board. Thirteen cents belongs to the school tax; the remainder is the general revenue tax. The aggregate was estimated at \$4,332,530. But this would be reduced by about \$250,000 from delinquencies, removals, etc. Last year assessments were made on the capital stock of 263 corporations, and this year on 274.

The total assessment of railroad property is \$79,319,385, covering 9,730 miles of track.

**Legislative Session.**—The thirty-ninth General Assembly was convoked Jan. 9, with 26 newly elected members, and adjourned June 17, after passing 58 appropriation and 88 other bills. The bills included one appropriating \$900,000 for the ordinary and contingent expenses of the State and one making the tax levy for school purposes \$1,000,000 per annum. The



other bills that became laws included the following:

Making appropriations for monuments to mark the location of the Illinois troops at Chickamauga, Look-out Mountain, and Missionary Ridge.

Providing for the settlement of the estates of idiots, lunatics, drunkards, and spendthrifts.

Appropriating \$50 to each county farmers' institute in the State.

Authorizing towns to issue bonds for the completion and improvement of parks and boulevards.

Providing that no freight or passenger train shall obstruct the public highway for longer than ten minutes.

To include in judgments for wages the services of the laborer's horse or team.

To prevent and punish wrongs to children.

To require highway commissioners to destroy Russian thistles.

To prevent the spread of contagious and infectious diseases among swine.

Providing that where a corporation passes into the hands of a receiver or an individual makes an assignment, the claims of laborers for wages shall be preferred claims.

Providing that suits against insurance companies may be brought in the county in which the plaintiff resides.

Providing that teachers of special branches shall not be required to pass an examination in other branches than that which it is proposed to teach.

Providing that whoever hinders, obstructs, or delays another traveling upon the public highway shall be liable to a fine of \$25 and damages.

To punish the stealing of water and electricity.

To protect laborers and miners for labor performed in developing and working in coal mines.

To increase the number of companies in the Illinois National Guard from 84 to 88, so as to provide for the admission of a battalion of colored troops.

To prohibit the use of machines or devices for gambling purposes.

Appropriating \$1,249,000 for each of the years 1895 and 1896 for the ordinary expenses of the State charitable institutions.

To provide for State scholarships in the University of Illinois.

To create the Illinois Farmers' Institute.

To exempt certain personal property from attachment and sale on execution and from distress for rent.

Fixing the compensation of members of the General Assembly at \$1,000 for each regular session and \$5 a day for each special session and 10 cents for each mile necessarily traveled in going to and returning from the State capital.

Prohibiting barber shops from keeping open on Sunday.

A special session was called on June 25 for consideration of the following topics:

Raising revenue equal to the appropriations.

The creation of such a revenue law as will compel all persons and corporations to pay their fair share of taxes.

The abolition of the State Board of Equalization.

Legislation to put an end to the abuses and scandalous conditions prevailing in and about many of the police and justice courts.

To establish such a system of practice and procedure in courts of record as will prevent unnecessary accumulation of business.

To prevent the employment of children in such a manner as to stunt their development.

To create the proper machinery, agencies, or boards of conciliation, inquiry, and arbitration between employer and employees.

To fix a reasonable maximum limit to charges for sleeping-car service.

Such legislation as will insure fair and unbiased grand juries.

To improve the convict system.

Revision of the law relating to slander and libel.

On June 29 the Assembly, being unable to come to unanimous voice regarding the revenue law, adjourned till July 9, during which time John Myer, Speaker of the House, died, and upon their reassembling some time was lost in electing W. G. Cochran as his successor. An arbitration bill and a tax-levy bill were finally passed, and both houses adjourned on Aug. 2. Among the important measures of the session were:

A libel bill providing that in any action brought for the publication of a libel, the plaintiff shall recover only actual damages if it shall appear that such publication was made in good faith, and that in the next two regular issues of said newspaper a correction was published in as conspicuous a manner as was the libel.

Creating a fund for disabled fire-insurance patrolmen and widows of deceased patrolmen.

The providing for raising the following sums by tax: For general State purposes, \$2,500,000 upon the assessed value of property for 1895, and \$2,500,000 upon that of 1896; for school purposes, \$1,000,000 upon the same rate.

Amending the law in relation to the sale of property for taxes.

Amending the law in relation to the establishment of a State home for juvenile female offenders.

Gov. Altgeld also filed with the Secretary of State, June 27, a veto of a bill to promote the construction of water ways, but its friends claim that the veto was not filed within the time required by the Constitution and that the bill has become a law without his signature. The Governor objects to the bill because it expressly declares it to be the policy of the State to undertake an enterprise that he thinks would cost hundreds of millions of dollars. As the Constitution expressly forbids any appropriations in aid of railroads or canals, he holds the appropriation made by the bill to be unconstitutional.

Revising the pharmacy law.

Revising the mechanics' lien law.

**State Institutions.**—All the State institutions are overcrowded, although 13 new buildings have been erected, all receiving careful legislation and liberal appropriations for the next biennial period.

The Institute for Feeble-Minded Children, at Lincoln, cared for its inmates at a cost *per capita* yearly of \$135.25, the lowest in the history of the institution. Its appropriation is \$165,000, to cover cost of new building and repairs.

A permanent site for the Home for Juvenile Offenders, now at Chicago, has been selected at Geneva, Kane County.

The Soldiers' and Sailors' Home, at Quincy, has received from the United States Government \$100 per annum for each veteran present for the past two years.

The Eye and Ear Infirmary of Chicago admitted nearly 16,000 patients and treated more than 13,000 indigent persons, the total expenditure being within \$50,000.

The Blind Asylum, at Jacksonville, will benefit by the new law for the prevention of blindness. The total number of pupils enrolled during the biennial term was 318.

The Southern Hospital for the Insane, at Anna, received an appropriation of \$190,000 for replacing that portion of its buildings destroyed

by fire in January. Its average number of patients annually was 562; average cost *per capita*, \$169.69; average time in hospital, two years.

The Eastern Insane Asylum, at Kankakee, was never in better condition. In connection with this asylum a laboratory has been established and a pathologist employed, who gives all his time to scientific investigations and general discussion with the physicians of the institution. The total number of patients treated was 2,467; discharged, 371, of which number 99 were recovered. Of the number treated, 78 were readmitted. The net cost *per capita* yearly was \$140.54.

The Northern Hospital for the Insane, at Elgin, had 1,001 patients, 87 being readmitted. During the biennial period 514 patients were discharged, of which number 171 had recovered. The number of deaths was 176; the gross cost *per capita* \$150.

The site for the Western Hospital for the Insane, a new institution, has been chosen at Watertown, near Rock Island.

The Joliet Penitentiary, having a deficit of \$129,144.48, asked for an appropriation, and received one of \$100,000 a year for two years. The penitentiary is greatly overcrowded.

The penitentiary at Chester is in good condition. The average number of prisoners was 658; ordinary cost *per capita*, 38 cents a day; earnings *per capita*, 23 cents.

The Reformatory Institution at Pontiac admitted 1,011 persons during the previous year, of whom 111 were offspring of dissipated parents, 8 from epileptics, and 20 from families afflicted with insanity. The daily average of inmates was 769. The *per capita* yearly cost was \$188.67.

**Education.**—The total value of the property belonging to the public schools and the State educational institutions, not including permanent funds, is \$37,311,136.

The State Normal University, at Normal, shows an enrollment of 620 students. The model department enrolled 550 others. The Model School was discontinued for want of funds, and the State Institute also.

The enrollment for the year at the Southern Illinois Normal School at Carbondale, numbered 716, with graduation above the average. An appropriation of \$40,000 was received from the State for a library building.

The existing normal schools being insufficient to meet the need for teachers, the thirty-ninth Assembly passed a bill authorizing the building and establishment of two new ones, to be termed the Eastern and Northern. The site chosen for the Eastern school is at Charleston.

The University of Illinois, at Urbana, received liberal gifts for the year and an appropriation from the State of \$325,000. Dr. Andrew S. Draper is the newly elected president. The new Engineering Hall was occupied in October. It is a handsome building, with a central hall and two wings, and was designed by a graduate of the class of 1882 of the School of Architecture, in competition with 15 other graduates. The chief point of interest in the report of the extra work of the university for the year was the establishment at Champaign of a biological station for continuous investigation of the aquatic life of Illinois river and its dependent waters

near Havana, and an elaborate experimental work, with measures for the destruction of the chinch bug, and especially for the dissemination of the contagious diseases of that insect, undertaken by the laboratory staff. Part of the university appropriation was to establish a department of economic geology at the laboratory for study of the soils of the State, with special reference to their value for purposes of manufacture. The appropriations were framed to cover the cost of purchasing the College of Physicians and Surgeons, and its consolidation with the university. Military science is taught at the university by an officer of the United States army.

The university enrollment for the year numbers 718 students, of whom 609 were men and 109 were women.

At the Newberry Library, in Chicago, John Vance Cheney is the successor of Dr. William F. Poole, who died in March, 1894, as librarian. His report for 1895 gives these statistics: There are in the library 123,516 volumes and 30,556 pamphlets, exclusive of pamphlets in the medical department, not yet accessible. These pamphlets number probably 17,000. The cash balance was \$2,931,261.66. Of the readers during the year, 45,850 were men and 12,768 were women.

**The Lincoln Homestead and Monument.**—The furniture, relics, etc., in the Lincoln homestead, Springfield, were claimed by Mr. Oldroyd as his personal property, and he was allowed to remove them. Extensive repairs have been made, and the property is now in a fairly presentable condition. A number of authentic relics associated with Mr. Lincoln's life have been obtained by donation, and have been placed in the homestead as the property of the State. Under the new law, which went into effect July 1, the Lincoln Monument became the property of the State, and it was transferred, with impressive ceremonies, to the custody of the newly appointed board of commissioners, at Springfield, July 3.

**Factory Inspection.**—The State Inspector's report shows that in 1894 3,440 factories and workshops, employing 130,065 persons, were inspected; an increase of 1,078 factories and workshops, employing 45,121 men, 7,047 women, and 1,674 children, over the number in 1893.

**Agriculture.**—The Permanent State Fair, at Springfield, is the latest of the State institutions. There are beautiful buildings devoted to its uses, recently erected, the most important of which is the Dome Building, for agricultural expositions. The dome is from the Horticultural Hall of the World's Fair at Chicago, and cost \$68,000. The entire cost was \$100,000. The fair was opened Sept. 1, and was very successful, showing marked improvement of agricultural matters in the State since the first State fair, which was held in 1853, when a few cattle were corralled within a rail fence, and the highest premium for agricultural exhibits was a silver mug costing \$10. The present fair grounds contain 156 acres. Sangamon County gave the additional donation of \$139,800 to the Board of Agriculture toward the expenses of the project. The Board of Agriculture's receipts for the year were \$182,500, and the disbursements \$176,700.

The Farmers' Institute was held at Springfield in January, and the Illinois Breeders' Association during the same month.



The average yield of buckwheat was 20·1 bushels, against 16·1 the year before; the average yield of potatoes, 100·7 bushels; tobacco, 743 pounds; and hay, 1·06 tons.

**State Banks.**—Tabulated statements to March 20 showed the business at the beginning of the year as follows: Deposits had decreased \$2,800,000 since Dec. 14, 1894. Loans had decreased \$3,000,000. Cash and sight exchange amounted to \$23,371,309, and deposits to \$73,006,629, or a cash reserve of a fraction less than 32 per cent. The call dated June 11 showed an increase of \$6,000,000 in loans and of \$8,000,000 in deposits, the average cash reserve being 32 per cent., and in Chicago 34 per cent. On Dec. 11, 1895, the items were as follow: Loans and discounts aggregated \$39,447,449.83; cash on hand, \$12,725,580.68; savings deposits subject to notice, \$294,512,734.37; individual deposits subject to check, \$51,369,749.89; demand and time certificates of deposit, \$13,844,149.35; total resources, \$132,358,981.23.

**Railroads.**—The summary of the railway business for the year shows these items: Total capital stock, \$2,112,570,715, or \$50,891 per mile of road operated; gross earnings, \$282,762,993; operating expenses, \$191,140,759; total income from operations, \$91,633,234; income from property owned, but not operated, \$12,056,936; making total gross income of \$103,689,170 above operating expenses. Forty-two roads showed a net income of \$28,169,958; 36 showed a net deficit of \$6,687,875. The number of passengers carried was 83,281,655; tons of freight, 56,736,687; employees, 61,200; total annual pay, \$46,848,608.81; passengers killed, 65; injured, 258; employees killed, 134; injured, 1,057.

**Insurance.**—The number of companies transacting business in Illinois Dec. 31, 1894, was: Illinois joint-stock fire and marine companies, 7; Illinois mutual fire companies, 9; joint-stock fire and marine insurance companies of other States, 103; mutual fire insurance companies of other States, 15; foreign fire and marine insurance companies, 35; total, 169. Illinois district mutual fire companies, 12; Illinois County mutual fire companies, 40; Illinois township mutual fire companies, 142; Illinois district mutual windstorm companies, 2; Illinois County mutual windstorm companies, 4; total, 200. This report contains the statements of 8 more companies than the previous report. The amount of losses incurred in the State was \$7,543,306, a decrease of \$308,049. The decrease in premium receipts in the State was \$28,074.

**Mining.**—The Governor appointed in October 7 new mining inspectors under the new law for stricter inspection and safeguards at the 850 shipping mines throughout the State. The statistics of the coal mines of the State for the year ending July 1, 1894, include these items: The total output was 17,113,576 tons, against 19,949,564 tons the year before; number of mines and openings of all kinds, 836; number of employees, 38,477; number underground, 32,046; aggregate home value of total product, \$15,282,111; average price per ton for hand mining, 67 cents. There are 296 mining machines in use. There were 72 fatalities, and 521 men were injured. The number of new mines opened and old ones reopened was 156. St.

Clair County stands first in production, with 1,623,684 tons; Macoupin, 1,575,045; Sangamon, 1,142,299. The number of boys employed in mines is decreasing.

**Fisheries.**—The plants of 1894 suffered badly from the drought. From Havana to a point 70 miles below less than 6 lakes held water enough to keep fish alive. Chisel lake, with a watershed of 5,000 acres, had crevices 12 inches deep in the dry bed.

With the steamer "Lotus," belonging to the commission, fish were saved from drying streams and carried long distances to renew the supply, thus saving millions of pounds. The fish used for distribution, selected from those saved from drying pools along the Illinois and Mississippi rivers, consisted chiefly of black bass, crappie, wall-eyed pike, warmouth bass, white bass, and spotted catfish.

From one point on the Illinois 250,000 pounds of carp were sent to Chicago and New York.

**Swamp Lands.**—There were on the books of the General Land Office two years ago swamp-land selections in Illinois aggregating 1,920,583 acres, and since then 952,893 acres have been rejected. So far as the claim of Illinois for cash indemnity is concerned, the work demanded by the General Government has been complete in case of nearly all the counties from two to three years. Only the counties of Henderson, La Salle, and Livingston remain to be examined. There can be no cash indemnity until these are settled. With tiled drainage the swamp lands have become the most productive; the health of their vicinage is improved, public roads are kept in good repair, and their value has increased from \$1 to \$30 an acre.

**INDEPENDENT ROMAN CATHOLIC CHURCH**, a religious organization formed in Cleveland, Ohio, Sept. 14, 1895, as the result of a convention of Polish Catholic churches. The convention consisted of about 90 delegates from 22 independent churches, their chief contention being independence of the Roman authorities in matters affecting the owning of church property. The four points that caused the most discussion were: Church property to be owned by the people; financial affairs of the churches to be in the hands of a committee selected by the people; the people to have a voice in the choosing and the dismissing of pastors; a better education to be provided for children. After a full discussion of these points, a resolution was passed requiring all parish schools connected with independent churches to use the same text-books as the public schools in the city where they are located, and all teachers in the parish schools to understand the English language. The priests were also expressly prohibited from preventing any who desired from sending their children to the public schools. The name of Independent Catholic Church was changed to that of Independent Roman Catholic, and every member was required to obligate himself to perform all the duties of a Roman Catholic in the Church. The members of the Central Committee signed a protest to the Pope "against the arbitrary manner in which the bishops of the Roman Catholic Church in the United States have treated and are now treating the Polish Catholics of this country. The said bishops are treating the Polish people

in a tyrannical and arbitrary manner, looking upon them as mere cattle, refusing them their just rights, and in every manner trampling upon them. The people so used by the bishops are educated persons and not wild beasts; and we desire to enter our solemn protest before the American people against the unjust, illegal, tyrannical, and arbitrary manner in which they are treated by the said bishops." The greatest strength of the movement is in Chicago, Cleveland, and Buffalo. It should not be confounded with the Polish National Alliance, which see.

**INDIA**, an empire in southern Asia subject to Great Britain, governed under general acts of the British Parliament by a Governor General under instructions from an English Secretary of State for India, who is a member of the Cabinet, responsible to Parliament. The Viceroy and Governor General is the Earl of Elgin and Kincardine, appointed in October, 1893. The ordinary members of the Council of the Governor General in the beginning of 1895 were Sir A. E. Miller, Sir Charles B. Pritchard, Lieut.-Gen. Brackenbury, James Westland, and Sir A. P. MacDonnell. The commander in chief of the Bengal troops, Gen. Sir G. S. White, is an extraordinary member, as also is the governor or lieutenant governor of the province where the Council sits. The governors of Madras and Bombay, Lord Wenlock and Lord Harris in 1895, have each a separate executive and legislative Council and civil service. The Viceroy's Council, assisted by a dozen adjunct members, half of whom are natives of India, acts as a legislative council for the framing of laws and regulations, to be passed upon later by the Governor General or submitted with his approval to the British Parliament. Henry Fowler was succeeded as Secretary of State for India at the end of June, 1895, by Lord George Hamilton. (For area and population, see "Annual Cyclopædia" for 1894.)

**Defense.**—The European army provided for in the estimates for the year ending March 31, 1895, consists of 3,477 officers and 70,563 men, comprising 85 general officers in the infantry and cavalry, 29 general officers unemployed, 80 officers in the staff corps, 27 officers and men in the invalid establishment, 1,508 officers and 52,232 men in the infantry, 261 officers and 5,418 men in the cavalry, 280 officers and 74 men of the royal engineers, and 497 officers and 12,822 men of the royal artillery. The native army numbers 145,738 officers and men, making the total active army, European and native, 219,778 of all arms. The native army is composed of 33 European and 26 native officers and 4,472 men in the artillery, 362 European and 627 native officers and 22,439 men in the cavalry, 1,127 European and 2,045 native officers and 110,642 men in the infantry, and a corps of sappers and miners consisting of 58 European and 63 native officers and 3,845 noncommissioned officers and privates. Of the European soldiers 46,372 are stationed in Bengal, 13,465 in Bombay, and 14,176 in Madras. There is a volunteer corps, composed of European employees and other residents, the effective strength of which is 24,950 men. The contingents furnished by native princes and inspected by European officers form an *élite* force of 19,294 men.

The naval force for coast defense consists of 2 turret ironclads, of about 3,000 tons, each armed with 4 8-inch guns, a dispatch vessel, 2 first-class torpedo gunboats, and 7 torpedo boats.

**Finances.**—In 1894 the net revenue was Rx 50,328,000 and the net expenditure Rx 51,874,000. The estimates for 1895 were framed to meet a further decline in the value of the rupee, which for the preceding year was taken as 14<sup>6</sup>/<sub>d</sub>. Having exhausted the resources of taxation, the Government abandoned military works, suspended the famine insurance fund, and drew on the provincial revenues. The net revenue was estimated at Rx 50,943,500, and the net expenditure at Rx 51,245,400. But the exchange fell in the earlier months of the year from 14<sup>d</sup>. to 12<sup>5</sup>/<sub>d</sub>. The Indian Government then proposed and the Secretary for India, Henry Fowler, assented to putting on a duty of 5 per cent. on cotton goods, promising the Lancashire manufacturers that if it should prove protective in its operation it would be readjusted. The railroad receipts showed an improvement, there was a reduction in the army expenses, and the opium revenue was largely increased by levying a higher tax on Malwa opium. The tax on petroleum was increased, and a duty was levied on silver imports. The budget estimates for 1895 made the total revenue Rx 92,024,900 and the total expenditure Rx 92,326,800. The items of revenue were: Land, Rx 25,703,600; opium, Rx 6,393,600; salt, Rx 8,629,200; stamps, Rx 4,561,800; excise, Rx 5,317,600; provincial rates, Rx 3,525,300; customs, Rx 2,872,900; assessed taxes, Rx 1,740,900; forests, Rx 1,646,000; registration, Rx 440,000; tribute, Rx 775,200; interest, Rx 856,800; post office, telegraphs, and mint, Rx 2,656,500; civil departments, Rx 1,611,700; railways, Rx 20,408,400; irrigation, Rx 2,463,800; buildings and roads, Rx 629,200; military departments, Rx 809,700; miscellaneous, Rx 982,700. Expenditure under the various heads was estimated as follows: Interest, Rx 4,611,400; refunds, etc., Rx 1,808,200; charges of collection, Rx 8,854,400; post office, telegraphs, and mint, Rx 2,595,800; civil salaries, Rx 14,959,200; miscellaneous civil charges, Rx 5,754,000; famine relief insurance, Rx 55,000; railway construction, Rx 24,400; railway revenue account, Rx 22,538,300; irrigation, Rx 2,909,400; buildings and roads, Rx 5,489,100; army, Rx 23,759,700; defense works, Rx 152,300; total, Rx 93,511,200, from which is deducted Rx 1,184,400 of expenditure from provincial balances. The capital expenditure on railroads and irrigation works not charged against the revenue was estimated at Rx 5,000,000. The additional taxes and extraordinary resources that were resorted to converted the budget into an estimated surplus of Rx 1,230,000 in spite of the embarrassing loss by exchange, which amounted to 27 per cent. of the net revenue.

In the budget for 1896 the expenses of the Chitral expedition (see AFGHANISTAN) had to be provided for, and extraordinary resources could no longer be drawn upon. The Chitral expedition cost Rx 2,360,000 and the expense of the occupation of Chitral is Rx 200,000 a year. Military expenditure was further increased by rais-



ing the pay of the sepoys from 7 to 9 rupees a month, and there was a further loss by exchange of Rx 2,503,700. The total increased expenditure was Rx 6,850,000. This was not balanced within Rx 1,212,000 by the saving of Rx 422,000 in interest by the conversion of the debt, an increase of Rx 427,900 in the general customs duties, Rx 1,455,000 expected from the cotton duties, and an estimated improvement in the general revenue.

The rupee debt of India amounts to Rx 122,000,000. The assets in the form of railroads, loans to municipalities, irrigation works, etc., are valued at Rx 149,542,000. In 1894 the permanent debt was converted and the rate of interest reduced from 4 to  $3\frac{1}{2}$  per cent. The sterling liabilities in England amount to £116,006,000, against which the Government has purchased railroads, cash balances, and loans to railroad companies amounting to £67,091,000. The sterling debt has been increased by about £9,000,000, which the Government has allowed to stand against its credit in London in preference to selling bills at lower rates.

**Commerce.**—The imports of merchandise for the year ending March 31, 1894, were valued at Rx 73,956,957. The imports of silver were Rx 15,278,726, and of gold Rx 3,146,530, making the total imports Rx 92,382,213. The exports of Indian merchandise were Rx 102,015,615; of foreign merchandise, Rx 4,431,975; of silver, Rx 1,519,453; of gold, Rx 2,506,284. Total exports, Rx 110,472,327. The commercial movement was strongly affected by the closure of the mints to silver on July 26, 1893. The exchange value of the rupee rose at once from 14½d. to 16d., and the Government made this the official rate, but could not hold it, and was afterward compelled to sell bills at a lower rate. Importers took advantage of the artificial rate of exchange to put goods on the Indian market, and continued their importations after the rupee began to fall, being apprehensive that the fall would continue until the rupee reached its bullion value. The result was that importations exceeded those of the preceding year by 18 per cent. The closure of the mints had the unexpected result of stimulating the importation of silver. Quantities of the metal were rushed in at first in the hope of their arriving before the mints closed, and afterward the bankers imported silver bars and exchanged them for rupees in preference to buying Council bills at a fixed rate, for the natives were eager to take advantage of the cheapness of silver, thinking it to be only temporary, and bought bullion freely in order to have it made into ornaments. Moreover the rulers of native states imported silver to coin into rupees. The outflow of gold that began in 1893 continued, though in lessening volume. In the imports of merchandise the largest increase, amounting to more than half of the whole, was in cotton goods and yarns. The imports of metals also greatly increased. More than half the total imports consisted of cottons and metals. The trade in cotton goods was stimulated by the expected import duty, and exports of cottons were retarded by the same cause. The total exports showed no appreciable increase over those of the year preceding. In cotton yarn and goods there was a decline of Rx

1,858,100, being nearly 23 per cent.; in opium the decline was Rx 1,235,585, being 13½ per cent.; in grain and pulse there was a decline of Rx 4,237,830, or 20½ per cent. One result of the closure of the Indian mints to silver was to check the large export of cotton yarns to Japan, and enable the Japanese manufacturers to take away the foreign market of the Bombay mill owners in the same way as these had cut into the trade of the Manchester capitalists until the latter almost ceased to produce heavy webs for the Oriental market.

The values of the leading imports and classes of imports were for 1893-'94 as follow:

Cotton manufactures.....	Rx 32,377,469
Metals, hardware, and cutlery.....	7,580,282
Silk, raw and manufactured.....	3,188,058
Sugar, raw and refined.....	2,824,190
Woolen goods.....	1,892,042
Liquors.....	1,458,204
Railway plant and rolling stock...	1,242,977
Oils.....	3,570,188
Machinery and mill work.....	2,518,038
Coal.....	972,588
Provisions.....	1,782,868
Apparel.....	1,578,049
Salt.....	791,067
Spices.....	873,655
Glass.....	788,480
Drugs.....	771,525
Paper.....	494,208
Umbrellas.....	480,938
Grain and pulse.....	181,632

The values of the principal exports of Indian produce for the same year were as follow:

Rice.....	Rx 10,388,638
Wheat.....	5,193,885
Raw cotton.....	13,296,670
Cotton manufactures.....	6,242,558
Opium.....	8,019,428
Oil seeds and other seeds.....	16,753,251
Hides and skins.....	5,801,328
Jute.....	8,524,130
Jute manufactures.....	3,441,787
Tea.....	6,585,835
Indigo.....	4,182,128
Other dyes and tan.....	841,073
Coffee.....	2,002,171
Wool.....	1,079,772
Spices.....	455,923
Lac.....	960,330
Sugar, raw and refined.....	892,741
Silk, raw and cocoons.....	695,099
Silk manufactures.....	242,417
Oils.....	535,881
Wood.....	589,764
Wool manufactures.....	146,662
Provisions.....	878,577
Salt-peter.....	338,102

The shares of different countries in the commerce of India for 1893-'94 are shown in the following table:

COUNTRIES.	Imports.	Exports.
Great Britain.....	Rx 52,001,013	Rx 33,542,602
China.....	3,542,556	10,989,240
France.....	1,138,262	10,672,569
Italy.....	448,572	3,542,122
Straits Settlements.....	2,524,623	4,529,319
United States.....	2,016,270	3,354,759
Egypt.....	171,371	3,674,058
Belgium.....	2,053,275	5,709,688
Austria.....	1,371,383	2,943,061
Ceylon.....	696,625	3,068,906
Australia.....	242,665	1,020,311
Japan.....	252,096	1,404,378
Germany.....	1,714,003	7,634,088
Mauritius.....	1,787,030	1,189,741
Arabia.....	355,998	787,163
Netherlands.....	207,501	1,479,636
East Africa.....	325,635	499,950
Persia.....	734,205	603,647
Spain.....	11,945	499,828

The value of the trade across the land frontiers is not included in the foregoing figures. It was valued in 1893-'94 at Rx 4,037,400 for imports and Rx 3,431,700 for exports. While the trade with Candahar and Cabul has declined, and that with Nepaul and Cashmere shows some falling off, there has been an increase of imports from Tibet, and the trade with the Shan States and with Siam and western China is growing at a rapid rate.

**Navigation.**—There were entered during the year 1893-'94 at the ports of India 5,030 vessels, of 3,797,911 tons, of which 1,976, of 3,076,277 tons, were British; 925, of 134,821 tons, were British Indian; 1,506, of 82,739 tons, were native; and 623, of 504,074 tons, were foreign. The total number cleared was 4,965, of 3,867,975 tons. Of the vessels entered, 712, of 1,575,836 tons, and of those cleared, 928, of 1,987,474 tons, passed through the Suez Canal. The number of vessels entered coastwise with cargoes was 105,764, of 11,324,193 tons; the number cleared was 96,145, of 11,159,078 tons. There were 98 vessels, of 3,280 tons, built during the year in India.

**Railroads.**—The Government, owing to its financial embarrassments, has abandoned for the present the policy of subsidizing railroads and invited private enterprise, but still it will not encourage the building of lines to compete with the guaranteed roads. The existing lines have been planned with reference to British commerce rather than to the commercial needs and populousness of the districts served. Bombay, the chief source of Indian cotton and wheat for England has 1 mile of railway to 8,000 inhabitants, and the wheat-growing Punjab, with small commercial interests, has 1 mile to 11,000 of population, while Bengal, with enormous tea production, with steam textile manufactories, with vast undeveloped coal-fields and prospective metal industries, has only 1 mile to 29,000 of its population. The Indian network had a total length of 18,856 miles on March 31, 1895. During the previous year 356 miles were built. There were 2,217 miles under construction or sanctioned. There were in 1894 8,606 miles belonging to the Government but operated by companies, 5,199 miles operated by the Government, 2,587 miles operated by guaranteed companies, 403 miles belonging to assisted companies, 809 miles owned by native states and operated by companies, 838 miles owned and operated by native states, and 58 miles of foreign lines. The gross earnings of all the railroads in 1893 were Rx 24,048,229 and the operating expenses Rx 11,347,728, being 47.12 per cent. of the receipts. The net earnings were Rx 12,325,777, giving an average return of 5.46 per cent. on the capital. During 1893 there were transported 135,520,447 passengers and 28,851,531 long tons of freight. In 1894 gross earnings were Rx 25,508,856; working expenses, Rx 11,983,920, or 46.98 per cent. of the receipts; and net earnings, Rx 13,524,936. The net profit on the capital invested was 5.69 per cent., but the Government sustained a net loss of Rx 1,970,000. The Government pays an average rate of 4½ per cent. on the capital raised by the guaranteed companies, which is increased to over 7 per cent. by the fall of exchange. In the Ganges delta a beginning has been made of railroad construction by pri-

vate native enterprise with rupee capital and native Indian managers and engineers and an entire native staff. The first line thus built has a length of 31 miles. To facilitate the undertaking of feeders to the trunk lines by attracting English capital, the Government carried a bill in 1895 empowering companies to pay dividends out of capital during the construction of railroads.

The Hurnai Railroad, opened in 1885, which cost the Indian Government millions of pounds, has been abandoned because landslides make the route unsafe, and in its place a new double line has been built through the Bolan pass to connect Sibi and Quetta. Another strategic line is being built to connect the fortress of Quetta, which is already in direct communication with Karachi on the one side and Lahore on the other, with Peshawur also.

**Posts and Telegraphs.**—The number of letters and other mail matter carried in 1893 was 360,209,076. The revenue was Rx 1,488,863 and expenditure Rx 1,518,555.

The Government telegraph lines on March 31, 1893, had an aggregate length of 41,030 miles, with 120,251 miles of wire. The number of paid messages was 3,981,411 during the year; receipts were Rx 937,743, and expenses Rx 875,073. A junction between the Chinese and the Indian systems was effected on the frontier of Upper Burmah on March 16, 1895.

**Opium Commission.**—A royal commission, appointed by the British Parliament on Sept. 2, 1893, to inquire into the Indian opium traffic, made its report in the spring of 1895. The English Society for the Suppression of the Opium Trade, of which Sir Joseph W. Pease was president, had called for an inquiry into the best method of adjusting the finances of India to the abolition of the opium traffic, and Mr. Gladstone, then Prime Minister, accepted instead the proposition to investigate the conditions of the trade. The first president of the society, the Earl of Shaftesbury, when he was Lord Ashley, offered a resolution in the House of Commons condemning the opium trade as producing ill feeling between England and China, but withdrew it. Sir Wilfrid Lawson's resolution was lost in 1870 by 150 votes to 46. After the society was started in 1874 frequent motions were made in Parliament calling for the gradual extinction of the traffic or for prohibition of the sale except for medical purposes. The antiopium league condemned primarily the action of the English Government in coercing China by war and menaces to admit Indian opium and the position of the Indian Government in drawing a revenue from the vice thus fastened upon the Chinese by treaty. Latterly the society gave its attention also to the evils arising from the spread of the opium habit in India. In that country opium is eaten in the crude form, or sometimes drunk in an infusion, whereas in China a strong preparation is smoked in a pipe. In 1891 a vote was carried in a thin house which condemned the opium traffic, except for medical purposes, as morally indefensible. As a sequel to this vote Mr. Gladstone's Government proposed the opium commission in June, 1893. The commission was ordered to report whether the growth of the poppy and sale of opium should be prohibited, except for medical



purposes, in British India, whether such prohibition should be extended to the native states, and on what terms existing transit arrangements with those states could be terminated; also as to what effect prohibition of the sale and export of opium would have on the finances of India, taking into consideration the amount of compensation to be paid, the cost of necessary preventive measures, and the loss of revenue; whether any change short of total prohibition should be made in the system at present followed for regulating and restricting the opium traffic and for raising a revenue therefrom; what the consumption of opium is in the different districts and by the different races of India, and what its effect upon the moral and physical condition of the people; and what was the disposition of the people of India toward the prohibition of the use of opium for non-medical purposes, and whether they would be willing to bear the whole or a part of the cost of prohibitive measures. The commission was composed of Lord Brassey, Sir James B. Lyall, Sir Lakshmiswar Singh, of Darbhanga, Sir William Roberts, R. G. C. Mowbray, H. U. Fanshawe, Arthur Pease, Haridas Viharidas, and H. J. Wilson.

The Indian Government controls and limits the cultivation of the poppy, and has a monopoly of the manufacture and sale of opium. No ryot can grow the poppy without a license. The Government subagent, after measuring the ground that he is permitted to sow, gives him an advance of 20 per cent. on the value of the prospective crop and pays the rest of the price when the crop is delivered. The extract for home consumption and for export is made in Government factories. The main part is intended for export. The chests are sent to Calcutta, and there sold to merchants by public auction. The area devoted to the poppy is about 100,000 square miles, lying in the district of Behar in Bengal and in the Northwest Provinces and Oudh. Outside of British India the poppy is cultivated in certain native states of Central India and Rajputana and in the territory of Gurwah. Their product is known as Malwa opium. The total annual value of the Indian opium crop is estimated at £13,000,000, divided between the Government and the growers and landlords. The share of the Government is nearly two thirds of the selling price, while on Malwa opium the Government imposes a tax in the form of transit dues that is more than two thirds of the value. Of the total opium revenue, which has greatly fallen off in late years, over 90 per cent. is paid by the Chinese on the opium exported to China, Hong-Kong, and the Straits Settlements.

The royal commission examined 723 witnesses, of whom 466 were natives of India or China and 257 Europeans. Of the medical witnesses nearly all the missionaries, half the private practitioners, and a fraction of the officials were in favor of the suppression of the traffic. The commission drew up a report which was signed by 8 out of the 9 members. Mr. H. J. Wilson in a brief minority report contested all the conclusions of his colleagues. The majority report sustained the Indian Government in all its contentions. According to the weight of evidence submitted, prohibition was not necessary nor

demanded by the Indian people. If the paramount power extended prohibition to the protected states it would act without precedent or justification and provoke the resentment of the native chiefs and their people. It would inflict a loss of public revenue on the Indian Government that it was unable to bear. In regard to the export of the drug to China, there was no occasion to revise the existing treaties in the interest of the Chinese when the Chinese Government had formally admitted that the treaties contained all that it desired. The testimony of medical experts convinced the commission that the use of the drug, unless taken in excess, is by no means harmful. The physical and moral effects of excessive indulgence are evil, but not productive of lesions or insanity, as is alcohol. Besides being used as a stimulant opium is the common household medicine in all parts of India, taken in cases of specific disorders, such as rheumatism, diabetes, chills, and diarrhoea. It is regularly administered to unweaned children. The people have faith in its efficacy and medical men approve its use in these disorders. The people believe in it as a prophylactic and a remedy for malarial fevers. The common use of opium in India is a moderate use, leading to no evil effects. Excess is exceptional and is condemned by public opinion. The mass of native opinion is opposed to prohibition as an unnecessary restriction on individual liberty and an interference with native habits and customs. The only classes of native Indians who are in favor of prohibition are certain small Mohammedan and Hindu sects that would abolish the use of stimulants of all kinds. The Indian Congress, though urged by friends in England, declined to include the opium question in its programme. Mercantile bodies, the community of planters, and the Europeans in India are strenuously opposed to prohibition. A preventive system would be enormously expensive and would prove impracticable. The prohibition of planting and manufacture could not be extended to the native states, which would get hold of the trade abandoned by the Indian Government. The existing Bengal monopoly seemed to be the best system for regulating the production of opium. The regulations for the restriction of consumption might be amended, especially by making it more difficult for smokers to obtain the drug. A distinction is drawn between the common way of taking opium in pills or decoctions and the comparatively rare and novel practice of smoking preparations of opium known as *chandu* and *madak*. This use of the drug is considered disreputable, and public opinion might not view with disfavor legislation against saloons and clubs where smoking is carried on. In Burmah, where there is a considerable Chinese population and where smoking is much resorted to in certain parts of the country, restrictions are necessary, but the commission did not recommend any modification of the regulations recently introduced. The extensive use of opium in India for non-medical or quasi-medical purposes is rarely attended with injurious consequences; in some cases it is beneficial. The non-medical uses are so interwoven with the medical uses that it would be impracticable to draw a distinction between them in the distri-

bution and sale of the drug. The habitual use of opium as a stimulant by young people is generally condemned. The testimony was unanimous that the people of India would be unwilling to bear the cost of prohibitive measures. The commission decided that existing transit arrangements could not be terminated without the voluntary agreement of the native states, which would involve large pecuniary compensation both to the state and to individuals.

H. J. Wilson in his minute of dissent pointed out that the commission had selected witnesses representing the official classes, both native and European, or who echoed their views or considered their own interests at stake, including military medical officers, titled persons, landowners, and others. While violent crimes were not attributed to opium, he believed that there was much evidence to show that habitual consumers, when poor, resort to petty stealing to obtain money for the purpose of getting opium. He contended that the imperious craving for the periodical dose, the powerful sway that the opium habit was admitted by every witness to have over the habitual consumer, was necessarily degrading to the moral nature of man. Mr. Wilson recommended the cessation of the growth of the poppy and the manufacture and sale of opium in British India, and that, as soon as the Chinese opium trade shall have been brought to an end and licenses to cultivate are no longer granted, licenses for the transit of opium from native states be withheld. The plan of compensating cultivators and landlords he declared to be without precedent. He condemned the present system of sale through private contractors and vendors, advising rather that official vendors be appointed, with instructions to restrict the sale. He further recommended the total prohibition of smoking.

After the report was published Sir Joseph Pease assailed the commission and offered another resolution in the House of Commons declaring the opium traffic morally indefensible, which was lost by 176 votes to 59.

Another commission, appointed by the Indian Government, came to the conclusion, after examining 700 witnesses, that the smoking of ganja and the drinking of bhang are as innocuous as the royal commission found opium eating to be. The hemp drugs, although their excessive use is sometimes productive of poverty or violent crime, have an inappreciable effect on the general statistics of crime, pauperism, insanity, disease, and longevity, since only 1 in 200 of the inhabitants consumes ganja at all, and not more than 1 in 4,000 consumes the hemp stimulants to such an extent as to render himself objectionable to his neighbors or distinguishable from the total abstainers. Ganja, the form in which the narcotic is taken by the common people, is declared to afford 1,000,000 people a harmless pleasure, and in some cases a beneficial stimulation. The pleasant summer beverage made from bhang and drunk by the well-to-do is said to be harmless.

Official as well as native opinion dreads the growing use of alcohol in the social entertainments of the wealthy and, with especially injurious results, among the new operative class in mines and factories, who begin to find the more

active stimulant necessary to enable them to withstand the severe and continuous strain of their work. The opinion is general that alcohol is not only demoralizing but fatal to the native races, and that the prohibition of opium and the hemp drugs would only substitute that fierce and deadly stimulant for the mild narcotics to which the people have been accustomed from time immemorial. The Government intends to place upon the hemp drugs the utmost restrictions compatible with fairness by increasing the tax where it is not already as high as the article can stand without encouraging illicit production. The public storehouses established in Bengal will be extended to Madras and Bombay, and the growth and distribution of the products will be gradually taken in hand by the Government.

**Legislation.**—An act providing that the people of a district in which riots occur shall bear the cost of extra police drafted into it and pay compensation for damage done aroused much excitement in native circles. The Government considered that the frequent religious riots justified such a measure, but accepted an amendment authorizing the local government to grant exemption from liability to individuals or classes. An amendment to the Cantonments bill removed, in pursuance of a resolution of the House of Commons, the restrictions which have hitherto kept down virulent diseases that weaken the health and efficiency of the European army in India. A bill for the sanitation and inspection of pilgrim ships, embodying the rules approved by the Paris convention of the Sanitary Conference, was generally welcomed by the Mohammedan community. The whole of India resounded with the outcry that was made when the Legislative Council at the dictation of the English Government, which had promised as much to the Lancashire cotton manufacturers, voted to impose an excise duty on cotton yarns finer than 20 hanks to the pound, to counterbalance the import duty on cotton manufactures. The main Indian product was 20's or under, while England produces nothing as coarse. The excise duty caused the Indian manufacturers to cease spinning the higher grades altogether, but their expulsion from the field did not benefit their English competitors so much as it did the Japanese and Chinese spinners, who had already begun to produce the finer yarns from cotton imported from America.

**Religious Tumults.**—While priests from Ceylon were engaged in installing on Feb. 25, 1895, an ancient and artistic statuette of Buddha, the gift of the Buddhist high priest of Japan, in the great temple of Budh-Gaya, Bengal, which is the most sacred shrine of Buddha in the world, a mob of Hindu worshipers rushed in and seized the image and threw it on the ground outside, while the dedicators remained devoutly in their attitude of religious contemplation. The Hindus were offended because the image had not been consecrated according to their rites, for they also worship Buddha as an incarnation of Vishnu in the same temple. The Government custodian of the temple intervened, and the rioters were fined for disturbance of religious worship.



At Dhulia, Bombay, Mohammedans on Aug. 24 attacked and routed a Hindu bullock procession and a week later obstructed the Hindu *ganpati* procession and beat the British collector, who rode at its head to preserve order, whereupon the armed police fired into the mob, killing 10 persons and wounding 40.

**INDIANA**, a Western State, admitted to the Union Dec. 11, 1816; area, 36,350 square miles. The population, according to each decennial census since admission was 147,178 in 1820; 343,031 in 1830; 685,866 in 1840; 988,416 in 1850; 1,350,428 in 1860; 1,680,637 in 1870; 1,978,301 in 1880; 2,192,404 in 1890. Capital, Indianapolis.

**Government.**—The following were the State officers for the year: Governor, Claude Matthews; Lieutenant Governor, Mortimer Nye; Secretary of State, W. D. Owen; Auditor, Americus C. Daily; Treasurer, F. T. Scholz; Superintendent of Public Instruction, David M. Greeting; State Statistician, S. J. Thompson; State Geologist, W. S. Blatchley; Adjutant General, Irvin Robbins; Attorney-General, W. A. Ketcham; all Republicans except the Governor, Lieutenant Governor, and Adjutant General. Chief Justice of the Court of Appeals, George E. Ross; Associate Justices, Theodore P. Davis, Orlando J. Lotz, George L. Reinhard, Frank E. Gavin; Chief Justice of the Supreme Court, J. H. Jordan; Associate Justices, Leonard J. Hackney, Timothy E. Howard; Joseph S. Dailey, James McCabe, L. J. Monks.

**Finances.**—The total receipts for the year were \$8,525,219.33; the expenditures, \$8,342,004.20, which, with the balance on hand a year ago, leaves a balance on hand of \$573,726.42. The State paid for maintenance of its benevolent institutions \$959,525.39, for reformatories \$110,000, and for penal institutions, \$190,484.12. In direct payments to the colleges that come under the title of State institutions the State contributed \$223,922. During the year \$1,331,380.98 was paid on the State debt. The State now has a debt of \$7,030,000, exclusive of the bonds held by the State educational institutions, which were issued merely as a means of securing to these institutions a certain amount of money annually. The annual interest on this for foreign debt is \$219,525. The domestic or school debt amounts to \$484,000; interest, \$24,200.

A recent decision of the Supreme Court in relation to the loaning of public funds is to the effect that a county treasurer loaning public funds for his own use and benefit, and taking a note therefor, is not permitted to appeal to the law for collection of the money. The ruling applies also to township trustees. It has long been held that this was the law in reference to the Treasurer of State.

**Valuations.**—The valuation of land in the State in 1894 was \$454,131.203; of improvements on these lands, \$86,544,952; of lots in the State, \$149,263,802; of improvements on lots, \$153,441,643; value of personal property, \$291,085,845; of telephone property, \$3,513,035; of railroad property, \$157,125,035. The aggregate of all property subject to taxation is \$1,295,106,515.

**State Institutions.**—The report of the Northern Hospital for the Insane shows that the appropriation of \$95,000 for the year was

just sufficient to meet the expenses. The earnings from sales of material and old clothing were \$138.63, paid into the State treasury.

The Eastern Hospital received an equal appropriation, \$95,000, and reported a balance of \$26.04. The new construction fund of \$25,000 was all used. At the beginning of the fiscal year there were 450 patients in the institution. During the year 76 were admitted, 46 were discharged, and 24 died, leaving 456 in the hospital at the close of the year. The cost *per capita* for the year was \$175.27.

The Southern Hospital showed a balance of \$15.20 out of the appropriation of \$85,000. This institution earned \$69.59.

The Institution for the Blind received an appropriation of \$30,739.98, and reported a balance of \$1.63. A little more than half the entire cost, \$15,855.71, was used in paying salaries.

The report of the Reform School for Boys, which was printed in the institution, shows that during the year 163 boys were admitted and 222 released. The average number present during the year was 558. Each county must pay half the expense of maintaining its representatives. The annual cost of supporting each inmate is \$120. In the last six months a large building has been erected by the boys. Although the school farm has been enlarged by the purchase of 195 acres the Reform School is no longer known as a "farm school." The management has found that boys from the cities will not take to farming, and they are taught trades.

The two penitentiaries have about 1,500 convicts within their walls. Both prisons are short of funds, the Northern to the extent of \$12,000 and the Southern to the extent of \$17,500. At the middle of the year but 350 of the 800 men at the Southern prison were under contract, and but 2 contractors were employing labor there, while the appropriation for the year was nearly exhausted; but by the close of the year 725 prisoners were under contract.

The population of the charitable and penal institutions of Indiana has increased 920 in five years, which is 15.9 per cent., while the total increase of the cost of maintenance is 4.3 per cent. Each year the cost of maintenance has declined from \$190.68 in 1891 to \$171.64 in 1895.

Plans for the State Soldiers' Home at Lafayette were accepted in April, and the Woman's Relief Corps of the Logan Post laid the corner stone of the first cottage in October.

**Vital Statistics.**—Figures given out by the State Statistician show, from reports received from the clerks of all the counties except Cass, that the number of divorces granted in the State during the year ending June 30, 1895, was 2,730. For the same period in 1894 the number was 2,279. A comparison of these figures shows an increase of nearly 400 cases in the State. Of the number of divorces procured in the last year, 1,867 were granted to wives and 863 to husbands. The records of marriage licenses do not show a material increase. During the year ending June 30, 1895, there were 22,507 marriages. The number of people confined in the county jails of the State during the year was 31,161. Of this number 1,475 were women. The report shows that 1,755 foreigners were naturalized during the year.

**Loan Associations.**—According to a summary of the annual reports of the building and loan associations of the State, they have loaned on mortgage security \$11,552,616.89; on stock and pass-book security, \$741,436.84; and on other security, \$297,836.76. They hold real estate to the value of \$275,320.81. The amount of installment stock and credited dividends due to members is \$9,513,487.97, and on paid-up stock and credited dividends \$3,245,125.09. The undivided profits amount to \$537,627.61. The associations have issued 321,831 shares of installment stock and 45,907 shares of paid-up stock. There are 50,205 shareholders that have not borrowed from the associations, and 19,176 that have. The authorized capital is \$94,620,000, of which \$38,821,220 has been subscribed.

**Railroads.**—During the past six years more than half the track mileage of main lines has been laid with heavy steel rails, and 75 per cent. of the wooden bridges have been replaced with iron structures resting on stone abutments, and the lighter rails taken up have been used for side tracks, thus greatly increasing the business facilities. Grades have been reduced and curves straightened on many of the roads.

**Education.**—The amount of State money for schools was reported as \$1,436,852.04, all of which, except a balance of \$15,222.90, was distributed, \$15,000 going to the State Normal School. The number of children of school age was 808,261.

Since the founding of the Northern Indiana Normal School twenty-three years ago more than 100,000 names have been entered on its rolls. The average attendance for the year ending in August was over 2,500, while more than 6,000 students have been in attendance during the year, and 300 more were graduated than in any previous year, the total number being 1,307.

The State Normal School at Terre Haute sent out this year a class of 101, the largest in the history of the school. The total attendance at the spring term was 1,224.

A course in journalism has been added to the curriculum of the State University. It includes studies in English, general history, political theory, constitutional history, and economics. There were 87 graduates in the various departments in June. Wabash College, at Crawfordsville, graduated 28, and Franklin College 16.

The North Manchester College, which has been conducted by the United Brethren Church, has been bought by the citizens, to be given, together with \$5,000, to the Dunkard Church, which will establish an institution there.

The Medical College at Indianapolis graduated 50 at its twenty-fifth commencement.

Butler University sent out 19 graduates in June, and Purdue, which has entered its twenty-second year, graduated 76.

Earlham College, at Richmond, which is conducted by the Society of Friends, has been embarrassed for want of funds, but received at the time of the Yearly Meeting an additional endowment of about \$30,000. The whole number of students enrolled during the year was 236; professors, 12; teachers in other departments, 4.

A large disparity on the wrong side between the income and expenses of De Pauw University has led to a change in its management. The

president retired, and his place has been temporarily filled. The number of graduates was 65.

The college presidents of the State, in convention at Indianapolis, in March, declined to amend resolutions passed in the previous December virtually abolishing football. They were petitioned to reconsider, but were of opinion that the game should be prohibited until the rules shall have been materially changed and professionalism entirely taken out. This year they went a step further and passed a resolution making the rule forbidding the playing of football with professional teams applicable to all college athletics.

**Military Matters.**—The positions of Indiana regiments on the field of Chickamauga were all determined early in the year. It was decided that the monuments should be built of Indiana stone, and they were dedicated Sept. 18. While the State did not have so many regiments in the battle as some States, Indiana lost more men in killed and wounded than any other. The Legislature appropriated \$40,000 for the purpose.

More controversy has arisen in reference to the Soldiers' Monument at Indianapolis (see "Annual Cyclopædia" for 1893, p. 405). In consequence of criticisms on the quality of the art and other matters connected with the management, one of the three members of the commission resigned in February, and three regents were appointed in May under a new law—Gen. Lew Wallace, Gen. Fred. Knefler, and Major G. V. Menzies, all of whom accepted: but Gen. Wallace soon resigned in consequence of the rejection by the other regents of certain resolutions which he offered, the significant portions of which were these:

That the monument be devoted to the State of Indiana exclusively.

That the female figure at present covering the shaft of the monument be taken down, and a fitting statue in bronze of Gov. Oliver P. Morton be erected in its place. That the four pedestals now in place about the monument be reserved exclusively for soldiers of the Territory and State of Indiana actually slain in battle or by hand hostile to the republic.

The State encampment of the Grand Army of the Republic was held at Muncie in April. One of the questions discussed was the inadequacy and unfairness of the treatment of the civil war in the United States histories in use in the public schools of the State. A protest against them, signed by the Indianapolis posts, was referred to a committee, and a memorial stating the objections to the books was prepared for presentation to the State Board of Education.

**Products.**—During the fiscal year 63,651,923 cigars were manufactured in Indiana. Seventeen distilleries were operated, 14 being grain distilleries, consuming 1,500,000 bushels of grain; 969,478 gallons of spirits were rectified, 8,700 cattle and 7,125 hogs were fed, and 10,538,892 taxable gallons of distilled spirits were gauged. The production of fermented liquors amounted to 592,224 barrels.

The corn crop, as reported in November, was 131,105,991 bushels, from an acreage of 3,706,146. The acreage in wheat has been gradually decreasing in recent years, having fallen from 3,063,348 in 1882 to 2,540,424 in 1894. The yield this year was estimated at 20,000,000 bushels.

The apple crop was unusually large, but low



water in the streams interfered seriously with the shipments, and in many places the fruit had to be left on the ground or sold at extremely low prices. A large quantity of apple brandy was made.

The tomato crop was reported about 60 per cent. short of that of 1894.

The State geologist has been investigating the beds of clay and stone. In the western part of the State, where the coal deposits crop out, is a red stone composed of sand and iron, which will be a valuable building material. It can not be sawed, but must be taken out with chisels and hammers. Oolitic stone to the extent of 25,000,000 cubic feet was quarried in the State in 1894. Investigation of the clays showed valuable varieties—one shale found in unlimited quantities suitable for drain tile, and one for fire brick, and deposits of clay such as is used in terra-cotta factories. Alleged discoveries of gold are occasionally reported, and on this point the geologist says: "There is gold in very small quantities in the sands of Brown County which floated there with the glaciers, but nobody could make wages in hunting for it." As to the gas and oil, he says: "Indiana has a larger gas territory than Ohio and Pennsylvania combined, but there is every reason to urge economical use of it. New oil wells are developed almost every day, and there seems to be no limit to the supply." A new oil field is developing at Parker City.

**Supreme Court Decisions.**—In an opinion handed down in a Carroll County liquor case it is held that a liquor dealer is responsible for actionable injuries caused by the sale of liquors made by his agents or servants. The fact that the sale was made without the knowledge of the dealer constitutes no defense.

The court affirmed the decision of the Allen County Superior Court in a suit in which the Humane Society of Fort Wayne was involved. Two members of the society caused two horses to be killed, and the owner was awarded damages in the Allen County Court.

A case of general interest was decided in December. It was held, in the case of the Indiana Natural Gas Company against Henry Jones and others, that in the assessment of damages in condemnation proceedings no allowance shall be made for future prospective damages that could accrue only through an accident.

An important decision was given in the case of the president of a bank at Martinsville against the County Board of Review. The suit was on the question of the right of the bank to refuse to allow the board to examine the books containing the names of the bank's depositors for the purpose of discovering whether persons in general had unlisted cash in the bank in the form of greenbacks. The president of the bank refused to answer the questions or permit an examination of the books. He was fined \$1, and an appeal was taken. The decision declares that "it is not easy to see how the statute could have more fully conferred upon the Board of Review the power to do what it was attempting to do in this case. The board had authority to make the examination. It had authority by any member of it to administer the oath to the witness, and it had authority to require him to be sworn and answer as to the matters required of him."

**Political.**—The enumeration of voters by counties, which is made once in six years as a basis of legislative apportionment, was finished in October. There are 627,072 voters in the State. A comparison of the number of voters reported by the township trustees and the number of men assessed shows that more than 200,000 escaped poll tax. The difference in the enumeration of 1889 and 1895 is as follows: Increase of white votes, 73,745; increase of colored votes, 2,297.

**Legislative Session.**—The Legislature adjourned March 11, after a session of sixty days. Among the bills passed was one called the State-house-custodian bill, which was to have the result of removing the present custodian and a number of subordinates and putting Republicans in their places. The Governor wrote a veto to the bill, which was sent to him about two days before the adjournment: but the veto message was held back until just before 12 o'clock on the night when the session expired, with the design (so the Republicans asserted) of having it handed in to the Legislature at the very moment of adjournment, so that the bill could not be passed over the veto. It was also asserted that the clock was kept at ten minutes before twelve in order to deceive the members as to the time remaining in which to act; that the veto was to start from the Governor's office downstairs within three minutes to twelve, and when it reached the House (so the plan was said to be arranged) the hands on the electric clock were to give one bound and leap past that minute point which marked the expiration of the Fifty-ninth Assembly's life. Democratic members of the House were to be the witnesses that the hour of twelve had struck before the measure was passed over the Governor's objections. But the Republican members had information that the veto was coming; and when the elevator arrived at the assembly-hall landing, at one minute before twelve, bringing the Governor's private secretary with the message, the custodian whose office was in danger and others (2 Republican members) pushed in. The Republicans closed the door and, seizing the lever, sent the elevator upward. A rough-and-tumble fight ensued in the elevator between the two members on one side and the secretary and the custodian on the other. After the elevator had gone up and down several times the door was opened and the fight continued in the corridors and became general. The doors of the Assembly chamber were locked and the effort to break them in on the part of the veto bearers was resisted by the Republicans. One door was finally forced, and the secretary fought his way slowly to the desk amid a surging crowd of contestants on both sides, and reached it just after the Speaker had declared the House adjourned, though, according to law, the session had expired at 12 o'clock, some minutes before.

When the Governor made proclamation of the acts of the session as laws he excepted the State-house-custodian bill, claiming that it had been vetoed. The proclamation was not presented to the Secretary of State for his signature to attest that of the Governor, as required by law in official documents. It was also claimed that the Governor exceeded his authority in affixing the

seal to his proclamation; for, though he is the custodian of the seal, a statute says that the Secretary of State shall affix it to official documents. These precautions of the Governor seem, however, to have been unnecessary, as the Secretary is reported to have said that he would attest any proclamation the Governor might make. He holds that the proclamation carries with it nothing more than a mere formal notice. According to the law, the new acts were in force at the time the copies were received by the last county, which was June 28, and no act or omission of the Governor could prevent their being effective at that time.

One of the most important measures of the session was that on temperance, called the Nicholson bill. Mr. Nicholson is president of the Indiana Good Citizens' League. The law provides for local option, but the option is to be exercised by petition instead of by ballot. The applicant for license is to be required to describe specifically the "room in which he desires to sell such liquors, and the exact location of the same, and if there is more than one room in the building in which such liquors are intended to be sold said applicant shall specifically describe and locate the room in which he desires to sell such liquors in such building." Those holding license to sell intoxicating liquors in less quantities than a quart at a time are to provide for the sale in a "room separate from any other business of any kind, and no devices for amusement or music of any character, or partitions of any kind shall be permitted in such room." The rooms are to be on the ground floor or basement and fronting the street or highway, and so "arranged, either with window or glass door, as that the whole of said room may be in view of the street or highway." The penalty for violations of these provisions is \$10 to \$100 fine, to which may be added imprisonment not exceeding ninety days; and on conviction of a second offense the license is forfeited. Drug stores are allowed to dispose of liquors in quantities less than a quart at a time only on the written prescriptions of reputable physicians. The vote on the bill in the Senate was 28 for and 20 against; in the House, 75 for, 20 against. The vote was not divided on party lines.

An act was passed designed to prevent township trustees from retaining surplus school moneys, and at the same time do away with the enormous fees to the Attorney-General for covering such moneys into the treasury.

The apportionment act of 1893 was repealed on the ground that the courts have practically declared it unconstitutional, and the State was redistricted. Of the 13 congressional districts by the new division, the largest contains 8,410 inhabitants above the average, and the smallest 7,787 below, while 7 are within 2,000 of the average.

These acts were vetoed by the Governor, but were passed over the veto, as was also one providing for the appointment of boards of control for the State prisons, to be chosen by the Governor, Secretary of State, Auditor, Treasurer, and Attorney-General.

A fee-and-salary law takes the place of that of 1891, declared unconstitutional by the courts.

The so-called Roby bill prohibits racing on

any track from Nov. 15 to April 15, for purse or prize, in the presence of 50 persons, and the calling of any race meeting on any one track oftener than three times a year. The validity of the bill was upheld by the Supreme Court.

An act affecting the militia appropriated \$45,000, and made more liberal provision for armories, etc., but the more important changes are those that relate to authority in time of riot and disturbance, and to trials of militiamen for results attending the firing upon a mob. The practical effect of the bill is to place the officer commanding the militia in authority over the civil officers, and to place under martial law any community or section where the military may be called to preserve order. In the trial of soldiers who are charged with the injury or death of the members of a mob the military is made superior to the civil courts, the provision being that soldiers so charged shall be tried by court-martial, and that the finding of the military tribunal shall be final.

By the terms of the benevolent-institutions bill, the Board of Trustees is made bipartisan.

The State tax levy was placed at 28 cents on \$100, a reduction of 1½ cent from the previous years; for the general fund, 9 cents; benevolent institutions, 5 cents; school tuition, 11 cents; sinking fund, 3 cents. Aside from this is the direct tax for the support of the State educational institutions, amounting to one sixth of a mill on the dollar. The State University gets one fifteenth of a mill, and the other two one twentieth each.

The number of employees at the State House was materially reduced.

An appropriation of \$75,000 was made to establish a State Soldiers' Home at Lafayette.

The law on the publication of libels in newspapers was materially changed. If it appears upon trial that the article was published in good faith, that its falsity was due to mistake, and that a full and fair retraction was published in a conspicuous place and type the plaintiff shall receive only actual damages.

A fraudulent-marriage act makes it a felony for a man to desert or treat cruelly, within two years, a wife whom he has married to escape prosecution for seduction.

Several acts were passed, designed to provide for new and improved roads in townships where a majority are in favor.

Among other acts passed were the following:

Providing for a commission to consider the matter of a centennial (1900) industrial exposition.

Authorizing city councils to sell bonds and raise money for water works in which cities may be part owners.

Giving the Auditor further control over insurance companies, and abolishing the 80-per-cent. clause in insurance policies; also requiring companies to add cash to their capital up to \$100,000.

Prohibiting the landing and beaching of family shanties or flatboats on shore for a longer period than ten hours without consent of the owner.

Defining when property shall be taxed, providing for county boards of review, and extending the session of the State Board of Review—an amendment to an act of 1891.

Amending all laws authorizing city councils to divide cities into wards.



Authorizing cities of 10,000 population or more to provide for a police matron.

Specifying the terms on which the Governor, Auditor, and Treasurer of State may issue and sell bonds.

Authorizing cities and towns to sell bonds for funding or refunding, and requiring boards of trustees to levy taxes for the payment of interest on bonds and for a sinking fund.

Making the stockholders of State banks responsible for double the par value of their stock, and requiring that any impairment of capital shall be made good.

Making it unlawful to take fish in any lake in Indiana between April 1 and June 15.

Subjecting any railroad company or other corporation, or their agents, to exemplary damages if any discharged employee shall be blacklisted.

A joint resolution, looking to an increase in the number of judges of the Supreme Court, by the terms of which the number may be from 7 to 16, but must be either 7, 10, 13, or 16, proposing an amendment to the Constitution to that effect. Another proposed amendment to the Constitution, adopting voting by machine, was embodied in a resolution that passed both Houses.

**IOWA**, a Western State, admitted to the Union Dec. 28, 1846; area, 56,025 square miles. The population, according to each decennial census since admission, was 192,214 in 1850; 674,913 in 1860; 1,194,020 in 1870; 1,624,615 in 1880; and 1,911,896 in 1890. By the State census of 1895 it was 2,058,069. Capital, Des Moines.

**Government.**—The following were the State officers during the year: Governor, Frank D. Jackson; Lieutenant Governor, Warren S. Dungan; Secretary of State, W. M. McFarland; Auditor, C. Y. McCarthy; Treasurer, John Herriott; Attorney-General, Milton Remley; Superintendent of Instruction, Henry Sabin; Railroad Commissioners, John W. Luke, George W. Perkins, C. L. Davidson. Mr. Luke died Dec. 20. Chief Justice of the Supreme Court, Josiah Given; Associate Justices, J. H. Rothrock, L. G. Kinne, C. T. Granger, C. S. Robinson, H. E. Deemer. Justice Kinne is a Democrat; the other justices and the State officers are Republicans.

**Finances.**—The total assessed valuation is \$551,000,000, a decrease of about \$9,000,000 in the past biennial period. The tax levy was placed at 2½ mills.

The State Treasurer's report for the two years ending June 30 shows a total general revenue from all sources from July 1, 1893, to June 30, 1895, inclusive, of \$3,524,251.35; balance from last report, \$412,981.45; total, \$3,937,232.80. The total Auditor's warrants redeemed was \$3,624,378.39; cash balance on hand at close of business June 30, 1895, \$312,854.41.

The aggregate cost of criminal proceedings in the State in one year was \$504,040.45, not including the salaries of county attorneys, which amounted to \$82,355.26.

**Banks.**—There was an increase of 14 banks during the year 10 of which were savings and 4 State banks, and during the two years an increase of 39. There was an increase of deposits, though in the year from 1893 to 1894 there was a decrease. No bank was compelled to close its doors during the time, but in September the Auditor reported the Buena Vista State Bank at Storm Lake as being in poor condition, and asked for the appointment of a receiver.

The last Legislature enacted several laws af-

fecting banks. Directors were empowered to make good by assessment impairment of the capital stock of a State or a savings bank; the liability to the State bank on the part of an officer was limited; loans to directors must be passed upon by the board; an examining committee, to make quarterly examinations and report to the full board, was provided for; bank officers were prohibited from using the funds of the bank or its deposits except for regular business transactions; and it was made a penal offense for any bank officer, agent, or clerk to make false entries or statements in regard to the condition of the bank to any person authorized to examine it.

**Loan Associations.**—The Union Building and Savings Association went into the hands of a receiver in January. His report, rendered in February, showed that the liabilities amounted to \$199,334.29, and the assets considered good to \$69,419.36. Many of the loans had been made to the manager on security of doubtful value, and the running expenses had been increased under his management by a large amount. Three indictments were found against him for embezzlement and one for conspiracy. He was acquitted on one of the charges in June. After the affairs of the association were made public the other companies in Des Moines, with the exception of the Iowa Deposit and Loan Company, asked for an investigation of their business by a committee to be appointed by the State Executive Council. Later, new directors were added to that company, and they asked for an investigation. The committee found that the affairs of the Iowa Deposit and Loan Company as to loans were in good condition, but that the management had been extravagant, and the funds had been used for purposes not contemplated by the stockholders. After the investigation the company was reorganized with a new manager.

The other Des Moines associations were found to be in good condition.

**Insurance.**—The report for 1894, published in May, gives the following figures: The Iowa fire insurance companies show a total of risks written, \$94,687,546; premiums received, \$2,002,382; losses paid, \$894,728.93; percentage of losses paid to premiums received, 44.7. The totals of other than Iowa fire companies were: Amount of risks written, \$155,814,959; premiums received, \$2,251,976.48; losses paid, \$1,513,282.58; percentage of losses paid to premiums received, 67.2. Companies other than fire and life: Risks written, \$3,889,256; premiums received, \$84,108.95; losses paid, \$51,459.92; percentage of losses to premiums, 61.2.

The Council Bluffs Insurance Company was put into the hands of a receiver, whose report, made in August, showed the assets to be \$19,889, and the liabilities \$79,944.

In a case before the Supreme Court in which the Northwestern Legion of Honor was the defendant, the decision was to the effect that the order was an insurance company. Acting under this decision, the Auditor notified the fraternal societies doing insurance business in the State that they must comply with the insurance laws. Representatives of 26 of these societies met in Des Moines, Dec. 13, and prepared a bill for the

protection of their interests, to be presented to the next Legislature.

**Railways.**—The assessment of railway property for 1895 places it at \$44,364,542, a decrease of \$509,144 from the valuation of 1894. The sleeping-car assessment is reduced also. In 1894 it was \$186,028, and this year it is \$151,091. The sleeping cars are assessed \$4,000 each, and the tax is distributed according to the number of miles the cars run in Iowa.

The council is also required to classify the railways for the purpose of fixing their charges for passenger fares, and according to this classification two roads were changed from Class A to Class B and allowed to charge  $3\frac{1}{2}$  instead of 3 cents a mile, and two others were allowed to charge 4 cents instead of  $3\frac{1}{2}$ .

At a meeting in January the Railroad Commissioners refused to allow an increase in rates for freight, as petitioned for by the companies.

**Education.**—The annual statistics of the schools include the following: Number of ungraded schools, 12,456; rooms in graded, 4,520; number of male teachers employed, 5,281; female, 22,782; average monthly compensation, males, \$38.19; females, \$31.60; total average attendance, 331,408; average tuition per month per pupil, \$1.89; trees set out on grounds and in thrifty condition, 196,095.

The department of college professors adopted resolutions, with one dissenting vote, declaring "that we hereby agree to suspend all intercollegiate games of football in our respective institutions until the accepted rules and safeguards of the game shall have been so modified as to make it proper to be played by gentlemen."

The Danish Government made an appropriation for the Danish University, lately founded at Des Moines, endowing a chair with 2,000 crowns annually.

The income and the cost of the professional departments of the State University for the past three years are as follow: Medical department—disbursements, \$41,985.85; income, \$24,060.09. The number of students during that time was 513. Homœopathic department—disbursements, \$12,514.55; income, \$8,697.64. The number of students in this department was 203. Law department—income, \$31,196.36; disbursements, \$29,538.67; attendance, 620. Dental department—income, \$32,577.09; disbursements, \$28,316.11; attendance, 448. Pharmacy department—income, \$12,002.58; disbursements, \$8,254.54; attendance, 171.

**The Soldiers' Home.**—There has been a constant increase in the number of inmates in the home at Marshalltown, from 140 the first year (1888) to 516, the average enrollment for 1895. In all, 1,396 have been admitted.

**Monument at Spirit Lake.**—The monument ordered by the twenty-fifth General Assembly is in place at Spirit Lake. It is to the memory of the victims of the Indian massacre there in 1857, when 38 pioneer settlers were murdered and 4 women were carried into captivity. Two of these were rescued later in the year, and 2 were murdered by the Indians. Two members of the relief expedition were frozen to death on the return march. Thirty-three persons who had fled from the attack on Springfield, Minn., were rescued by this expedition. The monu-

ment is a shaft of Minnesota granite, 55 feet high, of alternate rough and polished stones, bearing on bronze tablets the names of the victims and those of the rescued and members of the relief expedition. The cost was \$4,500.

**Indian Lands.**—In reference to a lease of their lands in Tama County by the Sac and Fox Indians, running from Sept. 16, 1892, to March 1, 1898, the Attorney General has given the opinion that it is illegal. He says: "These lands were purchased by the Indians with their own funds, and are not a reservation. They were permitted to locate in Iowa by an act of the Legislature giving them special authority so to do. The title to the lands was taken in the name of the Governor of the State as trustee for the Indians." The lease was executed by a United States agent, acting for the Indians. The Attorney General is of opinion that the United States would have no authority over the lands, and he finds that the rental is grossly inadequate.

**Miners' Association.**—Representatives of the principal mining camps in the State reorganized their union, Nov. 21, under the name Iowa Mine Workers' Protective Association, withdrawing from the District Association of the Mine Workers of America, which included mining territory in Missouri.

The new organization will have a benevolent fund attachment, and will take upon itself some of the forms and plans of a lodge providing a sick benefit, a death benefit, and a benevolent fund for the families of miners in distress. It will affiliate with the Mine Workers of America and the American Federation of Labor, but will have power for independent action.

**Coal Operators.**—The coal operators of the State met at Des Moines, May 23, and formed an association, the object of which is to secure a general improvement in the coal business in the State by equalizing wages and doing away with certain unfavorable conditions.

**The Mule Law.**—The Supreme Court decided, April 2, that this law is constitutional, Justice Kinne alone dissenting. It is held that there is in the act no delegation of the legislative power, and that it does not confer on communities a so-called pardoning power for violation of the prohibitory law. Cases arising from it have been in the courts during the year. Fourteen druggists were indicted for selling liquor illegally by the grand jury of Polk County. A convention of those opposed to the law was called to meet at Davenport, Feb. 2, and the Liberal League of Iowa was formed by the 31 authorized delegates in attendance.

**Political.**—A decision adverse to the right of women to vote at school and municipal elections was rendered, April 10, in the district court at Cedar Rapids. An election had been held to choose directors and to vote upon the division of the district. The election was carried by the party opposed to division, by means of the votes of about 30 women. The court held that their votes were illegal, and ordered the district divided. The opinion declares that the Iowa statute granting women the right to vote at school and municipal elections on propositions involving the expenditure of money or levying of taxes is unconstitutional, because the



Constitution of the State provides that only male citizens may vote. More than 100 women took advantage of the new statute to vote at the school election in Des Moines, March 11.

The State Federation of Labor, in session at Ottumwa, May 21, refused to commit itself to the advocacy of free silver. A committee was appointed to visit the miners of southern Iowa and settle the trouble among them.

A nonpartisan convention in the interest of free silver met at Des Moines, June 5. Resolutions were adopted declaring that "the gold monometallists of the world are seeking to fasten the single gold standard upon this country as its permanent financial policy, with the ultimate design, boldly avowed, to retire all greenbacks and Treasury notes by converting the same into interest-bearing bonds, thus transferring the complete control of our currency to the hands of banking corporations."

A convention of Free-silver Democrats met in Des Moines, June 6, and passed resolutions declaring that "the free and unlimited coinage of both silver and gold, at the ratio of 16 to 1, without waiting for the action of other nations, is a cardinal principle of Democratic faith, and that such coinage shall be a legal tender for all debts, public and private"; and favoring "the repeal of any and all laws which permit the making of contracts which discriminate against payments in any kind of money which is by law made legal tender."

The Convention of the People's party met in Des Moines, June 11. Their nominees were: For Governor, Sylvester Crane; Lieutenant Governor, A. R. Starrett; Justice of the Supreme Court, I. W. Ivory; Superintendent of Public Instruction, Rev. L. B. Tabor; Railroad Commissioner, E. J. Stason. The resolutions denounced "the late decision of the Supreme Court on the income tax, the recent acts of Government by injunction in the interests of corporate wealth, and the issue of interest-bearing bonds"; declared in favor of the restoration of silver, the adoption of the initiative and referendum, and that until such time as a Government system of finances can be established all banking institutions—national, State, and private—be required to give security to depositors for all moneys received for deposits; demanded, further, that the Legislature provide for the "inspection of all workshops and factories where more than 10 persons are employed, that the physical and sanitary conditions may be improved and the lives, limbs, health, and convenience of the employees be better guarded"; and that the salaries of public officers be reduced in proportion to the reductions in the price of the products of labor; favored a graduated State tax upon incomes and an inheritance tax like those of New York and Illinois; and called for "a State tax of 10 per cent. upon all future contracts made payable in gold, the same to be paid by the holder."

The Prohibitionists met in convention at Des Moines, June 19. On one of the flags on the platform was a poster that read as follows:

Redrum R. R. direct from earth to hell. Operated under the protection of the United States Government, to which we pay \$1,000,000 a year revenue tax. Finest music on board. Ladies in attendance. Spe-

cial high-license coaches. A few local-option cars. Special attention given to young men. Last stop at Chicago. Last year we carried 100,000 through passengers, 1,000,000 more on the way. Stop over at Murphytown. Special Tillman coaches. No accidents. Only down trains. Easy chairs for preachers; sleeping cars for Christians. Annual receipts, \$1,200,000,000. Boys always in demand. Have you one to spare? Through tickets in every saloon.

The announcement that the Supreme Court had refused to interfere with the decision of the district court declaring the saloon petition invalid, was greeted with loud applause, and the convention joined in singing "Praise God, from whom all blessings flow." The platform, which was very long, after declaring in favor of absolute prohibition "with the Prohibition party behind it," a tariff for revenue, but with "special reference to the protection of our domestic labor, for 'the gold and silver coinage of the Constitution and a national currency issued by the General Government only,' for Government ownership or control of railroads, telegraphs, etc., for restricted immigration, for exclusion of the teaching of foreign languages in the public schools, for Sunday legislation, for liberal pensions, for settlement of differences by arbitration, for an income tax, and for the initiative and referendum system, made the following declarations in regard to State politics:

We denounce in unmeasured terms the so-called mulct law of this State, and we arraign the Republican party which enacted it for perfidy and treachery to the vote of the sovereign people cast for prohibition June 27, 1882.

We demand that the revenue laws of Iowa shall be radically reconstructed, to the end that the wealth of the wealthy shall bear its just proportion of taxation.

We demand a reduction of the legal rate of interest in this State to 6 per cent.

The ticket nominated was: For Governor, Frank Bacon; Lieutenant Governor, M. P. Atwood; Judge of the Supreme Court, J. W. Rogers; Superintendent of Public Instruction, Mrs. L. D. Carhart; Railroad Commissioner, H. F. Johns.

The Republican Convention, held in Des Moines, July 10, nominated the following candidates: For Governor, Francis M. Drake; Lieutenant Governor, Matt Parrott; Judge of the Supreme Court, Josiah Given; Superintendent of Instruction, Henry Sabin; Railroad Commissioner, George W. Perkins. The platform included the following declarations:

The Democratic party is convicted of obtaining power in 1892 under false pretenses. In its platform it declared the principle of protection to be unconstitutional, and in its campaign it denounced the policy as robbery. But, with complete power in its hands, its lawmakers have utterly failed to carry out the policy to which they were pledged. It is a farcical pretense for the Democratic party to claim credit now for a measure from which nine months ago its President withheld his approval and denounced as a humiliating abandonment of their cardinal principle.

We deplore the fact that the Democratic party, while professing especial interest in enlargement of our export trade, has destroyed the reciprocity arrangements established by a Republican administration. Its solicitude for foreign trade has been exhibited only in the admission of foreign goods to our markets without obtaining any reciprocal favors from foreign nations.

We are unalterably opposed to reducing the Amer-

ican workmen to open competition in our own market with the poorly paid labor of the Old World.

We believe in maintaining not only the highest wage rate for the laborer, but the integrity of money in which he is paid.

We urge that the United States exert its influence to establish with the important commercial nations of the world such an international agreement as will enable this country to reopen its mints to the free and unlimited coinage of both metals without loss of one or the other from the volume of our money.

Restricted immigrations and liberal pensions were favored.

The Democratic Convention, which met in Marshalltown, Aug. 7, was divided on the subject of coinage, but the monometallists were in the majority and elected their chairman. The minority report of the Committee on Resolutions presented a resolution calling for free coinage of gold and silver at the ratio of 16 to 1; but it was defeated by a vote of 420 in favor, to 651 opposed. The majority report, which was adopted, contained the following:

We declare the rescue of the finances of the country from the baleful effects of the Sherman law, the repeal of the un-American Federal election law, and the uprooting of McKinleyism to be works worthy of the history and prestige of the great Democratic party and of a courageous Democratic administration.

We condemn the cowardice and trickery of the Republican party of Iowa in failing to meet in its last State platform any of the issues important and vital to the interests of our State.

We believe that the mullet law fails to meet the requirements of a good excise statute.

We repeat our demand of the past five years for a local-option high-license law, and on behalf of the commercial interests of our State we favor a law permitting the manufacture of liquors, thus affording a market for the products of the farm and labor of the State, and saving to our people the enormous sums now expended in other States.

The resolutions also favored election of United States Senators by direct vote of the people, "just and liberal pensions to all deserving veterans," nonpartisan control of State institutions, and the speedy completion of the Hennepin Canal and the deepening of water ways from the Great Lakes to the ocean. The nominations were: For Governor, W. I. Babb; Lieutenant Governor, G. L. Bestow; Judge of the Supreme Court, T. G. Harper; Superintendent of Instruction, Lyman B. Parshall; Railroad Commissioner, George Jenkins.

The Republican ticket was successful at the election, the return of the vote for Governor being as follows: Drake, Republican, 208,689; Babb, Democrat, 149,433; Crane, People's party, 32,118; Bacon, Prohibition, 11,052. The other candidates were elected by the following vote: Lieutenant Governor, 210,888; Judge, 212,186; Superintendent, 212,852; Railroad Commissioner, 212,611. The next State Senate will have 43 Republicans and 7 Democrats; the House, 80 Republicans and 20 Democrats.

**IRISH NATIONAL ALLIANCE**, an organization formed in convention in Chicago, Sept. 26, 1895, having for its object "the securing of the independence of Ireland by any means within its power consistent with the laws and usages of civilized nations." The qualifications for membership are good moral character, birth on Irish soil or descent from Irish parentage, and

the taking of a pledge to aid by every means, in conformity with the constitution and by-laws of the Irish National Alliance, in securing the independence of Ireland. The organization has a president, a vice-president, a treasurer, and an executive council of nine members, who hold office for two years. The State organizations are modeled on the national plan, and all authority to organize must come from the national executive council.

Each local subdivision of the Alliance is known as a council, to be designated by the number of the charter furnished by the national executive council. The convention passed resolutions of sympathy with the Cubans, and commended the work now being done by the Gaelic League and the National Literary Society in Ireland, and by the Gaelic societies of the United States. The most important of the resolutions adopted were these:

We earnestly protest against the continued incarceration in English prisons of Irish patriots; we consider it inhuman and against the policy of civilized nations to keep in prison men who have acted only in the interest of their country and human liberty, and that the release of these men is imperatively demanded not only by the Irish people, but by civilization; we recommend the formation of military companies wherever practicable, in order to foster and preserve the military spirit of the Irish race and to prepare for action in the hour of England's difficulty.

Early in December, 1895, it was reported that a large number of councils had been formed, in New York, Brooklyn, Montreal, Quebec, St. Louis, Chicago, San Francisco, Cleveland, Boston, and Detroit. The movement commands attention on account of the military arm of the Alliance, to be a member of which the applicant must also belong to a lodge of the Clan-na-Gael. In this manner, a full regiment has been raised in the city of New York, and others of the large cities are following the example. When President Cleveland sent his message to Congress relative to the boundary of Venezuela, in December, 1895, the Alliance issued a manifesto against England, and declared it would furnish 100,000 men in case of a war with that nation.

**ITALY**, a constitutional monarchy in southern Europe. The Constitution is that of the ancient kingdom of Sardinia, adopted in 1848 and extended to the united countries of Italy in 1861. The throne is hereditary in the male line of the house of Savoy. The reigning King is Umberto I, born March 14, 1844. The Senate is composed of the royal princes and 390 members nominated for life from among persons who have attained certain official positions or have rendered eminent services to the country or pay 3,000 lire of taxes. The Chamber of Deputies contains 508 members, elected directly in separate districts by all citizens who can read and write and who pay 20 lire of direct taxes. The Council of Ministers, constituted on Dec. 15, 1893, is composed of the following members: President and Minister of the Interior, Francesco Crispi; Minister of Foreign Affairs, Baron Blanc; Minister of Finance, Paolo Boselli; Minister of the Treasury, Giorgio Sonnino; Minister of Justice and Worship, Andrea Calenda di Tavani; Minister of War, Gen. Stanislao Mocenni; Minister of Marine, Admiral Constantino Morin; Min-



ister of Education, Augusto Bacelli; Minister of Public Works, Giuseppe Saracco; Minister of Agriculture, Industry, and Commerce, A. Barzani; Minister of Posts and Telegraphs, Dr. M. Ferraris.

**Area and Population.**—The area of Italy is 110,623 square miles. The population on Dec. 31, 1894, was computed to be 30,913,663. The number of marriages in 1894 was 231,581; of births, 1,149,191; of deaths, 822,623; excess of births, 326,563. The number of emigrants in 1894 was 225,346, of whom 110,771 went to European countries, 41,256 to Brazil, 34,731 to the Argentine Republic, Uruguay, and Paraguay, 31,316 to the United States, 4,137 to other parts of America, and 3,135 to Africa, Asia, and Oceanica. The population of the largest cities at the end of 1893 was: Naples, 522,700; Rome, 451,000; Milan, 432,400; Turin, 335,900; Palermo, 276,000; Genoa, 215,300; Florence, 200,300; Venice, 150,900; Messina, 146,400; Bologna, 142,400.

**Finances.**—The receipts of the treasury for the year ending June 30, 1894, were 1,853,294,087 lire, and the expenditures 1,912,149,991 lire, leaving a deficit of 58,855,904 lire. For the year 1895-'96 the ordinary receipts were estimated in the budget at 1,655,207,382 lire, and extraordinary receipts at 43,881,243 lire; total, 1,699,088,625 lire. The ordinary expenditures were estimated at 1,578,300,068 lire and extraordinary expenditures at 111,042,696 lire; total, 1,689,342,764 lire. The revenue from railroads and other property is 87,128,904 lire; from the income tax, 288,183,300 lire; from land and house taxes, 193,400,000 lire; from registration, stamps, succession dues, the tax on railroad receipts, etc., 215,607,000 lire; from customs, 235,000,000 lire; from consumption duties, 52,050,000 lire; from the tobacco monopoly, 192,000,000 lire; from the salt monopoly, 71,500,000 lire; from taxes on the manufacture of spirits, beer, powder, and sugar, 39,500,000 lire; from the lottery, 65,000,000 lire; from posts, telegraphs, school fees, prisons, etc., 81,897,900 lire; repayments, 37,102,209 lire; various receipts, 8,410,740 lire; from domains, interest, contributions of Rome and Naples, etc., 88,427,329 lire; from sales of domains and ecclesiastical lands, etc., 15,186,203 lire; from nickel money, etc., 17,129,350 lire. The chief expenditures are: Interest on the consolidated debt, 463,351,363 lire; interest on extinguishable loans, 70,023,751 lire; annual payment on the purchase of railroads, 27,276,010 lire; railroad guarantees and interest on the floating debt, 124,032,024 lire; pensions, 78,300,000 lire; civil list and appanages, 15,050,000 lire; Senate and Chamber, 2,120,000 lire; service of the amortizable debt, 34,387,518 lire; interest, 8,595,512 lire; extraordinary expenses for amortization, etc., 33,499,332 lire; administration of finances and cost of collection, 189,153,504 lire; foreign affairs, 9,431,880 lire for ordinary and 38,400 lire for extraordinary purposes; justice, 33,751,952 lire for ordinary and 82,889 lire for extraordinary purposes; public instruction, 40,784,820 lire for ordinary and 669,113 lire for extraordinary purposes; interior, 56,993,159 lire for ordinary and 2,299,543 lire for extraordinary purposes; public works, 26,686,634 lire for ordinary and 62,400,483 lire for extraordinary pur-

poses; posts and telegraphs, 55,837,629 lire for ordinary and 56,516 lire for extraordinary purposes; war, 223,434,843 lire for ordinary and 2,548,000 lire for extraordinary purposes; marine, 94,721,270 lire for ordinary and 4,421,000 lire for extraordinary purposes; agriculture, commerce, and industry, 8,285,150 lire for ordinary and 1,183,863 lire for extraordinary purposes. The total expenditure on account of the debt in 1894-'95 was 598,113,950 lire for interest and 1,557,528 lire for amortization.

**The Army.**—The peace effective of the army in 1895 was: Staff and military establishments, 3,558 officers and 4,461 under officers and men; 346 battalions and 98 district companies of infantry, 7,148 officers and 146,494 men; 144 squadrons and 24 depots of cavalry, 865 officers and 24,406 men; 207 batteries and 76 companies of artillery and 40 companies of train, 1,307 officers and 30,452 men; 64 companies of engineers and 10 of train, 285 officers and 7,666 men; 12 sanitary companies, 191 officers and 2,271 men; 12 commissary companies, 126 officers and 1,746 men; 12 legions of carabinieri, 562 officers and 24,087 men; veterinary corps, 196 officers; African troops, 225 officers and 3,622 men; total, 14,463 officers and 245,205 men, with 50,390 horses and mules. The war effective is 1,508,954 trained and 520,424 partly trained troops and 1,368,411 untrained men of the territorial militia.

**The Navy.**—The fleet in 1895 consisted of 10 first-class battle ships of from 11,000 to 15,900 tons, with 14 to 22 inches of armor over the vital parts, each armed with 4 105-, 100-, or 67-ton guns, carried in barbettes by 8 of them ("Italia," "Lepanto," "Ruggiero di Lauria," "Andrea Doria," "Francesco Morosini," "Re Umberto," "Sardegna," and "Sicilia") and by 2 in turrets ("Duilio" and "Dandolo"); 6 second-class battle ships ("Affondatore," "Ancona," "Castelfidardo," "Marco Polo," "Maria Pia," and "San Martino"), armed, the first with 18-ton, the others with 4-ton guns; 5 fourth-class ships of the line ("Etna," "Fieramosca," "Giovanni Bausan," "Stromboli," and "Vesuvia"); 8 of the fifth, 13 of the sixth, and 2 of the seventh class; 5 first-class, 94 second-class, 38 third-class, and 21 fourth-class torpedo boats; 39 auxiliary vessels of various classes; and 8 auxiliary cruisers.

**Commerce.**—The special imports of merchandise in 1894 amounted to 1,094,600,000 lire; imports of precious metals, 108,100,000 lire. The special exports of merchandise amounted to 1,026,500,000 lire; transit trade, 57,800,000 lire; exports of precious metals, 31,500,000 lire. The principal imports were: Cotton, 119,800,000 lire; coal, 110,400,000 lire; silk, 86,100,000 lire; cereals, 79,200,000 lire; hides and skins, 47,900,000 lire; iron, 43,900,000 lire; woollens, 34,800,000 lire; machinery, 34,600,000 lire; fish, 32,800,000 lire; coffee, 29,300,000 lire; timber, 28,300,000 lire; colors, 25,500,000 lire; chemicals, 25,200,000 lire; wool, 24,700,000 lire; sugar, 23,000,000 lire; cottons, 22,400,000 lire; silks, 19,200,000 lire; gums, 17,800,000 lire; seeds, 17,300,000 lire; animals, 17,100,000 lire; jewelry, 16,900,000 lire; tobacco, 16,900,000 lire; petroleum, 11,900,000 lire. The chief exports were: Silk, 296,100,000 lire; olive oil, 63,500,000 lire;

wine, 49,000,000 lire; eggs, 40,000,000 lire; hemp and flax, 34,200,000 lire; vegetables, 30,000,000 lire; wood manufactures, 27,800,000 lire; animals, 27,000,000 lire; silk goods, 23,500,000 lire; sulphur, 21,500,000 lire; fruits, 19,900,000 lire; skins, 19,300,000 lire; cotton goods, 16,800,000 lire; almonds, 16,500,000 lire; colors, 13,900,000 lire; tartar, 13,400,000 lire; marble and alabaster, 12,900,000 lire; poultry, 12,800,000 lire; butter, 11,800,000 lire; rice, 11,700,000 lire; cheese, 11,600,000 lire; zinc ore, 10,500,000 lire. The values, in lire, of the special trade with the principal foreign countries, in 1894 are given in the following table:

COUNTRIES.	Imports.	Exports.
England.....	249,400,000	121,800,000
France.....	181,000,000	144,000,000
Germany.....	189,900,000	142,700,000
Austria.....	115,400,000	126,100,000
Switzerland.....	43,300,000	202,600,000
United States.....	109,900,000	91,200,000
British India.....	74,600,000	13,500,000
Russia.....	71,900,000	13,900,000
Argentine Republic.....	20,500,000	29,600,000
Belgium.....	24,800,000	21,700,000
Egypt.....	21,200,000	10,600,000
Turkey.....	12,100,000	16,300,000
Spain.....	10,500,000	12,700,000
Netherlands.....	3,500,000	14,500,000
Greece.....	7,200,000	7,000,000
Sweden and Norway.....	9,600,000	2,500,000

**Navigation.**—There were entered during 1894 in Italian ports 115,197 vessels, of 29,038,182 tons, of which 15,953, of 7,962,369 tons, were engaged in foreign trade, 9,579 of these, of 2,009,568 tons, being Italian, and 99,244, of 21,075,813 tons, were coasting vessels. The number of vessels entered from long voyages with cargoes was 12,682, of 6,384,198 tons. The number of steam vessels engaged in foreign trade was 6,716, of 7,262,709 tons. The total number of vessels cleared was 113,983, of 28,215,422 tons, of which 16,138, of 8,195,558 tons, were engaged in foreign trade, and of these latter 9,820, of 4,369,023 tons, carried cargoes.

The merchant marine on Jan. 1, 1895, consisted of 6,231 sailing vessels, of 571,605 tons, and 328 steamers, of 207,530 tons.

**Railroads, Posts, and Telegraphs.**—There were 14,944 kilometres, or 9,280 miles, of railroad in operation on Jan. 1, 1895.

The post office in 1893 forwarded 140,133,907 letters, 57,036,433 postal cards, and 215,640,616 newspapers and circulars.

The length of the telegraphs in 1893 was 38,288 kilometres, with 148,348 kilometres of wires. The number of paid internal messages sent was 7,596,134; of international messages, 814,694.

**Prosecution of Giolitti.**—Ex-Premier Giolitti, who on Dec. 15, 1894, submitted to the Chamber of Deputies a *plico* or sealed envelope containing charges against Crispi fortified by documents apparently implicating the Premier in the Banca Romana scandals, and afterward fled to avoid arrest when the session of the Parliament was suddenly suspended, returned to Rome on Feb. 27, 1895, to meet accusations brought against him of abstraction of papers from the archives and illegal possession of letters of Signora Crispi. The original complaint was for forgery and slander. Giolitti demanded a trial before the Senate. The Court of Cassa-

tion on April 24 sustained his appeal, and the case against him was abandoned, since further proceedings could be taken only by vote of the Chamber of Deputies.

**General Elections.**—Prime-Minister Crispi prorogued Parliament in December, 1894, because he found it impossible to command a majority for his measures and feared a vote of censure in the excitement caused by the accusations brought against him in the Chamber of Deputies by ex-Prime-Minister Giolitti. For six months he governed without a Parliament, putting off dissolution and the summoning of a new Chamber until it should become necessary for the voting of the budget. The Chamber was formally dissolved by royal decree on May 8, and elections were appointed to take place on May 26. The electoral lists meanwhile were revised under a new registration law enacted on June 11, 1894. The Pope renewed his injunction *non expedit*, forbidding Catholics to take part in the elections either as candidates or as voters (*ne eletti ne elettori*). The inhibition was universally respected. The politicians of all parties predicted that the elections would give Crispi a majority of 100 in the new Chamber. Results can be thus foretold because the prefects have power to control largely nominations and elections, but ministerial candidates often change their attitude after they are elected, and vote against the ministry on questions that arise in the Chamber. The people did not generally believe the imputations against the personal honesty of Signor Crispi, although they were revived by the Radical leader Cavalotti. Nothing had been actually proved against him in connection with the Banca Romana or the voting of a decoration for the Panama swindler Herz that was not capable of being explained in a way that was consistent with his lifelong record of probity. His assumption of a military dictatorship for the suppression of economic disorders in Sicily and his extension of the law of *domicilio coatto* to anarchical propaganda lost for him many adherents of liberal tendencies, but more votes were gained in the conservative section of the community. The improvement in the national finances was an achievement of Crispi's ministry that made him seem indispensable even to his multitudinous personal and political enemies. Baron Sonnino was able to boast that the rate of exchange had fallen 10 points, while 80,000,000 lire of fractional currency had been withdrawn from circulation; that the paper money was decreased 150,000,000 lire, while 44,000,000 lire of gold and 85,000,000 lire of silver had been added to the metallic reserve; that the Bank of Italy was successfully reconstructed and progress made in the reorganization of the Bank of Naples, and the official rate of discount had been lowered from 6 to 5 per cent.; that the debts abroad had decreased, consolidated stock had been withdrawn to the amount of 50,000,000 lire, 40,000,000 lire of treasury bonds had been redeemed, and 90,000,000 lire of Italian silver had returned from abroad; that Italian stock had risen to the highest quotations in spite of an increase in the tax; that imports had diminished by 69,000,000 lire, while exports increased 303,000,000 lire; that there was a reduction of 80,-



000,000 lire in expenditures, and an increase of 100,000,000 lire in revenue. In view of such results the country could forgive the dictatorial methods of Crispi, including the levying of taxes that were not yet authorized by Parliament.

The elections passed off quietly in most places. Crispi was elected in 9 constituencies. Two imprisoned socialists, Barbato and Felice-Giuffrida, were each elected in 2 or 3. Garibaldi Bosco, another condemned Sicilian socialist, was also elected. After the elections an attempt was made at Rimini upon the life of Count Luigi Ferrari, a socialist who denounced violence and illegality and was elected over Barbato, the candidate of the anarchists. Count Ferrari died from his wounds.

In the new Chamber the Ministerialists numbered 336 and the various groups of the Opposition 172. The Constitutional Opposition numbered 98, of whom 40 or more were Conservatives, following the Marquis di Rudini, and the rest Progressists, acknowledging Brin, Giolitti, and Zanardelli as leaders. The extreme left was 60 strong, about a third being advanced Socialists.

**Session of Parliament.**—The nineteenth Italian Parliament was opened on June 10, the day appointed by the royal decree. When the members took the oath of allegiance the Socialist Deputies were absent. The King in the speech from the throne spoke of further measures to insure the stability of the budget that were required before the problems of communal taxation and administrative reform could be considered. Modifications of the laws were to be proposed by the Government for the better protection of private rights and public tranquillity. All citizens, even those filling high positions, ought to be subject to the common law. Legislation giving a higher and more effective significance to the principle of human fraternity was relied on to guarantee social peace and lead the misguided to better things. The education in the common schools would be directed to the same end. The glory of his reign he sought in ameliorating the lot of the lowly. The intended visit of the Italian fleet at Portsmouth, which took place on July 9, was mentioned as being a return to the British fleet of greetings of most intimate friendship. In Africa the Government, far from pursuing a policy of adventure, wished only to consolidate the Italian possessions and pave the way for the colony's financial independence.

The new financial measures included changes in the customs tariff, a tax on insurance policies, and a revision of the probate duties, by which means 9,000,000 lire of new taxes would be obtained; 18,000,000 lire had already been realized by the decrees of the Government. Retrenchments would amount to 20,000,000 lire. The budget fixed expenditures at 1,615,630,000 lire, giving an estimated surplus of 2,578,000 lire. Bank notes were to be reduced 100,000,000 lire. The Socialists attacked the Italian policy of the Government. They demanded amnesty for political offenders, and when Signor Crispi declared that no mercy would be shown to leaders of revolt a physical encounter ensued on June 19. Sonnino's tax bills were carried substantially unchanged. On Sept. 17, the anniversary of the entry into

Rome, all political prisoners were set free with the exception of 4 leaders of the Sicilian riots. Giuseppe de Felice-Giuffrida had been elected again to the Chamber at a by-election in Rome. Laws against socialists and anarchists were introduced after Parliament reassembled on Nov. 21. Signor Crispi, having failed in his policy of conciliation toward the Pope, recalled his offered "truce of God" and returned to his old aggressive policy.

**Dependencies.**—Italy possesses a colony called Erythrea on the Red Sea coast of Africa, containing about 955,000 square miles, and claims a protectorate over the Empire of Abyssinia or Ethiopia (see ABYSSINIA). In December, 1894, in consequence of the rebellion of Ras Mangascia, a son of the late Emperor Johannes, the Italian authorities decided to incorporate the Kingdom of Tigre, over which he was governor, in their colony. They attempted the occupation of the country, being provoked by numerous raids of the Abyssinians into their territory. Protests made to King Menelek had no effect, for he had no effective authority in Tigre, which was in a state of rebellion against him, and, moreover, was inclined to encourage the people of Ras Mangascia in their hostilities against the Italians and to join them when his plans were ripe in a blow for the independence of Abyssinia. He did not acknowledge the right of suzerainty claimed by Italy, which was based upon a construction of the treaty of Ucciali that he would not accept. Menelek still lived in his own Kingdom of Shoa, south of Abyssinia proper. For three years he has been collecting arms and storing up food for the contest with Italy. When Gen. Baratieri, after his plans had received the approval of the Italian Government, began the conquest of Tigre in January, 1895, Menelek did not stir. Ras Mangascia collected an army of 10,000 men to resist the invasion of the Italian forces, but they defeated him at Belesa and Coatit, and afterward captured his camp at Senapeh and drove him out of his country, occupying the capital and all the northern and central districts. Suddenly, early in December, hostile forces began to pour into the country. A force of 1,300 native troops, commanded by Major Toselli, was surprised at Ambalagi and surrounded by an army of 25,000 Abyssinians. Major Toselli had under him 20 Italian officers and 40 noncommissioned officers. When the ammunition for the small arms and mountain battery was exhausted the enemy fell upon them, 20 to 1, and cut them to pieces. They killed 14 Italian officers and 700 men, and after the battle 300 were missing. Gen. Arimondi, who went to the succor of Major Toselli, encountered several bodies of the enemy and stopped their advance upon Adigrat. He arrived upon the field and found the remnant of 300 men beleaguered and hard pressed by the Abyssinians. Driving back the enemy, who were believed to have a Russian officer to direct their operations and were partly armed with rifles brought through the French possessions, Gen. Arimondi conducted a retreat to Makalle. The Abyssinian loss was reported to be 3,000 killed or wounded. The Italian forces in that region were concentrated at Makalle, which was well fortified; but later, when it was invested,

as well as Antolo, and Adua was also threatened, Gen. Baratieri, the Italian commander-in-chief, ordered all the forces to retire to Adigrat, where he established his headquarters.

The Abyssinian army that entered Tigre numbered at least 70,000 men, commanded by Ras Mangascia and Makonen. The latter had shortly before, as a ruse, made overtures of peace in behalf of King Menelek.

The Government asked for and received an

immediate credit of 7,000,000 lire and began at once to embark troops for Africa. Gen. Baratieri ordered the forces at Andowa to fall back upon Adigrat. Makalle and Antalo, as well as Adua, were besieged by the Abyssinians. The Government promised to limit its demands for the campaign to 16,000,000 or 20,000,000 lire. The British Government refused permission to land Italian troops at Zeila, on the Somali coast, the nearest point to Menelek's capital.

## J

**JAPAN**, a constitutional monarchy occupying the long chain of islands between Kamchatka and the Philippines. By the treaty between Spain and Japan, ratified in Tokio Aug. 7, 1895, the line of demarcation was fixed at the line parallel to a degree of latitude passing through the middle of the navigable part of the Bashee Channel. Spain declares that it will never lay claim to the islands lying to the north and northeast of this line, and Japan promises likewise concerning islands to the south and southeast of this line. No part of the Asian continent proper belongs to Japan. The treaty signed at Peking, Nov. 11, 1895, by Tadasu and Li-Hung-Chang specified that on the payment of 30,000,000 Kuping taels Japan would retrocede to China, and within three months evacuate, the Liao-Tung peninsula. The Emperor, Mutsuhito (peace man), was born Nov. 3, 1852, and the heir apparent, Yoshihito, of one of the imperial concubines, Aug. 31, 1877. The Empress, Haruko, born May 28, 1850, was married Feb. 3, 1869. The title of Mikado is now popularly obsolete. In the dynastic line, the oldest in the world, Mutsuhito is recognized as the one hundred and twenty-second in descent from the sun-goddess. Officially the empire began with Jimmu, B. C. 660. In the lawfully published list of portraits, 1895, besides the 9 females, 2 shorn Buddhist monks, warriors in arm, and children who were puppets (showing the vicissitudes of Japanese politics), the six "false" or "northern" emperors of the rival dynasty in the civil wars of 1336-'92 are now presented. Modern critical science rejects the first seventeen names in the list, and recognizes the credibility of Japanese history from about 400 A. D. The Emperor is sole executive, but is advised by a Cabinet made up of the heads of 10 departments, presided over by a Minister President, and consults with the Privy Council, composed of 20 statesmen of rank and experience.

**Government.**—The Constitution, proclaimed Feb. 11, 1889, is theoretically the gift of the sovereign to his people. It makes the ministers of state responsible to the Emperor, and not to the Diet. Only a comparatively small portion of the national expenses is under the control of the two houses; the great bulk of appropriations in the budget, being "fixed by law," can not be influenced by legislation. The ends sought by the various progressive parties is to limit by degrees the imperial prerogative, control the whole budget, make the Cabinet ministers responsible to the Diet, enlarge the franchise, and terminate

forever the practical monopoly of power, office, and emolument held since 1868 by men sprung mainly from the two clans of Satsuma and Choshu—in a word, to approximate the British and American models of government. The tenth session of the Diet opened in Tokio, Dec. 28, 1895. After six months of negotiation between the Liberal or opposition party and the Cabinet or Government leaders, issuing in promises from the latter of long-contemplated reforms and an appeal to the country if defeated in the Diet, union between the two sets of statesmen has been made. Government by party is thus introduced in Japan. In the election of Sept. 1, 1894, out of 460,113 electors, or 11 to every 1,000 inhabitants, 392,036 voted, or 85 per cent. of the whole number for 300 representatives in 257 electoral districts. On Dec. 31, 1894, the number of peers was 599, and of persons decorated 16,231, of whom 1,789 were foreigners. Of decorations received from foreign governments by Japanese there were 959. There are now 636 peers, of whom 120 have been made since 1868, the vast majority being Satsuma and Choshu men. Since the war with China 2 viscounts and 22 barons, with allowances to each person from the civil list of 20,000 and 10,000 yen respectively, have been created. The pension allowance to the families of those who lost their lives during the late war is 8 *sen* (about 7 cents) per diem. The standard of value is the silver *yen* (worth 73 cents), in which all statements concerning money in this article are expressed.

**Population.**—The annual census is made late in December and published in detail during the next year. Statistics since 1872, which then gave a total of 33,110,825 souls, show that Japan has gained over 8,000,000 in population since the old immoral, economic, and sumptuary checks on natural human increase have been removed. The average annual enlargement of the census figures is not far from half a million. The pressure of population upon the food product is relievable by the colonization of Yezo and Formosa, both fertile and thinly peopled islands. On Dec. 31, 1894, the enumeration showed that 41,810,202 natives, of whom 21,121,398 were males and 20,668,804 were females, lived in 7,883,369 houses. In the three social ranks were 3,884 nobles, 2,039,475 *shizoku* or gentry, and 39,766,843 *heimin* or commoners, the heads of households numbering 607,432,159, and 7,918,474 respectively. Of the unregistered persons, 4,401 were unadopted foundlings and 1,214 prisoners. There were 251,146 marriages and 112,362 di-



vores. Absconders numbered 312,735, and persons going abroad 53,791. Of centenarians, 24 women and 10 men reached ages ranging from 104 to 110 years. In Hokkaido (Yezo and Chishima) there are but 530,000 persons, of whom 50,000 immigrated in 1893. In Formosa and its islands, with their area of 15,000 square miles, there is a population of 3,500,000, which makes the total number of inhabitants in the Japanese Empire 45,000,000.

**Finances.**—At the session of the Diet, Jan. 23, 1895, the country being in the midst of war with China, all parties presented a unanimous front, and the budget, substantially as presented by the Government, was voted without discussion: Total revenue, 90,300,700.45 yen; total expenditures, 89,957,415.73 yen, of which 87,633,926 are reckoned as ordinary, and 2,666,783 as extraordinary yield. Compared with 1894, when the estimated revenue was 88,040,000.70, while the outlay was 80,140,000 yen, there is shown an increase of 6,157,743.10 yen in the ordinary and a decrease of 3,912,267.30 yen in the extraordinary yield. In the items of taxes, largely from duties on alcohol, the estimated increase is over 4,200,000 yen, and in receipts accruing from Government enterprises 1,000,000 yen. Current expenditures of departments have been reduced, but in the items of national loan, pensions, etc., there is a total increase of over 4,000,000 yen. In extraordinary items there is an increase of over 3,000,000 yen in order to hasten by two years the steel-clad battle ships now building in Europe. In the War Department, an additional sum of 550,000 yen for cost of cavalry, remounts, and the rise of price of fodder and provisions is noted. (Forty thousand horses were called into requisition in preparation for and during the late war). The sources of ordinary revenue are: Land tax, 70,902,341 yen; licenses and fees, 2,540,381 yen; Government industries and property, 12,290,207 yen; miscellaneous, 686,093 yen; interest on deposits, 1,214,902 yen.

In 1894 the public debt was 235,814,851 yen, of which 166,482,450 yen bears 5 per cent. interest; 45,405,121 yen is an inheritance from feudal days, debts of the old daimios, pensions to retired territorial nobles and gentry, etc.; and 2,957,280 yen is foreign; with 37,704,773 yen (15,704,773 yen for Treasury notes and 22,000,000 for silver certificates) held as a guarantee of the paper money in circulation. Japan's credit at the Bank of England, Dec. 1, 1895, on account of indemnities paid her by China, amounted to 118,643,910 yen.

**The Army.**—The military operations of 1894-'95, both in the field and with the reserves, showed the accuracy of the official statistics as heretofore given in this "Annual Cyclopædia." In the budget for 1896 "the already fixed expenditures for the army" aggregate 12,558,109 yen, and 16,314,163 yen of ordinary and 19,268,360 yen of extraordinary expenditure are asked for, the increase being for enlargement of the army and expansion of the war administration, which are to be completed by 1905, when the total expenditure on account of the army will be 25,996,399 yen. This programme has in view the doubling of the present military force and the power, within ten years, of landing and maintaining an

army of 200,000 first-class soldiers for a lengthened campaign on the Asian continent.

**The Navy.**—The Imperial Japanese Navy List made out in September, 1895, shows 49 men-of-war afloat or in an advanced state of construction. Of these, 17 are wooden, iron, or composite. The others are of steel and equipped in best modern style. In the budget of 1896 the ordinary expenditure for the Navy Department is fixed at 7,663,986 yen, and the extra amount asked for is 29,456,335 yen, of which 6,450,940 yen are for the construction of war ships "already ordered" and 22,256,294 for "naval extension." The programme is to raise the total displacement of the navy to 200,000 tons by A. D. 1904.

**Commerce.**—The total foreign commerce of Japan in 1893 was 177,970,031 yen. In 1894 it rose to 230,728,035 yen (of which 98,712,861 yen were for imports and 117,482,951 yen were for exports), thus exceeding the average by about 30 per cent. The depreciation in silver has for some years past facilitated exports, though standing in the way of imports, but the excess of even the latter over the former, in 1894 compared with 1893, shows clearly the development of the Japanese people's purchasing power. In 1894 the outflow of specie exceeded the inflow by about 7,600,000 yen. In the first half of 1895 the foreign trade amounted in exports to 59,444,559, and in imports to 60,027,078 yen, making a total of 119,471,637 yen, compared with 106,752,306 yen of the first six months of 1894, an aggregate expansion of 12,719,332 yen. In specie transactions the excess of 15,290,634 yen export over import is explained by the purchase of war material abroad. On the prosperous condition of the silk trade and general revival of business in Japan an estimated total trade for 1895 of 250,000,000 yen is based. Especial developments of trade with Australia and the United States are to be noted. In 1884, exports, chiefly rice and native manufactures, to Australia amounted to 246,020 yen, while imports, chiefly leather and raw products, were valued at 31,609 yen. In 1893 Japan sold to the Australians 890,637 yen and bought 319,034 yen worth of commodities. With the United States the chief trade is in kerosene and raw cotton. From Jan. 1 to July 1, 1895, 76,393,439 catties, or over 100,000,000 pounds of raw cotton, valued at 11,558,158 yen, were imported, an increase over 1894 of 14,112,732 pounds. Owing to the increase in cotton mills, with 750,000,000 spindles in 1895, compared with 500,000 in 1894, the demand for American cotton in 1895 was for 50,000 bales.

**Communications.**—The year 1895 was noted for great activity of transport on land and sea, the railways and shipping performing handsomely, safely, and with celerity the extraordinary requirements of war and peace. The length of railways in operation at the end of March, 1895, was 2,130 miles; that of lines under construction or projected was 1,043 miles, and the number of private railway companies was 29. State railways have a capital of 56,554,332 yen, with a total mileage of 979 miles, of which 581 were already open in March. The 29 private companies have a capital of 86,643,200 yen, and 1,550 miles of their total projected mileage (2,193 miles) are open to traffic. Grand total in Japan:

Capital, 143,197,532 yen; mileage, 3,173; open for traffic, 2,131 miles. Floods, storms, and earthquakes cause much annual loss.

In shipping, the Japanese in 1893 had 17,209 junks and 587,490 boats in native style, with 749 sailing vessels, with a tonnage of 44,967, in European form, and 680 steamers, of 110,205 tonnage and 24,080 horse power. By July, 1894, within thirty days, 87 ships, of 132,963·55 tons, mostly steamers and over 2,000 tons burden, had been bought. Japan's normal demand, however, is for steamers of from 200 to 1,000 tons. In May, 1895, there was a total of 503 vessels of modern build and 314,512 tons burden, owned wholly by Japanese. In the expansion of maritime enterprise following the war direct trade with the United States at Tacoma has been opened. The Nippon Yusen Kaisha made a profit of 3,500,000 yen by chartering steamers and transports to the Government during the war, and have set aside 2,500,000 yen for maintaining a line to Europe with 5 first-class vessels of 5,000 to 6,000 tons each. In 1894 there were 716 telegraph offices with 10,232·06 miles of wire in Japan, over which 6,444,463 messages were sent, while 52,865 international dispatches were received and 58,781 forwarded. Of telephone stations there were 28, most of the lines being between Tokio and Yokohama and Kioto and Osaka. From the 3,818 post offices were sent, and over the 100,000 miles of land and water routes were carried 321,471,080 articles, showing an increase of 15·5 per cent. over the total of 1894. Of this increase, 28·2 per cent. was in commercial samples, 18·7 in postal cards, newspapers 12·1, and letters 11·8. In international mail matter, 1,583,509 packages were received and 1,155,337 forwarded.

**Formosa.**—The treaty of Shimonoseki stipulated that at the end of two months the Chinese Government should transfer Formosa to the flag and Crown of Japan. Expecting easy occupation, a board of administration was formed in Tokio on a purely civil basis, the soldiery to be used chiefly in overcoming the savage aborigines. On the contrary, the Hakkas, Black Flags, and Peihoans or semicivilized natives rose in arms, organized by Liu. On May 24 a fleet of 14 transports carried the Imperial Guards from Port Arthur to Keelung. Four months of steady fighting began, and re-enforcements were necessary, making a total of 50,000 troops. These, under the command of Lieut.-Gen. Oshima, the hero of Ping-Yang, penetrated the mountain fastnesses and bamboo forests, and forced or stormed the walled towns. Keelung and Tamsui were first occupied, and the northern end of the island pacified before the summer rains. Despite the intense heat, fever, guerrillas, and rainstorms steady advance was made southward to Tek-cham, Chung-hua, Kagi, and Taiwan. In some of the battles as many as 10,000 men were engaged, the resistance being more desperate than in Manchuria. The final stand of Liu's army was made at Pang-liau, near which the Japanese fleet, which had been actively co-operating with the troops during the summer, were able to land late in September a force that compelled the unconditional surrender of the Chinese insurgents. Their leader, Liu, escaped to China, and, except a few later skir-

mishes with rebels in bamboo jungles and mountain strongholds, the whole island was pacified by Dec. 1. In both killed and wounded and by accident and invalidism the Japanese, who employed 130,000 men in all services, lost more men in the Formosan than in the Korean and Manchurian campaigns, in which 340,000 men were occupied. Formosa and the Pescadores were first occupied by Japanese colonists in the thirteenth and during the two following centuries, and some of the current geographical names are but Chinese pronunciations of those of old Japanese heroes. In 1894 the total foreign trade at the 4 open ports amounted to \$12,895,779. Contracts have been given for telegraphs, railways, and a submarine cable to connect Formosa with Hondo and Tokio. The chief products of the island are gold, sugar, rice, tea, camphor, drugs, spices, and timber in vast variety.

**Events of 1895.**—The chief military events of this year of Japan's territorial expansion were the winter campaigns in Manchuria and the summer occupation of Formosa. After the fall of Port Arthur the naval forces concentrated for an attack on Wei-Hai-Wei. Troops were landed Jan. 20, and the Chinese ships and forts passed into the hands of the Japanese, Feb. 16. Prince Arisuga-wa-no-Miya, uncle of the Mikado and commander-in-chief of the army, died Jan. 20, and was succeeded by Prince Komatsu. A fresh expedition sailed from Hiroshima Jan. 10. The members of the first Chinese peace embassy arrived at Kobe Jan. 30, but were not officially received, their powers to treat being insufficient, and they returned home Feb. 2. The cruiser "Suma-kan" was launched March 9, about which time also M. Bissonade, for twenty years past engaged in codifying the laws of Japan, returned to France. Li-Hung-Chang, Chinese plenipotentiary, arrived at Shimonoseki Feb. 19, to begin peace negotiations, which were greatly influenced in favor of China by the attempt made upon his life Feb. 24. The assassin was one of the fanatical young patriots, called Soshi, who abound in modern Japan. These half-educated persons presume to dictate policy to Cabinet ministers, endanger the national reputation, and disarrange grave business of state by their easy and frequent resort to violence and murder. Viscount Inouye Ki, Minister of Education and long "the Emperor's pen," was buried March 22. Armistice was declared March 30, to apply only to the northern parts of China, but it extended until May 8, or the end of the war. On April 1 the fourth national exhibition opened at Kioto. It lasted six months, and included the grand celebration of the eleven-hundredth anniversary of the founding of the city. April 13, an expedition sailed for the conquest of the Pescadores and Formosa. The treaty of peace was signed April 17, and the ratification took place at Chefoo May 8. The imperial rescript announcing conditions of peace was issued April 21. These being unpopular with the press, 55 newspapers were suspended and many others severely purged by the censors between April 4 and May 5. Under pressure of Russia, Germany, and France, Japan yielded possession of the Liao-Tung peninsula, receiving pecuniary indemnity from China instead. The Emperor left Hiroshima April 27, after a stay of two hundred



days, for Kioto, where he remained until May 30, reaching Tokio the same day amid unique demonstrations of rejoicing. Severe storms, during which a train containing 400 invalid soldiers was derailed, several being killed, visited the country in July. Sir Ernest Mason Satow, who from 1861 to 1883 had been an active member of the British legation in Japan, making himself one of the leading authorities in the language and literature of Dai Nippon, arrived as Queen Victoria's plenipotentiary, July 28. Cholera, resulting in 54,928 cases of disease and 37,691 of death, ravaged the empire from July to November, accompanied with typhoons and unusually chilly weather. Of dysentery there were 31,000 cases and 6,500 deaths. In the bacteriological station, Dr. Kitacato, a pupil of Koch, who had discovered the vital cause of the plague in Canton, China, succeeded in inoculating for leprosy, and has declared it curable. Prince Kitashirakawa-no-Miya died in Formosa, Oct. 28, though, as in like instances, not being officially deceased until after posthumous arrival, promotion, and decoration within the precincts of the imperial palace in Tokio. In Government documents he was alleged to have died Nov. 5, and his funeral took place Nov. 11. The treaty with China for the retrocession of Liao-Tung was signed Nov. 8, and the evacuation soon began, being completed at 3 p. m., Dec. 25. Most of the Imperial Guards and other troops returned from Formosa about the same time. The supplementary convention on the tariff between Japan and Great Britain was ratified in Tokio Nov. 21. The Diet was opened by the Emperor in person Dec. 28. The long-talked-of union or *modus vivendi* between the Government and the Opposition, which had been practically accomplished by conference and with documents, was shown in the rejection in the Diet by a heavy vote of the address to the throne censuring the ministerial foreign policy (retrocession of Liao-Tung, etc.), and calling for their resignations. The youngest daughter of the last Tycoon, Keiki, who resigned in 1868, was married Dec. 26. The Japanese cruiser "Kohai" was lost off the Pescadores and some of her crew were drowned.

**JEWS.** The record has been notable for the Jews of the United States in a marked advance in the sphere of education and activity in religious matters. The trend of the year was early shown in the session of the Women's Council at Washington, when representatives of the National Council of Jewish Women took a spirited part in the meetings. The new influence on American Israel was indicated by the essays read by American Jewesses. The keynote of the year was thus struck by the American Jewess, and the work of the various circles in about 20 cities has been of marked benefit. The scheme of operation consisted in monthly meetings, at which papers and discussions on topics of the day were presented; and of fortnightly meetings in small circles, which were devoted to study of the Bible, the history of Israel to the Christian era, and of the methods and aims of preventive philanthropy. In addition, efforts were made to improve and systematize Sabbath-school instruction, and there was issued a simple guide for the study of the prophets Isaiah, Jere-

miah, and Ezekiel. The moral effect of this movement, which has spread in the chief cities from San Francisco to New York and has brought thousands into social and intellectual contact, arousing interest in Jewish study and benevolent methods, can hardly be overestimated. Certainly it has shown that the American Jewess is not Oriental in her exclusiveness, but can work along the lines of education, charity, religion, reform, in even step with her sisters of other creeds. Graceful, then, were the resolutions passed by the National Women's Council, protesting against Russian persecution of the Jews, and the invitation extended by Miss Willard to the American Jewess to join her Temperance Union.

In religious matters proper, at the session of the Central Rabbinical Conference in Rochester, composed almost exclusively of rabbis of the reform wing of American Judaism, there was a further breaking away from the old traditions in the admission of proselytes, and the following formula of confession was adopted as alone necessary:

I believe with a sincere and a steadfast faith that there is a God, who is One and only One, the Creator, Preserver, and Ruler of the World.

I believe with a sincere and steadfast faith that man is created in the image of God, innocent and pure, endowed with reason, conscience, and free will, and capable of triumphing over sin and developing to perfection.

I believe with a sincere and steadfast faith that the soul of man is immortal, and righteousness brings reward, while wickedness brings punishment.

Unto Thee, O Lord, belongeth kindness, for thou wilt recompense every one according to his deeds.

I believe with a sincere and steadfast faith in the common fatherhood of God and the common brotherhood of men. To make this real is the great aim and hope and mission of Israel.

And God will be King over all the earth that day. God will be One and his Name One.

The new Union Prayer Book has been universally adopted by the reform congregations throughout the country. The question of circuit preaching received more attention, and Rev. E. N. Calisch in Virginia, Rev. Max Heller in New Orleans, and Dr. A. S. Isaacs in New York made efforts in that direction. Rev. Dr. J. Kransko, of Philadelphia, made further progress in his plan to establish an agricultural school for Russian immigrants near Philadelphia. Rev. Dr. H. Berkowitz, of Philadelphia, succeeded in extending the Chautauqua idea and giving impetus to a summer school of Jewish studies to be located at Forest Park, Pike County, Pa. Rev. Henry Iliowizi wrote some effective articles against tendencies in American Judaism, pleading for greater loyalty and sincerity. Another attempt to organize normal classes for Jewish teachers of Sabbath schools was made in New York late in the year.

There has been the usual number of new synagogues and charitable institutions. The Russian Jewish exodus showed a marked decline. A summary of the work of the United Hebrew Charities of New York city for the year ending Sept. 25, 1895, will throw light upon its operations: The receipts were \$144,539; expenses, \$138,895. The number of cases dealt with was 7,508, representing 27,015 persons; 6,629 persons

were given employment, 1,900 provided with transportation; 33,352 cases were investigated, 957 free internments, 5,071 visits made by nurses, 3,545 physicians' visits. Among the disbursements, \$18,498 went in monthly stipends, \$37,712 money gifts, \$16,354 transportation, \$14,354 clothing and fuel, \$11,765 medical maternity relief.

At the convention of the Order of Benai Berith, in Cincinnati, it appeared that there are 383 lodges in the United States and Germany, and 9 in the Orient. In the United States, since 1890, 4,709 have been initiated, 381 reinstated, 3,965 suspended, 1,621 withdrawn, 1,907 died. In benevolence \$2,676,723 has been expended since 1890, of which \$289,872 was for homes, \$214,555 sick benefits, \$2,160,535 endowment, and \$51,761 other charities. On Jan. 1, 1895, the lodges had on hand \$2,218,098, of which \$1,360,195 was for endowments, and \$657,903 for general purposes. The receipts since 1890 were \$37,308; expenses, \$18,432. This is the largest of the Jewish fraternities in the United States, and numbers about 25,000 members.

The Gratz College, of Philadelphia, instituted a series of lectures on Jewish and biblical subjects. The Atlanta Exposition had an interesting exhibition of Oriental Jewish objects, arranged by Dr. Cyrus Adler, of the Smithsonian Institution. Temple Emanu El, of New York, celebrated its fiftieth anniversary. On Thanksgiving Day union services were held in 12 cities, in which rabbis participated with Christian clergymen in church and synagogue. At the religious congresses in Toronto and Chicago Judaism was represented. The project of establishing a Jewish university was advocated at length in "The Jewish Messenger." New Jewish weeklies appeared in Atlanta and San Francisco.

In literature, Miss Josephine Lazarus's "The Spirit of Judaism," advocating the abolition of all forms, and an approach in spirit to the religion of the founder of Christianity, free from the dogmas and forms of the Church, aroused considerable discussion; Mrs. Frances Hellman issued a translation of Leroy Beaulieu's "Israel among the Nations"; Simon Wolf wrote in vindication of the Jew as patriot and soldier; the American Jewish Publication Society issued its regular volumes and announced a competitive prize of \$1,000 for the best juvenile story; Mrs. Harriet Lieber Cohen translated Sacher-Masoch's "Jewish Tales"; Mrs. Morris Jastrow published a translation of some essays by the late James Darmesteter.

Turning from America to Europe, one is disappointed at the continued unrest in Russia, expulsion of the Jews and restriction still being matters of daily recurrence. In Roumania Jews are the objects of exceptional measures and are practically disfranchised, notwithstanding the formal stipulations of Article XLIV of the Berlin Treaty of 1878. In Turkey Sultan Abdul Hamid has evinced the customary good will displayed by Ottoman rulers to the Jews, and he and his officials have taken increasing interest in the progress of education and charity in the Jewish community. The latest report of the Alliance Israelite Universelle gives these statistics as to its work: At the close of 1894 it

had 56 schools in the Orient, 35 for boys, 19 for girls, and 2 for infants, with a total number of 11,555 pupils (6,936 boys and 4,662 girls). These schools are open to all denominations, and among their pupils are Protestants, Roman Catholics, Greek Catholics, Armenians, and Mohammedans. One of the most important is the Technical School in Jerusalem. The Agricultural School at Jaffa shows remarkable results. The net receipts from the strictly agricultural department, in 1893 but 351 francs, rose in 1894 to 16,346 francs. The income of the Alliance for 1894 was 697,987 francs, which included 184,617 francs subscriptions, a donation of 352,677 francs from Baron de Hirsch, and 54,747 francs, the income for the year of his gift of 1,000,000 francs for education in Turkey; 560,329 francs were expended for educational purposes.

On Sunday, Aug. 18, services were held in the Berlin Jewish cemetery in memory of the dead soldiers of the Franco-German War. About 500 old soldiers attended, and Rev. Dr. Weisse said that 12,000 soldiers of the Jewish faith took part in the war.

The income of the Jewish community of Berlin for all objects during the current year reached 3,630,102 marks (about \$900,000). Members' contributions aggregated 1,188,847 marks (exclusive of 123,176 marks from scat rentals and 163,134 marks from reserved graves). The salaries of rabbis, readers, etc., reached 160,242 marks. Jewish and Talmudic science lost by death Jacob Reifmann, David Rosin, and Joel Müller. The Institute of France celebrated the centenary of its foundation. The Jewish element includes Michel Bréal, Henri Weill, and Jules Oppert. The first Jew to enter the institute was F. Halévy, composer of "La Juive." Of 1,873 artists represented at the two exhibitions opened in Paris in October, 68 were Jews and 35 Jewesses. The chief rabbi of France issued a circular letter to the rabbis of the republic, urging them to organize young people's societies for the study of Judaism, its literature and history. The total income of the London United Synagogues grew from £14,880 in 1871 to £25,916 in 1894, and the expenses from £8,886 to £16,183. The number of male seatholders rose from 1,505 to 3,353 and of female from 778 to 1,847. Nearly 80 Hungarian rabbis met in Buda-Pesth on Oct. 20 and passed a resolution relating to mixed marriages, with respect to which the rabbis declared, with one dissentient only, that while recognizing the validity of the civil ceremony, they could not bless such unions either by the marriage ceremony or other religious form. The anti-Semitic excesses in Vienna were grave enough to be repressed by the authorities, while the autonomy of the city was abrogated by the Emperor, owing to the election as burgomaster of Dr. Lueger, an anti-Semitic agitator.

From the full report of the Hirsch colonies in South America, it appears that before this year there were 563 families established in four colonies on 209,000 acres. During the present year 10 groups of about 400 families were settled in the Argentine Republic. The association has 444,780 acres, of which 246,077 are unoccupied. From its foundation to Sept. 30, 1894, it spent £376,369. In England, at the recent general election among those returned to Parliament were



Sir Samuel Montagu, Baron Ferd. de Rothschild, Sir Julian Goldsmid, Messrs. Arthur Strauss, Harry S. Samuel, Benjamin L. Cohen, and Baron Henry de Worms. Sir Israel Hart was knighted. Alderman George Faudel Phillips and Sir Francis Montefiore were appointed high sheriffs for the counties of Middlesex and Sussex. Prof. Raphael Meldola was elected President of the Royal Entomological Society. Hon. Isaac A. Isaacs was appointed Attorney-General of Victoria. New synagogues were formed at Bulawayo (Matabeleland) and Salisbury (Mashonaland).

There was unwonted activity in the Jewish literature of the year abroad. From the lighter work of Joseph Jacobs in "As Others saw him" and Israel Zangwill in "The Master," to Mrs. Henry Lucas's "Songs of Zion" and Miss Loewy's translation of Prof. Erera's book on "The Jews of Russia," the transition is easily made. But there is a large number of more scholarly books and *brochures* in biblical and

Oriental science and a mass of dissertations on rabbinical subjects. Profs. Barker, Kaufmann, Büchler, D. H. Müller, L. Blau, Drs. J. Lewy (of Berlin), Harkavy, Wiener, Friedlander, Gaster, and Hirschfeld were active in this field, while "The Jewish Quarterly Review" contained many contributions of permanent worth.

The closing weeks of the year were marked by the visit of Ahlwardt, the notorious German agitator, to New York (with the avowed purpose of arousing an anti-Semitic movement in the United States), and the opening of a fair in Madison Square Garden, New York, for the benefit of the Hebrew Educational Alliance and the Hebrew Technical Institute. In this the entire Jewish community, rich and poor, reform and orthodox, participated, and it was substantially aided by other than Jewish donors. At the same time the Jews and Christians of New Orleans were organizing a fair for the benefit of the Touro Infirmary.

## K

**KANSAS**, a Western State, admitted to the Union Jan. 29, 1861; area, 82,080 square miles. The population, according to each decennial census, was 107,206 in 1860; 364,399 in 1870; 996,096 in 1880; and 1,427,096 in 1890. By the State census of March, 1895, it was 1,334,668. Capital, Topeka.

**Government.**—The following were the State officers during the year: Governor, Edmund N. Morrill, Republican; Lieutenant Governor, James A. Troutman; Secretary of State, W. C. Edwards; Auditor, George E. Cole; Treasurer, Otis L. Atherton; Attorney-General, F. B. Dawes; Adjutant General, A. J. Davis, succeeded March 1 by S. M. Fox; Superintendent of Public Instruction, Edwin Stanley; Bank Commissioner, John W. Breidenthal; Superintendent of Insurance, George T. Anthony; Labor Commissioner, W. S. Bird; Fish Commissioner, Otis E. Saddler; Grain Inspector, A. C. Merritt; Oil Inspector, M. C. Kelley; Mine Inspector, Bennett Brown; State Architect, J. C. Holland; State Board of Charities, M. Albaugh, George A. Clark, K. E. Willcockson, George A. Baker, and W. N. Allen; State Board of Irrigation, W. B. Sutton, D. M. Frost, and M. B. Tomblin; Chief Justice of the Supreme Court, Albert H. Horton, succeeded, April 12, by David Martin; Associate Justices, W. A. Johnson and S. J. Allen; Justices of the newly created Appellate Court, Eastern Division, W. A. Johnson (Republican) and George W. Clark (Populist); Central Division, T. F. Carver (Republican) and A. W. Dennison (Populist); Western, Elrick C. Cole (Republican) and A. D. Gierson (Democrat.)

**Finances.**—At the close of the biennial period ending June 30, 1894, the State treasury held a balance of \$842,326.23. The debt on Oct. 15 was \$788,500, of which the various sinking funds held \$545,000. The assessed valuations were: Real property, \$237,086,283; personal, \$40,773,498; railway, \$59,764,683; total, \$337,624,464. The total assessed valuations reached their highest

point in 1889, \$360,815,073, and the decrease since has been due in the main to the reduction in railway valuations by the State Board of Assessors. In 1895 the amount of State taxes paid was reported at \$1,316,257.65, of which the 4 eastern tiers of counties paid \$653,349, or \$9,559 less than half of the taxes of the entire State, Shawnee County paying the most, \$60,678.

**Banking.**—On Oct. 15 Judge J. S. West decided that section 16 of the State banking laws of 1891, which made it a crime for a banker to receive deposits after he had knowledge of the insolvency of the bank, was unconstitutional and contrary to the second subdivision of section 16, Article II, of the Constitution of the State. This provides that when the Legislature seeks to amend a section of a pre-existent law, such part of the section as is desired to be continued shall be incorporated in the new section, and the old section shall be repealed. In the new banking law no reference was made to the old section, and as a result there are two sections providing for different penalties and making a difference as to what constitutes the crime.

**Education.**—The State has an interest-bearing public-school fund, in bonds and contracts, of \$9,686,993; an Agricultural College fund of \$502,927; a State University fund of \$140,731; and a State Normal School fund of \$137,211—all derived from the national land-grant endowment. The State University has received by bequest a greater sum than that from the Government, but the excess is not included in the above. There are in the State 9,088 public-school buildings, which have cost about \$10,703,708. The number of teachers employed is 11,888, to whom \$3,060,459 was paid in wages. The tax collected for school purposes in 1894 was \$3,539,986, and the total sum paid for public education was about \$5,300,000. There are also 24 private institutions of learning, mostly maintained by religious organizations, which have property aggregating in value \$1,713,920.

**State Institutions.**—The following are the charitable, educational, and penal institutions of the State, with the cost of grounds and buildings, to 1895: School for the Blind, \$85,449; School for the Deaf and Dumb, \$144,250; Asylums for the Insane, at Topeka \$616,378, at Ossawatimie \$420,000; Asylum for Imbeciles, \$29,078; Soldiers' Orphans' Home, \$49,561; Grand Army Home, \$49,000; State University, \$320,000; State Agricultural College, \$180,930; State Normal School, \$127,375; Penitentiary, \$1,659,700; Reform School, \$119,863; Reformatory, \$310,000; Industrial School for Girls, \$40,700; and State Capitol, \$2,000,000, for the completion of which about \$1,000,000 more will be needed. The total present cost of all State buildings, with grounds and equipments, is \$6,932,175.

**Railroads.**—On Dec. 31, 1893, there were 8,931.28 miles of single-track railroads in the State. During 1894 one line constructed 3.3 miles of new track, making a total, on Dec. 31, 1894, of 8,934.58 miles, and giving Kansas the fourth place as a railroad State. The State Board of Assessors in 1895 made a total assessment against railroad property of \$59,645,740.88, a decrease of \$118,942.40 from the total of the previous year.

**Stock Yards.**—The annual reports of Jan. 2, 1895, show that the stock yards at Kansas City, Kan., form the second largest plant in the world, being surpassed in extent and operations only by that in Chicago. During 1894 the receipts of stock of all kinds aggregated 4,953,414 head, valued at \$98,577,164, and the total receipts from the opening of the yards in June, 1871, till Jan. 1, 1895, were 52,024,924 head, valued at \$858,525,683. The receipts of 1894 comprised 1,692,512 cattle, 2,550,691 hogs, and 587,599 sheep. Shipments were made to 26 States and Territories.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of 1894: Corn, 3,731,940 acres, 41,797,728 bushels, value \$17,973,023; wheat, 3,395,698 acres, 35,315,259 bushels, value \$15,538,714; oats, 1,436,088 acres, 25,705,975 bushels, value \$7,968,852; rye, 149,445 acres, 866,781 bushels, value \$398,719; barley, 16,164 acres, 142,243 bushels, value \$69,699; buckwheat, 3,675 acres, 32,340 bushels, value \$29,106; potatoes, 108,213 acres, 4,436,733 bushels, value \$3,016,978; hay, 3,305,889 acres, 2,545,535 tons, value \$13,364,059; total value, \$58,359,150.

**Taxable Manufactures.**—In the fiscal year ending June 30, 1894, the collections of internal revenue aggregated \$362,739.97, from the following sources: Distilled spirits, \$65,008.49; tobacco, \$62,736.75; fermented liquors, \$16,460.39; oleomargarine, \$217,035.22; and penalties, \$1,499.12. The same sources yielded a total of \$277,633.81 in the fiscal year ending June 30, 1895. In the last year there were 308 single-account cigar factories, which used 383,561 pounds of tobacco, and had an output of 20,425,329 cigars, and 45 other factories, which had an output of 10,333 pounds of plug and 32,877 pounds of smoking tobacco. Other taxable manufactures were: Apple brandy, 1,212 gallons; grape brandy, 1,347 gallons; fermented liquors, 6,013 barrels; wheat whisky, 351 gallons; and oleomargarine, 7,189,335 pounds.

**Natural Gas.**—The discovery of natural gas in Allen and Neosho Counties has been followed by a similar "find" on Hickory creek, Peoria Township, Franklin County, where men were boring for a well. A syndicate controlling the Allen County field has secured a franchise from the City Council of Fort Scott for the construction of gas works and the installation of a complete plant there.

**State Census.**—The census taken in March showed a total population of 1,334,668, an increase in ten years of 66,138. Forty counties showed an increase over the enumeration of 1894, aggregating 30,246, and 61 counties showed a decrease aggregating 33,909. The most populous counties were Wyandotte, 57,286; Shawnee, 47,978; Sedgwick, 39,108; Crawford, 33,846; Cherokee, 30,651; Cowley, 28,860; Labette, 27,023; Atchison, 26,995; Reno, 26,492; Bourbon, 25,849; Osage, 24,818; Marshall, 24,567; Sumner, 24,138; Montgomery, 23,948; Lyon, 23,794; Douglas, 23,587; Washington, 21,602; Dickinson, 20,926; Franklin, 20,734; Marion, 20,374; and McPherson, 20,317. The most populous cities and towns were Kansas City, 40,673; Topeka, 30,151; Wichita, 20,841; Leavenworth, 20,822; Atchison, 15,500; Fort Scott, 11,108; Lawrence, 10,084; Pittsburg, 8,932; Hutchinson, 8,515; Emporia, 8,225; Parsons, 7,573; Ottawa, 7,059; Arkansas City, 6,904; Salina, 5,703; Argentine, 5,504; Newton, 5,148; and Winfield, 5,031.

**Judicial Decisions.**—Besides the decision mentioned under "Banking," two other important ones were rendered. In October the Supreme Court sustained the action of the Legislature of 1895 in adopting a law abolishing certain judicial districts and reapportioning the State. On Dec. 8 the same authority handed down an opinion sustaining the constitutionality of the laws of 1893 which gives eighteen months' time to debtors to redeem their property on all sales on execution or foreclosure made prior to the passage of the law.

**Legislative.**—The Legislature assembled in biennial session on Jan. 8. The message of Gov. Lewelling was principally devoted to an attack on the Republican party and the courts of the State. He urged the strictest economy in appropriations; recommended assessment of all property at its actual value; denounced the fee system; declared that the charitable institutions of the State should be under non-partisan management; upheld the strike of the coal miners; demanded the exercise of State's rights as against "the increasing tendency of the Federal courts to draw to themselves entire administration of affairs of the States and to constitute themselves general guardians of the State governments"; and acknowledged the need of a court of appeals, but one whose findings should not be final. Charles E. Lobdell, of Lane, was elected speaker, and all the subordinate officers who were nominated in the Republican House caucus and the Populist Senate caucus were installed.

The Republican Governor-elect, Edmund N. Morrill, was inaugurated on Jan. 14. His address was a brief review of the material progress of the State and of the condition of its most important interests. In his message to the Legis-



lature he called attention to many measures requiring immediate consideration; urged the creation of an appellate court as a relief to the Supreme Court; pronounced prohibition a settled State policy which must be enforced; advocated an early constitutional convention; denounced repudiation; favored moderate State aid in irrigation; recommended a reduction of judicial districts and the adoption of a new redemption law as an incentive for capital to seek investment in the State; wanted bribery made a crime; and urged that the State Board of Agriculture be kept out of politics.

The total appropriations for the biennial period 1895-'96 were \$2,500,000, or about \$300,000 less than the aggregate of the previous session. Among the general measures adopted were bills abolishing 6 judicial districts; reapportioning the State into 8 congressional districts; authorizing cities of the first class to fund their indebtedness incurred for internal improvements; establishing the Kansas Industrial Reformatory at Hutchinson; creating an appellate court; providing for an irrigation commission; exempting from legal process to beneficiaries the proceeds of life-insurance policies; prohibiting lotteries; making gambling a felony; establishing a Grand Army Museum in the State Capitol for the preservation of mementoes of the civil war; and making it a felony for any public officer to receive, in any manner, any consideration to influence his vote, with a special application to legislators.

Lucien Baker, Republican, of Leavenworth, was elected United States Senator, to succeed John Martin, Democrat, for the term ending March 4, 1901.

**KENTUCKY**, a Southern State, admitted to the Union June 1, 1792; area, 40,400 square miles. The population, according to each decennial census since admission, was 220,955 in 1800; 406,511 in 1810; 564,135 in 1820; 687,917 in 1830; 779,828 in 1840; 982,405 in 1850; 1,155,684 in 1860; 1,321,011 in 1870; 1,648,690 in 1880; and 1,858,635 in 1890. Capital, Frankfort.

**Government.**—The following were the State officers during the year: Governor, John Young Brown; Lieutenant Governor, Mitchell C. Alford; Secretary of State, John W. Headley; Treasurer, Henry S. Hale; Auditor, L. C. Norman; Superintendent of Public Instruction, Edward P. Thompson; Attorney-General, William J. Hendrick; Adjutant General, A. J. Gross; Commissioner of Agriculture, Nicholas McDowell; Commissioner of Insurance, Henry T. Duncan; Register of the Land Office, G. B. Swango; Railroad Commissioners, C. C. McChord, C. B. Poyntz, and Urey Woodson; Chief Justice of the Court of Appeals, William S. Pryor; Associate Justices, Joseph H. Lewis, James A. Hazelrigg, John R. Grace, Thomas H. Paynter, George B. Eastin (succeeded in November by George Durell), and B. L. D. Guffy—all Democrats except Judges Durell and Guffy.

**Finances.**—At the end of the fiscal year, June 30, 1895, there was a deficit in the treasury of \$41,968.17 and \$39,981.77 to the credit of the school fund. On Dec. 31, 1895, this deficit is said to have been \$19,355. There was at that date \$113,683.94 in the sinking fund, set apart, however, to pay military bonds and interest then

due. The sheriffs had paid in all taxes due the State except \$5,992, owing by the sheriff of Bracken County. The total indebtedness of the State is \$2,992,990.16.

**Products.**—It was reported in the spring from various parts of the State that the crops were threatened by vast numbers of cut worms or army worms—the third visitation in forty-five years. The hemp industry, formerly the source of great revenue to the blue-grass region of Kentucky, was now greatly depressed, whereas ten years ago it brought in from \$1,000,000 to \$1,500,000 annually: the product now barely reaches \$300,000. The low price of tobacco has called out appeals to growers to reduce the acreage, since it requires the best land, exhausts the soil, and calls for more labor.

**State Institutions.**—The number of inmates of the two penitentiaries is about 500. The branch penitentiary is overcrowded. The convicts are practically unemployed. The balance unpaid on appropriations to enlarge buildings of charitable institutions is \$176,000 and the unpaid expenses for last quarter \$113,000. The superintendent of the Central Lunatic Asylum reports that there is no additional room for colored lunatics in any of the State asylums. The appropriation for enlargement of buildings for the whites at the last General Assembly has enabled the construction of buildings that will make ample provision for several years.

**Prisons.**—The report of the Penitentiary for the year ending Nov. 30, 1895, shows that 524 prisoners were received, 12 of whom were under fifteen years of age, 106 under twenty, and 162 between twenty and twenty-five. In the past nine years the population of the prison has doubled, while the population of the State has not increased more than 20 per cent. The total number at the end of the year was 1,104. Of these, 130 are confined for murder and 196 for manslaughter; 43 of the prisoners are women. The average cost of each prisoner for a year was \$82.86, including officers' salaries and amounts paid to discharged prisoners. The net earnings of the convicts amounted to \$58,786.42.

The total number at the branch penitentiary, at Eddyville, Nov. 30, 1895, was 569, of whom 337 were negroes. The receipts from the State treasury for the biennial period were \$21,524.52, and the expenditures \$21,179.62.

**Charities.**—The Central Asylum for the Insane, at Lakeland, had a population of 1,083, Oct. 1, 1895, of whom 445 were women and 198 were negroes. The receipts for the year amounted to \$168,357.42, and the expenditures to \$169,547.42. New buildings, for which the Legislature appropriated \$65,000, were erected during the year.

The biennial report of the Institution for Deaf Mutes at Danville shows that the whole number instructed Oct. 31, 1895, was 295, of whom 39 were in the colored department. The total number of new pupils received during the year was 91. The total receipts for the white department were \$45,473.45 for 1893-'94, and \$55,114.71 for 1894-'95; for the colored department, \$5,727.27 the first year, and \$7,591.54 the second.

The Institute for the Blind, at Louisville, had 104 white and 26 colored pupils during the year

ending Oct. 31, 1894. The receipts for the year were \$31,504.40, and the expenses \$26,576.54.

The receipts of the Institution for Feeble-minded Children were \$23,624.07, and the expenditures \$23,999.83. There were remaining at the end of the year 49 girls and 45 boys.

**Mob Law.**—Several lynchings took place in the State during the year, notably one of a negro at Winchester, charged with an assault which, as afterward appeared, had not been committed, and another, the murder of a man and a woman in Marion County by a mob who burned the woman in her house and shot the man to death as he attempted to escape. The Governor suggested that a statute be enacted providing severe penalties against all who, by word or act, shall encourage such violence.

**Military.**—The twenty-ninth annual encampment of the Grand Army of the Republic was held in Louisville, beginning Sept. 9. On the 11th a parade of about 45,000 was seen by more than 300,000 spectators. At the head of the column marched two Kentuckians who enlisted in the Confederate service at the outset of hostilities and fought to the end. One bore aloft the Stars and Stripes, the other a silken banner of white, having in its center a golden dove and in its mouth an olive branch. This was called "The Emblem of Peace"—the reunion, thirty years after, of the victors and the vanquished.

An address of welcome by Henry Watterson was responded to by Past-Commander-in-Chief Warner, and a poem was read by James Whitcomb Riley. St. Paul was selected as the place for the next annual encampment, and the following officers were elected: Commander in Chief, Ivan N. Walker, of Indiana; Senior Vice Commander in Chief, E. H. Hobson, of Kentucky; Junior Vice Commander in Chief, S. G. Cosgrove, of Washington; Surgeon General, J. B. Whiting, of Wisconsin; Chaplain, T. E. Liff, of Utah.

The Committee on Resolutions reported favorably on the suggestion that a permanent national headquarters be selected. The offer of Philadelphia to store the records of the Grand Army in Independence Hall was accepted.

Other resolutions were as follow:

Appointing a committee to arrange for the erection of a monument at Washington to commemorate the loyal women who served as nurses or in other ways aided the soldiers of the Union during the rebellion.

Permitting posts to consolidate as the memberships grow fewer.

Recommending that Congress pass a law equalizing the pensions of war widows so that all shall receive at least \$12 a month.

The report on pensions concluded as follows:

We demand for our comrades the just treatment which the country gladly concedes. No niggardly cutting down of pensions under the guise of reissues; no partial and grudging allowances that cut here and spare there will meet the full measure of duty that the country owes to its surviving heroes. Nothing short of full measure—dealt with an honest hand, a liberal heart—will ever meet with the approbation of the American people. Receding from no position that we have heretofore taken, reaffirming all our previous declarations on the subject, we specially demand a liberal and just construction of the laws passed for the benefit of the pensioner.

The report on membership showed: Members in good standing, June 30, 1894, 371,555; gain by muster in, 14,672; gain by transfer, 5,554; gain by reinstatement, 13,471; gain from delinquent reports, 9,343—aggregate, 414,595. Loss by death, 7,368; loss by honorable discharge, 1,437; loss by transfer, 5,763; loss by suspension, 33,589; loss by dishonorable discharge, 140; loss by delinquent reports, 8,659; total loss, 56,956. Members remaining in good standing, 357,639.

A leading feature was the annual reunion and parade of the sailors, and additional interest attached to the event from the fact that it is probably the last time that the Jack tars will be seen at a Grand Army encampment.

**Political.**—The election in the Fourth District for the office of judge of the Court of Appeals, held Nov. 6, 1894, was reported to have resulted in favor of Sterling B. Toney by a majority of 25, and he received a certificate of election. His opponent, St. John Boyle, contested the election, basing his claim on contested ballots returned by the officers of election to the clerk of Jefferson County. The case was heard by the State Board of Contest, consisting of 5 of the State officers, and a majority of them decided in favor of Toney, but the Governor and the Auditor voted negatively on the resolution to declare him elected, believing that Boyle had a majority of 27 on the ballots that should have been counted. Judge Toney then resigned, Feb. 21, and the Governor accepted the resignation.

Judge Eastin was appointed and remained on the bench till the end of the year, when he was succeeded by Judge George Durell, elected to the office in November.

The Republican State Convention met in Louisville, June 5. The platform contained the following declarations:

We are opposed to the free and unlimited coinage of silver, believing that it would involve the country in financial ruin. We believe in a sound currency and in the use of both gold and silver for coinage, provided always that a dollar in one is made precisely as valuable as a dollar in the other.

We favor a tariff so regulated as to protect the interests of all classes of our citizens upon articles that may be successfully manufactured or produced in this country, thus insuring good wages to the laborer and a home market to the producer; and in connection with this we favor the re-establishment of the doctrine of reciprocity. In view of the past financial history of the Democratic party, its devotion to the old State-bank system and wild-cat tendencies, we affirm that the Republican party can be more safely trusted to regulate the financial system of the nation.

When the Democratic party came into power in Kentucky it found the State able to pay every debt and have millions of surplus left. In the meanwhile it has collected millions of dollars of taxes under the most urgent systems of revenue, and yet we are today in the humiliating attitude of being unable to pay the current expenses of the State, and upon a fair valuation of assets are in debt millions of dollars. They have overridden the Constitution, refused office to one fairly elected by the people, engaged in extravagant legislation, accepted salaries, created unnecessary offices, manifested incompetency to manage the penitentiaries, brought convict labor into competition with honest free labor, diverted the school fund, failed to provide a decent State Capitol, and left its charitable institutions without the necessary means for their proper operation.



The ticket placed in nomination was: For Governor, William O. Bradley; Lieutenant Governor, W. J. Worthington; Secretary of State, Charles Finley; Auditor, Samuel H. Stone; Treasurer, George W. Long; Attorney-General, W. S. Taylor; Superintendent of Public Instruction, W. J. Davidson; Register of the Land Office, Charles O. Reynolds; Commissioner of Agriculture, Lucas Moore.

The Democrats met in State convention in Louisville, June 25. The party is divided on the silver question, and the two leading candidates for the gubernatorial nomination each represented one of the opposing factions. P. W. Hardin was the Free-silver candidate, and C. M. Clay, Jr., the so-called Sound-money candidate. The majority report of the Committee on Resolutions was adopted after some debate, and after a motion to "dispense with the indorsement of Cleveland and Carlisle" had been rejected by a vote of 270 to 598, and one to approve the bond issue by a vote of 844 to 24. The resolutions adopted, after declaring against the re-establishment of a protective tariff, continued as follows:

We declare that our present national Democratic Administration is entitled to the thanks of the party for its honest, courageous, and statesmanlike management of public affairs; and we express our undiminished confidence in the Democracy and patriotism of President Grover Cleveland and his distinguished coadviser and Secretary, John G. Carlisle, of Kentucky.

When the Democratic party came into power in 1867 the bonded indebtedness of Kentucky was over \$4,600,000. Since 1867 the bonded indebtedness has been reduced to \$650,000, and the available assets of the sinking fund more than equal that sum.

We have increased the annual appropriations for the support of our charitable institutions from \$250,000 in 1867 to \$500,000 in 1895, and while improving our judicial system by increasing the number of courts and the frequency of their terms we have been compelled to increase our expenditures, one of the greatest items of which is the cost of criminal prosecutions, and a noticeable fact in connection with which is that the increase is greatest in districts controlled by Republican officials. We have, nevertheless, been able to decrease the current rate of taxation for general revenue purposes from 20 cents on the \$100 of taxable property in 1867 to 15 cents in 1895. The Democratic majority has voluntarily increased the annual expenditures for the support of common schools from \$256,000 in 1867 to about \$2,000,000 in 1895, and by wisely providing separate schools for the two races are to-day giving to the children of the colored race opportunities for education they nowhere else enjoy.

In the face of unexampled difficulties the Democratic party has succeeded in wholly withdrawing convict labor from competition with free labor and in abolishing the practice inherited from the Republican party of leasing the convicts to parties interested solely in making profit out of their labor.

The vote that adopted this platform was 647 to 233. The ticket follows: For Governor, P. Wat Hardin; Lieutenant Governor, R. T. Tyler; Secretary, Henry S. Hale; Auditor, L. C. Norman; Treasurer, R. C. Ford; Register, G. B. Swango; Attorney-General, W. J. Hendrick; Commissioner of Agriculture, Ion B. Nall; Superintendent of Public Instruction, Ed. P. Thompson. The vote on candidates for the nomination for Governor was as follows: Hardin, 468½; Clay, 330½; Stone, 76; Watterson, 3.

There was a sharp contest over the naming of the candidate for Secretary of State, the leading names being H. S. Hale and J. W. Headley; neither was in accord with the nominee for Governor. Charles R. Long was made chairman of the State Central Committee in place of D. Carroll, a Free-silver man.

During the canvass debates were held in various places between the Republican and Democratic candidates for Governor. The free-silver position of the Democratic candidate was not approved by the whole party, and in some quarters there was a demand for his withdrawal.

The People's party held a State convention at Louisville in July, and adopted a platform favoring free coinage, a graduated income tax, and economy in State expenditures. T. S. Pettit was nominated for Governor, John G. Blair for Lieutenant Governor, Don Singleterry for Secretary, C. H. Deane for Auditor, M. R. Gardner for Treasurer, H. H. Farmer for Superintendent, Mr. Spencer for Register, W. L. Scott for Commissioner of Agriculture, and S. M. Payton for Attorney-General.

The Prohibition party had a ticket in the field, headed by W. B. Demaree for Governor.

The election resulted in the success of the entire Republican State ticket. The vote for Governor stood as follows: Bradley, Republican, 172,436; Hardin, Democrat, 163,524; Pettit, Populist, 16,911; Demaree, Prohibitionist, 4,186. The vote for Lieutenant Governor, which was substantially the same as that for the remainder of the ticket, was: Worthington, Republican, 164,990; Tyler, Democrat, 156,045; Blair, Populist, 957; Hughes, Prohibitionist, 872. The political character of the Legislature is given as follows: Senate, 32 Republicans and 16 Democrats; House, 46 Republicans, 52 Democrats, and 2 Populists.

The city of Louisville was also carried by the Republicans.

Gov. Bradley was inaugurated Dec. 10.

**KOREA**, an independent kingdom adjoining Russia and Chinese Asia, between the Yellow Sea and Sea of Japan. Capital, Seoul. (For area, population, and history see "Annual Cyclopædia" for 1894.)

**Government.**—The royal line of Ni came to an end Jan. 15, 1864, while three royal widows were living. Queen Cho nominated Ni-Kung, a lad of twelve, son of one of the royal princes, heir apparent. The father of this boy, to whom was given the title Tai-Wen-Kun, or great Palace Prince, seized the reins of authority, and for more than thirty years has been the most active figure in Korean politics, and most of the time the real ruler of the kingdom. In 1873 the King attained his majority, and married a lady of the Min clan. The Queen, representing and moved by the most powerful faction of nobles, being withal a woman of extraordinary insight, shrewdness, and political ability, has been the chief opponent of the prince father. Two sons have been born to the King. After French, American, and Japanese invasions and hostilities, the first treaty made as a sovereign state by Korea with a foreign power was with Japan, Feb. 22, 1876. This was followed by treaties with the United States, England, Russia, France, Italy, and other nations.

One of the first results of the Japanese victories over the Chinese and the Tong-Haks was the attempted reform of the entire national administration. The Min faction and the pro-Chinese element were practically eliminated. Jan. 8, 1895, the King made an imposing journey to the tombs of his ancestors, and with solemn oath and ceremonies abjured all allegiance to or dependence on China, asserted Korean independence, and promised reforms. These latter are: Separation of national expenses from the civil list; fixing of the line of succession so as to avoid all court intrigue through the influence of the Queen and palace underlings; a public budget to be made annually; young men to be sent abroad to study; reform of the military system and of civil and criminal law; appointment to office to be made according to ability and not by favoritism; employment of foreign talent for advice and assistance. Of these articles of reform some, despite great difficulty and opposition, have been carried out. Korea is now a constitutional monarchy instead of an irresponsible despotism. On June 20 the first of a series of royal ordinances completely reorganized the provincial administration. The "eight provinces" became geographical expressions only. In their place are 23 prefectures, with 151 districts, in which are 230 revenue officers. In place of the old triple premiership is a Cabinet of 8 boards of administration. These are: Foreign, Home, Finance, Army, Justice, Education; Agriculture, Commerce, and Public Works; and Royal Household. In addition, a new judiciary has been established, with new codes of laws and 6 courts or systems, as follows: Special, convened only by the King on recommendation of the Minister of Justice; supreme, circuit, and for the capital, treaty ports, and provinces. There are now 3 legations abroad, the minister at Washington being Hon. Pom-Kwong-Soh. A postal system was inaugurated in July, 1895, with stamps of 4 denominations, engraved in the United States. The army consists of 5,000 men, under the instruction of American and Japanese officers. There is no mint or navy. A telegraph runs from Seoul to Wi-ju, on the Chinese frontier, and from Seoul to Fusan. The survey of a proposed railway from Chemulpo to Seoul, and from Seoul to Fusan, has been completed. In February a 21-inch tramway, 55 miles long, from Cheung-Nam-Po to Ping-Yang, the power used being human muscle, was completed. April 21 117 Korean lads went to study in Japan. Mrs. Esther Pak is a student of medicine in Chicago.

**Finances.**—The Government derives its revenue from various sources: 1, A land tax, which changes from year to year according to the harvest gathered; 2, a house tax; 3, customs revenue at three open ports; 4, licenses to trading guilds, gold miners, etc.; 5, miscellaneous taxes. In 1895 the Government borrowed from Japan \$3,500,000 to carry out reforms. For 1895 the official statement is: Revenue, 4,809,410 yen; expenditure, 6,273,384 yen, showing a deficiency of 1,463,974. The items of expense are: Royal household, 500,000; Foreign Office, 71,392; Home Department, 1,406,153; Treasury Department, 1,740,006; Army, 1,028,401; Justice, 47,294; Education, 124,422; Agri-

culture, Commerce, and Public Works, 183,416; extras, 372,300; reserve fund, 800,000 yen.

**Seoul and the Ports.**—The capital is finely situated on a soil of decomposed granite, and has good drainage into Han river. The streets are laid out with drains on either side, yet the city is astonishingly filthy, with narrow streets. On the north and south rise imposing mountains. The 3 palace inclosures are on the north side of the city, facing the sun. On the few elevations above the general level the Japanese, American, British, and Russian legations, and the Methodist and French Roman Catholic establishments are built, breaking the general monotony of one-story tiled or thatched houses. Most of the dwellings are horseshoe-shaped, with an open court and a high wall, which shuts out the view of one neighbor from the other. There is one very broad avenue in the city, running from east to west, from which diverge the wide roads leading to the palace gate, in front of which most of the events that in recent years have been described in Western newspapers have taken place. Leading from the imposing gate towers that loom up over the city wall on the southwest are wide highways, which open into the center of the main street, where stands the big bell, near which are the chief shops, factories, and store-houses. A crenelated wall 16 feet high incloses the whole city, crossing hill, valley, and stream. The native population of the city and suburbs is computed at 300,000. On June 15, 1895, the Japanese population consisted of: Males, 901; females, 537; total, 1,438. The white foreigners, diplomatists, and missionaries number more than 100. Three treaty ports are opened to commerce and foreign residents. Chemulpo, 20 miles south of the capital, contains a Japanese population of 4,243 and about 200 Americans and Europeans. It has 1 or 2 well-metalled and curbed streets, with several buildings in foreign style. Fusan, on the southeast coast, contains 1,307 Japanese. Gensan on Broughton's Bay, has a small settlement of Japanese and other nationalities. The Chinese are steadily advancing in numbers and business capacity to the status held before the war of 1894-'95.

**Christianity.**—In 1777 some literary men in the annual Korean embassy to Peking received a present of books from the Jesuit missionaries. On their return home they organized Christianity after the model of the Roman Catholic Church. After Chinese priests had been sent in the first French missionary, disguised as a Korean mourner, penetrated the forbidden country. Others followed, and native converts increased, despite the ban and bloody persecutions of the Government. In 1864 19 Frenchmen had entered Korea, a dozen of whom were then living. When, to the joy of the hunted native Christians, a fleet of Russian ships seemed to threaten the isolation of the kingdom the Tai-Wen-Kun ordered fresh persecutions. Nine Frenchmen were beheaded, and more than 10,000 Koreans were killed, exiled, or made refugees in Russian territory. In more peaceful times the French missionaries returned. In 1895 Seoul had a church, the orphanage of St. Paul de Chartres with a mother superior and 4 sisters, and the college of Ryong-San with 14 French instructors; the entire establishment in Seoul under the apostolical



vicar numbering 24, with several "religious" in other parts, all under the Society of Missions Étrangères de Paris, with more than 20,000 native adherents. Protestant missions began in 1885, when Dr. H. N. Allen introduced scientific medicine and surgery. American Presbyterians and Methodists quickly followed, with appliances of healing, teaching, printing, and preaching. The tenth anniversary of reformed Christianity in Korea was celebrated Oct. 9 to 11, 1895. The statistics show 42 congregations, meeting weekly, with which 19 stated preaching services are observed. Of 528 baptized persons on the rolls, two thirds are males, one third are females. There are 9 Sunday schools, with 445 persons enrolled. In 1894 202 communicants, or 61 per cent. of the present whole church membership, were

dividuals, who mortgage their crops and other property. The chief products of the country are rice, cotton, silk, hides, tobacco, and beans. The exports of rice for 1894 amounted to 459,682 piculs, valued at \$605,000. Of hides, the export was \$55,000 less than in 1893, but a diminution in this item shows that rinderpest is not so prevalent as usual. Awabi shells (500 pounds in 1894) are exported for button making and inlaid work. Only a fraction of the gold dust that is carried out of the country figures in the official returns. Ginseng, heretofore a Government monopoly and yielding a revenue from \$500,000 to \$1,000,000 annually, is now free, though a heavy tax is laid upon the traffic in certain kinds. The American product has powerfully influenced the whole Korean ginseng trade. In imports, Japa-



THE WEST GATE OF SEOUL.

received. Of the native churches 6 have Korean pastors. The Church of England, the Canadian and Australian Presbyterians, and 2 independent missions are also at work. Some of the best edifices in the country are those of the missions in the capital and the seaports. Besides tracts and Scripture translations, the missionaries have provided an excellent apparatus for the study of the Korean language, including grammars, dictionaries, and schoolbooks, and "The Korean Repository" is published monthly in Seoul.

**Foreign Trade.**—Despite the Chino-Japanese war, trade statistics for 1894 show the largest volume since the country was opened to foreigners. Nearly all the shipping in Korean waters is in Japanese hands, mostly belonging to the Nippon-Yusen-Kaisha, other vessels that figure in the official returns being chartered only for temporary purposes. The capital in the country invested in special enterprises is almost wholly Japanese, and is lent to the Government and in-

nese cotton goods, which in 1893 amounted to \$25,000, rose to \$128,000 in 1894. Owing to the low rate of exchange, to their cheap labor, to the saving effected in dispensing with tarpaulin, iron hoops, and tin-lined cases, and to lower freights, the Japanese are able to undersell the British fabrics, besides making a profit of from 15 to 30 per cent. During 1894-'95 the Japanese had the Korean market almost entirely to themselves, but the Chinese are now returning. In dyestuffs, shoes, hats, caps, and cotton yarns the Japanese importers are crowding out their European competitors. A large variety of miscellaneous imitations of American and European goods find their way into Korea from Japan, the labels being imitated with unblushing dishonesty. The petroleum used in Korea in 1894 was in value: American, \$68,500; Russian, \$1,000.

**Events.**—At the Royal College in Seoul lectures on Korean history were begun, one of the first of several plans to develop an intelligent



spirit of patriotism. A famine broke out in Quelpaert island, and the Government sent for relief 200,000 yen and 5,000 bags of rice. Other famines broke out in the districts desolated during the Tong-Hak disturbances. Prince Yi-Chun-Tong, twenty-three years old, nephew of the King and grandson of Tai-Wen-Kun, charged with conspiracy against the sovereign and implicated in the assassination of Kim-Hak-Ou, the leader of the Reform party, was arrested and tried on charge of treason by the special court and banished for ten years in a one-room hut to Kyo-Dong island. After being five hundred years under ban, Buddhist priests were permitted to enter the capital and walled cities. In July the Tong-Haks made uprisings in the southern provinces. Queen Min, apparently regaining full power, crowded the palace with women, servants, and underlings, as in the old days, and so managed affairs that the Home Minister, Prince Pak (Boku), was compelled to leave the capital, escorted by Japanese troops. The national costume of white was changed by decree to black, and the universal yard-long tobacco pipe was shortened by 2 feet. A conspiracy, plotted by native soldiers whom the Queen had discharged, by irresponsible Japanese and various bad characters, headed by the Tai-

Wen-Kun, resulted, Oct. 8, in an attack on the palace, in which the gates were forced, the Queen was murdered, the verdict of the special court was reversed, and several remarkable proclamations, one of which degraded the queen to the level of a servant, were issued. Later royal proclamations heaped posthumous honors upon Queen Min, appointed a staff of biographers, and ordered a funeral, to cost 70,000 yen. Oct. 26 the lunar calendar was abolished, the sixteenth day of the eleventh moon of the five hundred and fifth year of the dynasty to be Jan. 1, 1896. Sunday has been made a day of rest in the Government offices. Nov. 27 there was another attack on the palace by Koreans who were opposed to the new spirit and policy of the Tai-Wen-Kun. The chief participants in the *éméutes* of Oct. 8 and Nov. 27 were brought to trial and executed Dec. 28. In December the officials and many of the people had their hair cut, an act of vast significance, which changed the style of coiffure in vogue during the past five hundred years. During December most of the Japanese troops evacuated the country. The 4 parties in native Korean politics are called, respectively, the pro-Japanese, the pro-Russian, the pro-Chinese, and the "Korea for the Koreans."

## L

### LITERATURE, AMERICAN, IN 1895.

More books were published in our country in 1895 than in any previous year, the record showing 335 more than the total number issued in 1893, the largest book-producing year hitherto. In all, there were 5,469 books sent from the press, of which 5,101 were new books and 368 new editions. In 1894 647 out of the total of 4,484 were new editions, showing an increase of publication of original work, albeit not of a high order of merit. Of the total number of books manufactured in this country 3,396 were by American authors—by far the greater number of reprints made belonging to fiction—847 were by English and other foreign authors, and 1,226 were imported into this country, bound or in sheets, bearing an American imprint. By far the greatest increase was shown in fiction, the total of novels standing 1,114 against 729 in 1894. Of this number, however, only 287 were by American authors, while 589 were reprints and 238 importations. A marked increase was also noticeable in the department of literary history and miscellany—455 new books against 208 in 1894—and in poetry, while a falling off was shown only in books of the useful arts and those relating to sports and amusements. The chief importations were in theological and juvenile works and in poetry and biography. No book made any decided sensation.

**Biography.**—The most important work of the year falling under this head was beyond doubt "John Sherman's Recollections of Forty Years in the House, Senate, and Cabinet: An Autobiography," in 2 volumes, the appearance of which created a great sensation in political circles. A new cheaper edition was also made of "The Sherman Letters," published last

year. Mary Abigail Dodge (Gail Hamilton) published a "Biography of James G. Blaine," and another work of intense interest, from an opposing standpoint, was "The Life of Samuel J. Tilden," by his lifelong friend John Bigelow, who was peculiarly qualified to give the details contained in these two volumes. Ward Hill Lamon's "Recollections of Abraham Lincoln, 1847-1865," were edited by his daughter, Dorothy Lamon, and were of an entirely personal nature. L. E. Chittenden gave us a compilation of "Abraham Lincoln's Speeches," and the 42 articles contributed to the New York "Independent" in commemoration of the thirtieth anniversary of the assassination of April 4, 1865, was entitled "Abraham Lincoln: Tributes from his Associates; Reminiscences of Soldiers, Statesmen, and Citizens," and supplied with an introduction by William Hayes Ward, D. D. The "Political Debates between Abraham Lincoln and Stephen A. Douglas in the Celebrated Campaign of 1858 in Illinois" filled a handsome quarto volume, and yet again we had "Political Speeches and Debates of Abraham Lincoln and Stephen A. Douglas, 1854-1861," edited by Alonzo T. Jones. "George Washington Day by Day" was the title of a new life of the Father of his Country, by Elizabeth Bryant Johnston, and Dr. Eliphalet Nott Potter presented "Washington a Model in his Library and Life" in a lecture delivered May 12, 1895, at All Angels' Church, New York city. "The True Story of George Washington" was told for youngest readers by Elbridge S. Brooks. "General Sheridan" was the single issue in the "Great Commanders Series," the author being Gen. Henry E. Davies. A large octavo volume of "Critical Sketches of Some Federal and Confederate Commanders," by John Codman Ropes, Col. Theodore Ayrault Dodge, Gen. Francis A. Walker, and others, was edited by Col. Theodore F. Dwight, and from Lieut. Arthur Sinclair, of the Confederate States navy, we have a record full of interest of "Two Years on the 'Alabama.'" Albert Gallatin Riddle, who was a Member of the Thirty-seventh Congress, proffered "Recollections of War Times," a vol-



ume of reminiscences of men and events in Washington in 1860-'65, while "Cole's Cavalry," by C. Armour Newcomer, detailed the experiences of three years in the saddle in the Shenandoah valley. "Under the Guns: A Woman's Reminiscences of the Civil War," by Mrs. Annie Wittenmeyer, had an introduction by Mrs. U. S. Grant, and Vol. II appeared of the life of Anna Ella Carroll, under the title of "A Military Genius," by Sarah Ellen Blackwell. Thomas W. Knox wrote a "Boys' Life of General Grant," a companion volume to which might be termed "The Life of Gen. Robert E. Lee for Children," by Mrs. Mary L. Williamson. "Jewels of Memory" contained the reminiscences of Col. John A. Joyce. "Three Men of Letters" delightfully discoursed of by Prof. Moses Coit Tyler were respectively George Berkeley, Timothy Dwight, and Joel Barlow. "Letters of Celia Thaxter" were appreciatively edited by "her friends, A. F. and R. L.," and contain a sweet and refreshing charm. "Under the Old Elms," by Mrs. Mary B. Claflin, recalls many famous personalities gathered in the historic mansion of Gov. Claflin, so named by Henry Ward Beecher, while "Walks in Our Churchyards, Old New York, Trinity Parish," by John Flavel Mines (Felix Oldboy), possessed interest for many readers. "The Old Booksellers of New York, and Other Papers," by William Loring Andrews, and "Sketches of Printers and Printing in Colonial New York," by Charles R. Hildeburn, were issued in limited, expensive editions. "The Life and Letters of Dr. Samuel Hahnemann" we owe to Thomas Lindsley Bradford, M. D. "Conversations with Walt Whitman, by Sadakichi; written in 1894," was by Sadakichi C. Hartmann, a Japanese by birth, and "Down at Caxton's," by Walter Lecky, was the title of a number of biographical and literary sketches of noted authors. Charles K. Tuckerman filled 2 volumes with "Personal Recollections of Notable People." "Recollections of Life in Ohio, from 1813-1840," by William Cooper Howells, proved valuable in a twofold sense, as it not only supplied an admirable picture of the hardships of the early days of settlement in that State, but also furnishes a clew to many of the mental characteristics of the son of the author, the eminent novelist, who contributed an introduction to the volume. Joseph A. Willard told of "Half a Century with Judges and Lawyers" in the Superior Court of Boston. The second of the 5 volumes which will contain "The Life and Correspondence of Rufus King," edited by his grandson, Charles R. King, appeared during the year, while a similar service was rendered to a grandfather by Rev. Charles Cotesworth Pinckney in "The Life of General Thomas Pinckney," the interest of which extends far beyond the borders of his native State of South Carolina. "Carter Henry Harrison: A Memoir," was from the pen of Willis J. Abbot, and ex-Gov. John D. Long published a volume of "After-dinner and Other Speeches." "Townsend Harris, First American Envoy in Japan," by William Elliot Griffis, contains much new material of high historic value, opportunely presented. Dr. Asahel C. Kendrick, assisted by Florence Kendrick Cooper, wrote a biography of "Martin B. Anderson, LL. D.," the late President of the University of Rochester, and Richard Ellsworth Call, M. D., prepared for the Filson Club of Louisville, Ky., "The Life and Writings of Rafinesque," including a bibliography that comprises over 400 titles. "The Pilgrim Fathers of New England, and their Puritan Successors," were comprehensively treated by John Brown, D. D., Dr. A. E. Dunning supplying an introduction to the volume, while "Margaret Winthrop" was selected by Mrs. Alice Morse Earle to introduce a new series of "Women of Colonel and Revolutionary Times." Charlemagne Tower, Jr., contributed by far the most important work ever published upon "The Marquis de Lafayette in the American Revolution," with some account of the attitude of France toward the War of Independence, in 2 volumes, characterized by the most thorough research and warm but impartial admira-

tion for his subject. "Gustavus Adolphus," by Col. Theodore A. Dodge, in the "Great Captains Series," purported to be a history, in fact, of the art of war from its revival after the Middle Ages to the end of the Spanish succession war, while Ruth Putnam portrayed "William the Silent, Prince of Orange" as "The Moderate Man of the Sixteenth Century" in 2 volumes, based upon his own letters, those of his friends and enemies, and upon official documents. Montgomery B. Gibbs traced the "Military Career of Napoleon the Great," and "Napoleon Bonaparte's First Campaign" was reviewed, with comments, by Lieut. Herbert H. Sargent, U. S. A. "A Short Life of Napoleon Bonaparte," by Ida M. Tarbell, was profusely illustrated, and James A. Weston suggested "Historic Doubts as to the Execution of Marshal Ney." "André Chenier" was the subject of a memorial by Louie R. Heller. "Famous Leaders among Women" were the theme of Mrs. Sarah K. Bolton, and "Famous Women of History," by William Harcastle Brown, contained nearly 3,000 brief biographies. The life of "Josephine, Empress of the French," was written by F. A. Ober in the light of recent research, much space being given to her early life in the island of Martinique, while several famous characters are commemorated in "An Old Convent School in Paris, and Other Papers," by Sarah C. Woolsey (Susan Coolidge). Savonarola and Lorenzo de Medici were respectively considered as "The Monk and the Prince," by Atticus G. Haygood, Sr. From Ashton R. Willard we have "A Sketch of the Life and Work of the Painter Domenico Morelli," one of the foremost contemporary Italian artists. "Pioneer Days," by M. E. D. Trowbridge, told the life story of Gershom and Elizabeth Day, while "How Marcus Whitman saved Oregon," by Oliver W. Nixon, M. D., with an introduction by Frank W. Gunsaulus, D. D., and "The Story of Marcus Whitman," by J. G. Craighead, D. D., alike vindicate early Protestant missions in the Northwest. "Luther Halsey Gulick, Missionary in Hawaii, Micronesia, Japan, and China," was written by his daughter, Frances Gulick Jewett, and to William Rankin we owe "Memorials of Foreign Missionaries of the Presbyterian Church." "Great Missionaries of the Church," by Dr. Charles C. Creagan and Mrs. Josephine A. B. Goodnow, had an introduction by Dr. Francis E. Clark. "Charles Francis Barnard: A Sketch of his Life and Work," by Francis Tiffany; a "Life of John Livingston Nevius, Forty Years a Missionary in China," by Mrs. Helen S. Coan; "Forty Years in South China: The Life of the Rev. John Van Nest Talmage, D. D.," by Rev. John Gerardus Fagg; "Reminiscences" of Bishop Thomas M. Clark (of Rhode Island); a "Memoir of Rev. Baron Stow, D. D.," compiled by Rev. J. C. Stockbridge; "Memoirs of the Life and Religious Labors of Sunderland P. Gardner," an autobiography; and "William Mackergo Taylor, Pastor of the Broadway Tabernacle Congregational Church," a memorial volume, belong to religious biography, while "One Hundred Years ago; or, The Life and Times of the Rev. Walter Dulany Addison, 1769-1848," was compiled from original papers by Elizabeth H. Murray. A new illustrated edition was issued of "Threescore Years and Beyond," a book for the aged containing the experiences of a large number of representative men and women of advanced years, by William H. De Puy, D. D. Vol. III appeared of "The Writings of Thomas Paine," collected and edited by Moncreu D. Conway, covering the period 1791-1804. Charles F. Horne edited "Great Men and Famous Women," a series of pen and pencil sketches of the lives of more than 200 of the most prominent personages in history, in 8 volumes, and an anonymous volume supplied photographs and biographies of "America's Greatest Men and Women." "Studies of Men," by George W. Smalley, were collected from the "New York Tribune." Mary Powell Bunker compiled "Long Island Genealogies; Families of Albertson, Bodell, Bowne, Carman, Carr, Clowes (and others), being Kindred Descendants of Thomas Powell, of



Bethpage, L. I., 1688"; Henry Carrington Bolton and Reginald Pelham Bolton traced "The Family of Bolton in England and America, 1100-1894," and W. G. Stannard prepared "A Chart of the Ancestors and Descendants of Rev. Robert Rose."

**Criticism and General Literature.**—Under both of these heads fall "My Literary Passions," confided to us by William Dean Howells with charming *abandon*, which awaken many a sympathetic chord. Prof. Hiram Corson defined "The Aims of Literary Study," and Henry Matson, the author of "References for Literary Workers," discoursed of "Knowledge and Culture." Margaret S. Mooney offered "Foundation Studies in Literature," and Greenough White published Part I of an "Outline of the Philosophy of English Literature," devoted to the Middle Ages. Hjalmar Hjorth Boyesen contributed 7 enthusiastic "Essays on Scandinavian Literature," to which his "Commentary on the Writings of Henrik Ibsen," issued last year, must be regarded as supplementary. "Old Pictures of Life," by David Swing, to which Franklin H. Head supplied an introduction, filled 2 volumes, and Laurence Hutton was heard from upon "Other Times and Seasons" in the Harper's "American Essayists Series". Gustav Karpeles wrote on "Jewish Literature and Other Essays." Vol. III of "English Lands, Letters, and Kings," by Donald G. Mitchell (Ik Marvell), carries us through the times of "Queen Anne and the Georges," closing with a portrayal of Wordsworth. "Books and their Makers during the Middle Ages" were the subject of 2 volumes by George Haven Putnam, and Brander Matthews wrote of "Books and Play-Books." A new enlarged edition was issued of "Essays in Miniature," by Agnes Repplier. Thoughts of John Vance Cheney on poetry and the poets were entitled "That Dome in Air," while from Miss Vida Dutton Scudder we have 2 thoughtful volumes, the first tracing "The Life of the Spirit in the Modern English Poets," and the second offering "The Witness of Denial" in modern English prose writers. Frank Preston Stearns was particularly interesting in "Sketches from Concord and Appledore," and in this connection may be here mentioned "Literary Shrines: The Haunts of Some Famous American Authors," by Theodore F. Wolfe, M. D., who also made "A Literary Pilgrimage among the Haunts of Famous British Authors," both volumes exquisite in the technique of book making and fascinating in their affectionate treatment of the subjects of each. Elbert Hubbard also made "Little Journeys to the Homes of Good Men and Great." "Idyls of the Big World" were from the pen of W. D. McCrackan. Prof. F. M. Warren chose an apparently limited field in his study of "The Novel before the Seventeenth Century," which, however, was found to be wider than was supposed, and which he traversed in an interesting and instructive manner. "Twenty-five Letters on English Authors" came to us from Mary Fisher. Prof. R. G. Moulton edited "Four Years of Novel Reading," the account of an experiment in popularizing the study of fiction, which he regards, as he tells us in his introduction, as an art, and Hugo Erichsen, M. D., gave special attention to "Methods of Authors." John A. Kersey examined "Ethics of Literature." "Rhetoric: Its Theory and Practice" was the title given to the lectures upon "English Style in Public Discourse," delivered twelve years ago by Dr. Austin Phelps to the students of Andover, edited in text-book form by Prof. Henry Allyn Frink. A new revised and enlarged edition was also issued of "The Principles of Rhetoric," by Adams Sherman Hill. Gilbert M. Tucker made a plea for the proper use of the English language as "Our Common Speech," and Frances Bennett Callaway treated of "Charm and Courtesy in Letter Writing." Charles A. Dana collected 3 lectures upon "The Art of Newspaper Making" into a small volume. From Henry Van Dyke we had "Little Rivers: A Book of Essays in Profitable Idleness," and from Rev. George H. Hepworth "Brown Studies; or, Campfires and Morals." George H. Ellwanger entitled 6 com-

mentaries concerning some of those who have apostrophized the joys of the open air "Idyllists of the Country Side"; and among books chiefly descriptive of the beauties of Nature are to be mentioned "Among the Northern Hills," by William Cooper Prime, the author of "Along New England Roads"; "From a New England Hillside: Notes from Underledge," by William Potts; "Broken Notes from a Gray Nunnery," by Julia Sherman Hallock"; and "Through Glade and Mead," by Joseph Jackson. Sketches of life, scenery, and character in Fairfield, Conn., were published by Frank S. Child as "An Old New England Town," and Mrs. Alice Morse Earle portrayed "Colonial Dames and Good Wives" in pleasing fashion. "The Fast and Thanksgiving Days of New England," as examined by Rev. William De Loss Love, Jr., presented a striking picture of the religious, social, and political life of the times, and also contained a unique calendar in tabular form of all these days actually observed from 1620 to 1815, running through 50 pages. "The Growth of the Idyls of the King" was traced by Prof. Richard Jones. "Francis Bacon and his Shakespeare," by Theron S. E. Dixon, renews a controversy which is still further set forth in "The Plays of Shakespeare founded on Literary Forms," by Henry J. Ruggles, who presumes these forms to have been laid down by Bacon. Vols. IV and V appeared of "Sir Francis Bacon's Cipher Story," as discovered and deciphered by Orville W. Owen, M. D., who published also "The Historical Tragedy of Mary, Queen of Scots" and "The Tragical Historie of our Late Brother, Robert, Earl of Essex," both derived from the same source. Prof. Felix E. Schelling selected and edited "A Book of Elizabethan Lyrics," with an introduction, and 100 pages of notes; "Readings from the Old English Dramatists; with Notes," by Catherine Mary Reignolds Winslow, filled 2 volumes, and Prof. Morton W. Easton edited "Readings in Gower." "The Broken Heart" of John Ford was also edited, with notes, by Clinton Scollard. Prof. Albert S. Cook prepared "Exercises in Old English," based upon the prose texts of his "First Book in Old English." "Elementary Greek Education," by Frederiek H. Lane, outlined the aims, methods, and results of education in Greece prior to 404 B. C., and "Roman Life in Latin Prose and Verse" consisted of illustrative readings from Latin literature, compiled and edited by Harry Thurston Peck and Robert Arrowsmith. J. W. Mackail made a compact survey of "Latin Literature." "A Modern English-Greek Dictionary," by A. M. Janaris, purported to be a concise dictionary of the English and modern Greek languages as actually written and spoken. H. A. Guerber published 3 works, "Stories of the Wagner Operas," "Myths of Northern Lands," narrated with special reference to literature and art, and "Legends of the Rhine"; M. A. B. Evans wrote of "Nymphs, Nixies, and Naiads"; while Charles Godfrey Leland gave "Legends of Florence." "Snow-Bird and the Water-Tiger, and Other American Indian Tales," told by Margaret Compton for young people, was illustrated with drawings by Walter Conant Greenough. "Bahama Songs and Stories," by Charles L. Edwards, formed Vol. III of "Memoirs of the American Folklore Society." Edwin Lawrence Godkin's "Reflections and Comments, 1865-'95" were collected from the files of the "Nation," in which they appeared during the period specified. "Select Conversations with an Uncle," by H. G. Wells, and "Cousin Anthony and I," by Edward Sanford Martin, discussed divers matters and various aspects of life, while Mary H. Perkins (Dorcas Hicks) looked at life in sunshine and shadow "From my Corner." Mary Davies Steele describes "A Happy Life," chiefly from an invalid's point of view; Henry Hardwicke explained "The Art of Living Long and Happily"; William M. Thayer proffered hints and helps for young men and women respectively in "Aim High" and "Womanhood," and also treated of "Turning Points in Successful Careers." Edward W. Bok pointed young men "Successward." John



Bryan published Vol. I of "Fables and Essays," and A. Wallace "Popular Sayings dissected." "How to Win" was a book for girls by Frances E. Willard, with an introduction by Rose Elizabeth Cleveland, and Ruth Ashmore held "Side Talks with Girls." "About Men: What Women have said" was a compilation by Rose Porter. "Life and Love" were discussed by Margaret Werner Morley, the author of "A Song of Life," with the same refinement of thought and style that characterized her previous work, while she addressed a maturer audience. In conclusion we have "Initial Studies in American Letters," by Henry A. Beers, originally published in 1887 as "An Outline Sketch of American Literature"; "Masterpieces of British Literature," with biographical sketches, notes, and portraits; "Southern Literature, from 1579 to 1895," by Louise Manley; "Children's Stories in American Literature, 1660-1860," by Henrietta Christian Wright; "American Literature," by Mildred Cabell Watkins, in the series of "Literature Primers"; "Specimens of Narration," chosen and edited by William T. Brewster in "English Readings"; "Outlines of German Literature," by Mrs. Mary Jefferson Teusler; "Modern German Literature," by Prof. Benjamin W. Wells; and "German Historical Prose," selected and edited, with notes, by Hermann Schoenfeld. A "Dictionary of Burning Words of Brilliant Writers" was compiled by Josiah H. Gilbert, forming a cyclopædia of quotations from the literature of all ages, to which Dr. C. S. Robinson contributed an introduction. William I. Fletcher and R. R. Bowker prepared "The Annual Literary Index" for 1894, and the "Book Lover's Almanac for the Year 1895" completed the third year of that publication. The handsomest addition, from a typographical standpoint, ever made to American bibliographical literature was the description of "The Library of Robert Hoe"—one of the most remarkable private libraries in the United States—by O. A. Bierstadt, designed as a contribution to the history of bibliophilism in America, and illustrated with 110 artotype reproductions from manuscripts and books in the collection. A beautiful new Riverside edition of "The Works of John Burroughs" was issued in 9 duodecimo volumes with several portraits of the lover of Nature and with engraved title pages. A new birthday edition in 2 volumes was also made of Dr. Holmes's "Over the Teacups."

Humorous books, which may as well be included here as anywhere else, were "The Adventures of Jones," by Hayden Carruth; "Suppressed Chapters and Other Bookishness," by Robert Bridges (Droch); "The Idiot," "A House-Boat on the Styx," and "Mr. Bonaparte of Corsica," the last a burlesque life of Napoleon, by John Kendrick Bangs; "The Literary Shop, and Other Tales," by James L. Ford; "Aunt Belindy's Points of View and A Modern Mrs. Malaprop," by Lydia Hoyt Farnier; "Barby Coey's Philosophy," by William Fenimore Cooper (Barby Coey); and Edward Townsend's two "Chimmie Fadden" books. "Billtry" was a parody on "Trilby," by Mrs. Mary Kyle Dallas, and "Drilby Reversed," a burlesque in verse of the same book, by Leopold Jordan.

**Education.**—James Phinney Munroe traced an outline of the growth of "The Educational Idea" in modern times, William Noetling made "Notes on the Science and Art of Education," and Bishop J. L. Spalding considered the "Means and Ends of Education." "A Manual of Pedagogics," by Daniel Putnam, "Psychology in Education," by Ruric N. Roark, and J. N. Patrick's "Elements of Pedagogics" relate rather to the theory of teaching, while the practical side was set forth in "The Philosophy of School Management," by Arnold Tompkins. A new edition, with special preface, was issued of "The Teacher and the Parent," by Charles Northend. Prof. Albert Bushnell Hart published "Studies in American Education," and Catherine Aiken suggested "Methods of Mind-Training, Concentrated Attention, and Memory." "Froebel's Gifts," by Kate Douglas Wiggin (now Mrs. George C. Riggs) and Nora Archibald

Smith, was the first of a series of 3 volumes to be entitled "The Republic of Childhood," and from Florence Hull Winterburn we had a volume upon "Nursery Ethics." "The Evolution of the Massachusetts Public School System" was traced by George H. Martin in the "International Education Series," and "Herbart and the Herbartians," by Charles de Garmo, was added to the "Great Educators Series." William Howe Tolman added a "History of Higher Education in Rhode Island" to the "Contributions to American Educational History," issued by the United States Bureau of Education, which also published a "History of Education in Maryland," by Bernard C. Steiner. "Four American Universities: Harvard, Yale, Princeton, and Columbia," were respectively described by Charles Eliot Norton, A. T. Hadley, W. M. Sloan, and Brander Matthews, and a "History of the Rensselaer Polytechnic Institute, 1824-1894," was written by Palmer C. Ricketts. "A History of Amherst College during the Administrations of its First Five Presidents, from 1821 to 1891," by William S. Tyler, D. D., is at once an abridgement and a continuation of the "History of Amherst College during its First Half Century, 1821-1871," and had an introductory note by Dr. Richard Salter Storrs. A second edition was made of "How to teach Natural Science in Public Schools," by Hon. William T. Harris, in "School Bulletin Publications," and Frank Owen Payne found "One Hundred Lessons in Nature Study around my School." Isabella G. Oakley published "Simple Lessons in the Study of Nature for the Use of Pupils," and "Little Nature Stories for Little People" were adapted from the essays of John Burroughs and edited by Mary E. Burt. From James A. McLellan and John Dewey we had "The Psychology of Number and its Applications to Methods of Teaching Arithmetic"; from Gordon A. Southworth Book II of "The Essentials of Arithmetic, Oral and Written," for upper grades; from John Jackson "The Teaching of Handwriting"; from Spencer Trotter, M. D., "Lessons in the New Geography for Student and Teacher"; from Amos M. Kellogg "Forty Lessons in Clay Modeling"; from W. Bertha Hintz "Illustrative Blackboard Sketching"; and from Anson K. Cross "Free-hand Drawing," "Color Study," and "Mechanical Drawing," manuals for teachers and students. In collaboration with Amy Swain the same author also prepared an "Outline of Drawing Lessons" for primary and for grammar grades. In the series of "Eclectic School Readings" we have "Stories of Great Americans for Little Americans," and "Stories of American Life and Adventure," by Edward Eggleston, while "The Story of Patriots' Day, Lexington and Concord, April 19, 1775," by George J. Varney, shows how the anniversary may be commemorated by schools. "Arbor Day and Aids for its Proper Observance by the Schools of Wisconsin" was issued by the Department of Public Instruction of that State. Charles H. Levermore and Frederick Reddall compiled "The Academy Song-Book," for use in schools and colleges, Edward S. Ellis edited "The Youth's Classical Dictionary for Boys and Girls," and "The Schoolmaster in Comedy and Satire" was arranged and edited as a companion volume to "The Schoolmaster in Literature."

**Fiction.**—Ten hundred and fifty new books of fiction were recorded in 1895 against 573 in 1894, and but 64 new editions against 156 the preceding year. F. Marion Crawford continued the story of "Katharine Lauderdale" in 2 volumes devoted to "The Ralstons," and then returned to his more congenial Italy for the setting of the powerful story of "Casa Braccio," which was also issued in 2 volumes and illustrated by A. Castaigne. Richard Harding Davis told a sweet and satisfactory love story in "The Princess Aline." Frank R. Stockton was hardly at his best in relating "The Adventures of Captain Horn," but his admirers were delighted with "A Chosen Few" of his best short stories collected into a volume, which contained an etched portrait of the author. Many well-known authors were represented only by vol-



umes of short stories. Henry James published "Terminations"; Henry Harland (Sidney Luska) entitled his "Gray Roses"; F. Hopkinson Smith portrayed "A Gentleman Vagabond and Some Others"; Constance Fenimore Woolson was sadly recalled by "The Front Yard, and Other Italian Stories" and "Dorothy, and Other Italian Stories"; Charles Egbert Craddock (Mary N. Murfree) published 2 volumes, "The Phantoms of the Footbridge, and Other Stories" and "The Mystery of Witchface Mountain, and Other Stories"; and Kate Douglas Wiggin gave the title of "The Village Watch Tower" to 6 tales. Maria Louise Pool contrasted the opposing temperaments of our widely separated sections of country in her novel, "Against Human Nature," and Eliza Orne White produced a strong story in "The Coming of Theodora." "The Life of Nancy," as told by Sarah Orne Jewett, was at once pathetic and hopeful, while from Mrs. Constance Cary Harrison (Mrs. Burton Harrison) we had "An Errant Wooing" under varied skies. "With the Procession" was another novel of Chicago life by Henry B. Fuller (Stanton Page), who apparently succeeds as well in his realistic vein as in his ideal and romantic one. From Brete Harte came "Clarence" and "In a Hollow of the Hills," and Capt. Charles King told "The Story of Fort Frayne," publishing also "Captain Close and Sergeant Croesus," 2 stories in 1 volume, and "Trooper Ross," with which was also bound "Signal Butte." He also edited "Captain Dreams, and Other Stories." "A Madeira Party," by Dr. S. Weir Mitchell, was the title given to a volume of 2 short stories which show he has lost none of his power, and "Philip Vernon," also from his pen, proved to be a tale in prose and verse of the days of Elizabeth and the Spanish Armada. "Mr. Rabbit at Home" was intended as a sequel to "Little Mr. Thimblefinger and his Queer Country," by Joel Chandler Harris, whose "Uncle Remus" went through a new and revised edition during the year. "A Singular Life" was outlined by Elizabeth Stuart Phelps (Mrs. Herbert D. Ward), and "A Dash to the Pole" was made by her husband in a wildly imaginative flight in an air ship. "The Wise Woman" was the title of Mrs. Clara Louise Burnham's helpful novel, and Rose Porter made a charming picture of "My Son's Wife," "Bernicia," the only contribution of Mrs. Amelia E. Barr, was an English story of the close of the eighteenth century. "On the Point" was a summer idyl by Nathan Haskell Dole; Hezekiah Butterworth related the romance of a colonial fireside "In Old New England"; and Dr. Charles Conrad Abbott described "A Colonial Wooing." Mary Catherine Lee, the author of "A Quaker Girl of Nantucket," was equally successful with "A Soulless Singer"; Mary Hallock Foote was welcomed once more with "The Cup of Trembling, and Other Stories"; "The Sister of a Saint, and Other Stories," by Grace Ellery Channing, appeared in the "Carnation Series"; and Julien Gordon (Mrs. Julia Van Rensselaer Cruger) told of "A Wedding, and Other Stories." Amanda M. Douglas sent out 3 books, "Sherburne Cousins," "A Sherburne Romance," and "In Wild Rose Time. The vexed problem of capital and labor formed the theme of an entirely new writer, Helen Choate Prince, a granddaughter of Rufus Choate, in "The Story of Christine Rochefort," the scene of which is laid in Blois in our own times. The book preserves throughout not alone its interest, but the elevated tone which is its most attractive characteristic. "The Doctor, his Wife, and the Clock" and "Doctor Izard" belonged to Anna Katharine Green (Mrs. Charles Rohlfs). A local flavor attaches to "Miss Cherry-Blossom of Tôkyô," by John Luther Long, and "The Panglima Muda," a romance of Malaya, by Rounseville Wildman. "The Princess Sonia," by Julia Magruder, was a pretty romance of the Latin quarter. "Notes of a Professional Exile," by E. S. Nadal, analyze the character and foibles of the American woman abroad. "In the Land of the Sunrise" was the story of a Japanese family and the wonderful

land they live in, written by Robert N. Barrett with the object of awakening interest in missionary labor, while "The Land of the Sun (Vistas Mexicanas)," by Christian Reid (Mrs. Frances C. Fisher Tiernan), under the form of a story, gives a vivid impression of travels in that republic. "Wild Rose," by Francis Francis, was a tale of the Mexican frontier, and "Mercedes: A Story of Mexico," by Sarah Hale, inveighed strongly against the methods of the Catholic Church in that country, and "Through Forest and Plain: A Tale of Flowers and Filibusters," by Ashmore Russan and Frederick Boyle, and "Under the Lone Star," a story of the revolution in Nicaragua, by Herbert Hayens, are akin in theme—viz., the expedition of William Walker. "Sinners Twain" and "The Devil's Playground," by John Mackie, were romances of the Canadian northwest, and, returning to our own country, we have "Lisbeth Wilson: A Daughter of New Hampshire Hills," by Mrs. Eliza Nelson Blair, the wife of Senator W. H. Blair, who appears for the first time in the literary world with this sweet and simple story. From Alice Brown we have "Meadow Grass," 5 tales of New England life; from Dane Conyngham, "Eunice Quince," a New England romance; from Henrietta G. Rowe, "Queens-Hithe," quaintly named from an old English custom; from Christopher Craigie, "An Old Man's Romance"; from William Whittemore Tufts, "A Market for an Impulse"; from Francis H. Underwood, "Doctor Gray's Quest"; from Emory J. Haynes, "A Farmhouse Cobweb," a tale of rural life in Vermont in the war time; from Augusta Campbell Watson, "Off Lynnport Light"; from Anne Kendrick Benedict, "An Island Story"; and from George Wharton Edwards, "The Rivalries of Long and Short Codiac," 10 short stories of the coast of Maine, illustrated by himself. "The Keys of Fate," by Herman Shores, also has its scene laid in New England, and deals with current questions of reform. "Four Girls at Cottage City" had their adventures narrated by Emma D. Kelley Hawkins, and Bliss Perry described a Connecticut town as "The Plated City." "Doctor Hathern's Daughters" was a story of Virginia by Mrs. Mary J. Holmes; "A Girl's Life in Virginia before the War," by Letitia M. Burwell, was illustrated by W. A. McCullough and Jules Turcas; and "Christmas Week at Bigler's Mill" was, according to Dora E. W. Spratt, a sketch in black and white. James Lane Allen published "Aftermath," Part II of "A Kentucky Cardinal," and "Young Greer of Kentucky" was the title of a novel by Eleanor T. Kinkaid. "The Heart of Old Hickory, and Other Stories of Tennessee," by Miss Will Allen Dromgoole, had a preface by B. O. Flower, and "A Little Sister to the Wilderness," by Lillian Bell, told of life among the poor whites of West Tennessee. Opie P. Read (Arkansas Traveler) located a romance "On the Suwanee River," and North Carolina was the scene of "Jack O'Doon," by Maria Beale, as Texas in the war time was that of "Under the Man-Fig," by Mrs. M. E. M. Davis. "Mammy Mystic," by M. G. McClelland, and "Beatrice of Bayou Têche," by Alice Ilgenfritz, have for *motif* the existence of African blood in their respective heroines, and the race problem of the South is discussed in "The Sons of Ham," by Louis Pendleton, who published also "Corona of the Nantahalas." "The Hand of Fate" was a romance of the navy, by Kate Lilly Blue, and rural life in Arkansas formed the background of "Beholding as in a Glass," by Mrs. Virginia D. Young. "Stories of the Foothills" of Southern California, by Mrs. Margaret Collier Graham, were collected into a volume, and the same country is the scene of "Go Forth and Find," by Thomas H. Brainerd. "Cension: A Sketch from Paso del Norte," by Maude Mason Austin, appeared in "Harper's Little Novels," and Louis B. France led his readers with interest "Over the Old Trail" to a Colorado mining camp. "The Company Doctor," by Henry E. Rood, pointed out the dangers resulting on unrestricted emigration as exemplified in the coal



regions of Pennsylvania, which are the scene also of "On a False Charge," by Seward W. Hopkins; and Boveridge Hill made a plea for free silver in "The Story of a Cañon." Demonetization of silver and its alleged attendant evils were the theme of "A Tale of Two Nations," by William H. Harvey. Eugene F. Baldwin and Maurice Eisenberg wrote "Doctor Carrallo," in the interest of toleration for the Jews. "Lady Olivia," by W. C. Falkner, carries the reader back to days before the Revolution; H. C. Chatfield Taylor published "Two Women and a Fool." New York life is portrayed in "The Manhattaners," by Edward S. Van Zile; "His Father's Son," by James Brander Matthews; and "Dolly Dillenbeck," by James L. Ford, who was also the author of "Bohemia Invaded, and Other Stories." Historical works of fiction were: "The Story of the Other Wise Man," by Henry Van Dyke; "Hadassah; or, Esther, Queen to Ahashuerus," by Mrs. T. F. Black, in the "Golden Rod Edition," and "Dervorgilla; or, The Downfall of Ireland," by Anna C. Seanlan, completed and revised by Charles M. Seanlan. "In Defiance of the King" was a successful romance of the American Revolution by Chauncey C. Hotchkiss; "The Head of a Hundred," by Maude Wilder Goodwin, the author of "The Colonial Cavalier," contained an account of certain passages in the life of Humpfrey Huntoon, "sometime an officer in the Colony of Virginia," and "Daughters of the Revolution and their Times, 1769-1776," was yet another historical romance, by Charles Carleton Coffin. An episode of the civil war was chosen by Stephen Crane for the theme of his spirited novel "The Red Badge of Courage," and two other war stories were "Jack Alden: A Story of Adventure in the Virginia Campaigns, '61-'65," by Warren Lee Goss, and "Under the War Flags of 1861," a romance of the South, by William Lowndes Piekard. Joan of Arc formed the theme of "The Shield of the Fleur de Lis," by Constance Goddard Du Bois, who published also "A Modern Pagan." Other stories with a French setting were: "The Friend of the People," by Mary C. Roswell, a tale of the reign of terror; "Idwymon," a story of Napoleonic complications, Orleans and Bourbonic entanglements, by Frederick A. Randle; and "Courtship by Command," a story of Napoleon at play, by M. M. Blake. "The American in Paris," was a biographical novel of the Franco-Prussian War, the siege and the Commune of Paris, from an American standpoint, by Eugene Coleman Savidge, and yet again we have "The Red Republic: A Romance of the Commune," by Robert W. Chambers. "Doty Donteare," a story of the garden of the Antilles, by Mary Farrington Foster, had an introduction by Prof. Elliott Coues. From Archibald Clavering Gunter we had two books, "The First of the English" and "The Ladies' Juggernaut"; J. A. Mitchell chose an unusual theme for his first novel, "Amos Judd," and two novels with a foreign setting were "A Norse Idyl," by Calvin Gale Horne, and "Diplomatic Disenchantment," by Mrs. Edith Bigelow. Carlisle B. Holding described "An Odd Fellow," as Julian Starr did "The Disagreeable Woman," and Frances E. Russell "A Quaint Spinster." "The Veiled Doctor" was the title of a strong, if gruesome, story by Varina Anne Jefferson Davis, a daughter of the late President of the Confederate States. Music was the theme of "Miss Träumerei: A Weimar Idyl," by Albert Morris Bagby, and "The Minor Chord," a story of a prima donna, by J. Mitchell Chapple. Mrs. Reginald de Koven wrote "A Sawdust Doll"; C. E. Francis, "Every Day's News"; Clement Wilkes, "Sidney Forrester"; Mrs. Katharine S. Macquoid, "Berris"; Mary Harriott Norris, "Lakewood"; Mrs. Julia Colilton Flewellyn, "Hill-Crest"; Mrs. Evelyn H. Raymond, "The Mushroom Cave"; George Herbert Bartlett, "Water Tramps; or, The Cruise of the Seabird"; Mrs. Lida Ostrom Venamee, "Two Women; or, Over the Hills and Far Away"; and Amy E. Blanchard, "Girls Together." "The Master Knot, and 'Another Story,'" by Conover Duff, appeared in the "Buckram Series"; and Jean Forsyth, told of "The Making of Mary." Jessie Van Zilo Belden met "Fate at the Door," and Ethel Davis found something left after all "When Love is done." Blanche Fearing told the story of "Roberta." "The Lady and her Tree," by Charles Stokes Wayne, was professedly a story of society; as was "Frane Elliott: A Story of Society and Bohemia," by Clarence H. New. H. S. Wells described "The Time Machine: An Invention." "The Young Reporter: A Story of Printing-House Square," by William Drysdale, came out in the "Brain and Brawn Series"; Mabel Henshaw Ward published "The Diary of an Old Maid," Francis Tillou Buek settled the affairs of "A Man of Two Minds," and "Miss Jerry," by Alexander Black, proved interesting as expanded from a reading into a novel. "His Way and Hers," by W. A. Robinson; "Three-and-Twenty," by Mrs. Nataniel Conklin (Jennie M. Drinkwater); "The House of Hollister," by Fanny E. Newberry; and "Almost a Genius," by Adelaide L. Rouse, were all helpful in tone. Elizabeth Knight Tompkins attempted the social problems in "Her Majesty," a romance of to-day. William H. Bishop solved the labor question to his satisfaction in "The Garden of Eden, U. S. A.," and a strike is described with effect in "Men Born Equal," by Harry Perry Robinson. "An Experiment in Altruism" was by Elizabeth Hastings (Margaret Pollock Sherwood). "A Street in Suburbia," by Edwin W. Pugh, "The Human Drift," by King C. Gillette, and "Altruria," by Titus K. Smith, deal also with social questions, and "A Modern Despotism," by Marcus Peterson, claimed to be a true story of American political life in 1893. "A Daughter of the Tenements," by Edward W. Townsend, the successful author of "Cibimmie Fadden," was illustrated by E. W. Kemble, and from Alvan Francis Sanborn we had "Moody's Lodging-House and Other Tenement Sketches." "Doctor Judas," by William Rosser Cobbe, was intended as a portrayal of the opium habit, and "A Voice in the Wilderness," by Maria Weed, also protested against it. "At Last," by Mrs. Maria E. Lauder, was written from the W. C. T. U. standpoint. Frances Campbell Sparhawk again made a plea for the Indian in "Senator Intrigue and Inspector Noseby: A Tale of Spoils." "A Minister of the World," by Caroline Atwater Mason, "A Great Appointment," by Myra Goodwin Plantz, "The Rev. John Henry," by Percival R. Benson, and "One Woman's Story," by Ellen A. Lutz, were religious in tone; "What I told Doreas," by Mary E. Ireland, was intended for mission workers; and "Zeinab, the Panjabi," by E. M. Wherry, D. D., claimed to be founded on facts. "Etelings from a Parsonage Veranda" we owe to Mrs. E. Jeffers Graham. "The Fisherman's Daughter," by Anne Kendrick Benedict, "Five Stars in a Little Pool," by Edith Carrington, and "A Waif—A Prince," by Rev. W. T. Andrews, were written with a motive, as was also "After which all Things," by George W. Warder. Among books written for amusement merely, and with no attempt at edification, are to be mentioned "Patricia," a sequel to "Two Bad Brown Eyes," by Marie St. Felix; "The Rise of Mrs. Simpson," by Robert Appleton (Roman I. Zubof); "A Title Rejected," by Octavia Clouston; "A Modern Pharisee," by Edward De Brosé; "Sarah Martha in Paris," by Saidee Bourgoin; "Campaigns of Curiosity," an account of the journalistic adventures of an American girl in London, by Elizabeth L. Banks; "Paul St. Paul," by Ruby Beryl Kyle; "The Last of the Danvers," by Edward Lyman Bill; and Albert Ross's two books, "Out of Wedlock" and "A Black Adonis." Richard Henry Savage was prolific as ever, publishing "Miss Devereux of the Mariquita," a story of bonanza days in Nevada; "A Daughter of Judas," a *fin de siècle* tale of New York city life; and "In the Old Chateau," a story of Russian Poland. Hallie Erminie Rives, a cousin of Amélie Rives, contributed "A Fool in Spots." "The Strange Disappearance of Eugene Comstock," by Mrs. Mary R. P. Hateb, and



"Caught: A Romance of Three Days," by George Douglas Tallman, were both detective stories; "A Social Highwayman" was the hero of Elizabeth Phipps Train, and "Ronbar," by R. S. Dement, advanced opinions and facts connected with the free coinage of silver. William Gill told of "The Woman Who Didn't" and William C. Hudson (Barclay North) asked "Should She have left Him?" "Storn King" was a story of want and wealth which involved the invention of an air ship, and another improbable story was "Thomas Boobig," by Luther Marshall. "The Mystery of Evelin Delorme" was a hypnotic story by Albert Bigelow Paine; spiritualism was the answer to "Pilate's Query," according to S. C. Clark; and theosophy was responsible for "Etidorpha; or, The End of Earth," by Llewellyn Drury and John Uri Lloyd, a handsomely illustrated volume of philosophical fiction; as well as for "The Double Man," by F. B. Dowd, "The Hidden Faith," by Alwyn M. Thurber, and "In the Sanctuary," by A. Van der Naillen. Psychic science was touched upon in "Zaphra," by John P. Stockton, and "Brother of the Third Degree," by Wm. L. Garver, must close the list of works of the kind. "A Savage of Civilization" was published anonymously; Wilbertine Teters entitled her novel "The Snows of Yesteryear"; and in the "Enterprise Series" we had "The Adventures of Uncle Jeremiah in the South," by C. M. Stevens; and "An Appalling Passion," by Steele Mackaye.

Volumes of short stories not previously mentioned were: "Foam of the Sea, and Other Stories," by Gertrude Hall; "A Mad Madonna, and Other Stories," by L. Clarkson Whitelock; "Yarns," by Alice Turner; "Old Man Savarin, and Other Stories," by Edward W. Thompson; "The Old Settler, the Squire, and Little Pelog," by Edward Mott; "Bunch-Grass Stories," by Mrs. Lindon W. Bates; "College Girls," by Abbe Carter Goodloe; "The Nimble Dollar; with Other Stories," by Charles Miner Thompson; "Tales of an Engineer," with rhymes of the road, by Cyrus Warman; "A Man without a Memory, and Other Stories," by W. H. Shelton; "Tenement Tales of New York," by J. W. Sullivan; "People we Pass," life among the masses of New York city, by Julian Ralph; "Princeton Stories," by Jesse Lynch Williams; "Yale Yarns," by John Seymour Wood; "A Cumberland Vendetta, and Other Stories," by J. Fox, Jr.; "Aunt Billy, and Other Sketches," by Alyn Yates Keith (Mrs. Eugenia L. Morris), the author of "A Hilltop Summer"; "Hippolite and Golden-Beak: Two Stories," by George Bassett, in the series of "Harper's American Story-Tellers"; "An Accidental Romance," by William Sidney Rossiter; "The Bachelor's Christmas, and Other Stories," by Robert Grant; "Red Men and White," by Owen Wister; "A Truce, and Other Stories," by Mrs. Mary Tappan Wright; "The Face and the Mask," by Robert Barr; "Kitwyk Stories," of Holland, by Anna Eichberg King; "Me an' Methuselah, and Other Episodes," by Harriet Ford; "Legends of Fire Island Beach and the South Side," by Edward R. Shaw; and "From Dixie to Canada," romances and realities of the underground railroad, by H. U. Johnson. An edition of Cooper's novels, known as the "Mohawk Edition," was published during the year, in 32 volumes; and Thomas Nelson Page's "Uncle Edinburg" was made into a holiday volume, uniform with "Marse Chan" and "Meh Lady," and illustrated by B. W. Clinedinst. William McCrillis Griswold published "A Descriptive List of Novels and Tales dealing with the History of North America"; Part I of a similar volume covering ancient history; "A Descriptive List of Books for the Young"; and a new enlarged edition of "A Descriptive List of International Novels."

**Fine Arts.**—In summing up the literature of art for the year we find fundamentals treated in "Æsthetic Principles," by Henry Rutgers Marshall, the author of "Pain, Pleasure, and Æsthetics"; George Lansing Raymond considered "Painting, Sculpture, and Architecture as Representative Arts" in a profusely illustrated volume, which he termed in subtitle an essay

in comparative æsthetics, and which follows out the principles laid down in "Art and Theory," published by him last year, as applied to the arts of sight. Two other essays on "Rhythm and Harmony in Poetry and Music" and "Music as a Representative Art," also from his pen, were bound in one volume. John La Farge published lectures given by him at the Metropolitan Museum of New York, under the title of "Lectures on Art, Considerations on Painting"; and John C. Van Dyke was an authority upon "Old Dutch and Flemish Masters," the engravings of which (30 in number) were the work of Timothy Cole, from the original paintings, and were collected from the "Century Magazine," in which they have appeared during the last three years. The book was intended as a companion volume to "Old Italian Masters." Frank Preston Stearns treated of "The Midsummer of Italian Art," and William Ordway Partridge of the "Technique of Sculpture." "A Cyclopædia of Architecture in Italy, Greece, and the Levant," edited by William P. Longfellow, was a sumptuous quarto, abounding in illustrations, which represented the labor of years in preparation, and was issued in uniform style with the "Cyclopædia of Painters and Painting" and "Cyclopædia of Music and Musicians." William Winter brought out a third series of "Shadows of the Stage," and Charles E. L. Wingate dealt with "Shakespeare's Heroines on the Stage." S. S. Curry published Course I of "Lessons in Vocal Expression," given to "Principles of Thinking in the Modulation of the Voice." John H. Rosewald compiled "The Musician's Leisure Hour," full of facts and fancies of interest to the music lover, and Margaret Reintzel arranged "The Musician's Year-book." Anna Siedenburgh gave instruction in the different kinds of "Glass Painting," and Mrs. Flora E. Haines published "A Ceramic Study" of half a dozen dinner plates. Aimée Osborne Moore made "Studies in the Science of Drawing in Art." James Brander Matthews contributed "Bookbinding, Old and New: Notes of a Book Lover" to the "Ex-Libris Series." Foremost among illustrated works is to be mentioned "The Abbey Shakespeare," or, more properly, "The Comedies of Shakespeare," in 4 volumes, containing 181 full-page photogravure reproductions of drawings by Edwin A. Abbey; and from another publisher we had reproductions of "The Quest of the Holy Grail," a series of paintings done by the same artist for the decoration of the delivery room in the Boston Free Public Library, with descriptive text. Gilbert White's "Natural History of Selborne" was brought out in a handsome holiday form in 2 volumes, illustrated by Clifton Johnson, and furnished with an introduction by John Burroughs, who, with the artist, visited the quaint little Hampshire village in order that the part of each might be performed satisfactorily. Another beautiful book of American manufacture was Edmund H. Garrett's "Victorian Songs," a companion volume to his "Elizabethan Songs." "Joseph Jefferson's 'Rip Van Winkle'" was illustrated with drawings and photogravures; 5 from paintings of the actor himself; and yet other gift books were "Dames of High Degree," by Thomson Willing, portraits of beautiful women by old English masters; "A Cluster of Gems," selections of poems, edited by Volney Streamer, with facsimiles of water-color paintings by Ellen G. Emmet; "Facsimiles of Water Colors," by W. Granville Smith; and "Fair Women of To-day," previously unpublished poems by Samuel Minturn Peck, illustrated with facsimiles of paintings in water color by Caroline C. Lovell. Irving's "Tales of a Traveler" were issued in 2 volumes of the "Buckthorne Edition," uniform with "The Alhambra" and "Sketch Book." Frederick Remington furnished 22 full-page illustrations for "The Song of Hiawatha," and Mrs. Jane G. Austin's "Standish of Standish" received artistic treatment at the hands of F. T. Merrill. Scott's "Rob Roy," "The Betrothed," and "The Talisman," and De Amicis's "Spain and the Spaniards" were made into superb volumes.



**General Science.**—Works falling under this head were, as usual, largely of a popular character. Among the first in point of interest is to be mentioned "Domesticated Animals: Their Relation to Man and to his Advancement in Civilization," by Prof. Nathaniel Southgate Shaler, illustrated by such famous artists as Delort, of Paris, who drew the horses; Hermann Léon, the dogs; Edwin Lord Weeks, the beasts of burden; and Ernest E. Thompson, the Canadian ornithologist, the birds. Rush Shippen Hindekoper, M. D., made a study of "The Cat." "Elementary Lessons in Zoölogy," by James G. Needham, was intended as a guide in studying animal life and structure in field and laboratory, and Margaretta Burnet prepared a "Zoölogy for High Schools and Academies." "Geological Biology," by Henry Shaler Williams, proved no less interesting to the general reader than to the students in universities and colleges, and David Starr Jordan published under the title of "The Factors in Organic Evolution" a syllabus of a course of elementary lectures delivered in Leland Stanford, Junior, University. Biological lectures delivered at the Marine Biological Laboratory of Wood's Holl in the summer session of 1894 were collected into a volume and an outline of the forms and probable relationships of "Fishes Living and Fossil," illustrated by the author, Bashford Dean, appeared in the "Columbia University Biological Series," edited by Henry F. O. Da Costa. Parts IX, X, XI, and XII of the second volume of H. Nehrling's "North American Birds" were issued; "Birdcraft," by Mabel Osgood Wright, was a handbook of 200 song, game, and water birds, with numerous full-page plates; Frank M. Chapman wrote a "Handbook of Birds of Eastern North America"; and Dan Giraud Elliot "North American Shore Birds," a reference book for the naturalist, sportsman, and lover of birds. Prof. M. A. Willcox supplied a "Pocket Guide to the Common Land Birds of New England," and a new edition of Henry D. Minot's "Land Birds and Game Birds of New England" was published, edited by William Brewster. Prof. John Henry Comstock and Anna Botsford were joint authors of "A Manual for the Study of Insects." "Frail Children of the Air," as Samuel Hubbard Scudder entitled his excursions into the world of butterflies, consisted of selections for the general reader from his costly work upon the "Butterflies of the Eastern United States and Canada." Parts XV and XVI of W. H. Edwards's third series of "The Butterflies of North America" appeared, and yet two other useful little books were "The Night Moths of New England" and "The Day Butterflies and Dusk-flyers of New England," by Edward Knobel. Vol. VII of "The Silva of North America," by Charles Sprague Sargent, was issued, devoted to "Cupuliferæ." Emily L. Gregory set down the "Elements of Plant Anatomy," and D. T. Macdougall treated of "Experimental Plant Physiology" for American students. William Hamilton Gibson not only told of "Our Edible Toadstools, and How to Distinguish them," but illustrated the selection of 30 native food varieties with many full-page colored plates and 57 drawings in black and white. "Wild Flowers of the Northeastern States" were drawn and described from life by Ellen Miller and Margaret Christine Whiting, and a new revised and enlarged edition was issued of Mrs. Frances Theodora Dana's "How to know the Wild Flowers," to which 52 new plates were added and descriptions of 60 additional flowers. "Familiar Flowers of Field and Garden" were described and illustrated by F. Schuyler Matthews; Edward Knobel furnished "A Guide to find the Names of all Wild-growing Trees and Shrubs of New England by their Leaves," and another for the determination of "Ferns and Evergreens of New England." The relations existing between "Ten New England Blossoms and their Insect Visitors" were traced in a dainty volume from Prof. Clarence Moores Weed, and W. Whitman Bailey was at home "Among Rhode Island Wild Flowers." S. C. Young illustrated with many photogravures from the living

plant "All of Nature's Fashions in Lady's-Slippers for the Northern and Eastern Parts of the United States." In astronomy we have a handsome volume upon "Mars," by Percival Lovell, the result of a special study of that planet from an observatory at Flagstaff, Arizona, erected for the purpose during the last opposition; "The Source and Mode of Solar Energy throughout the Universe," by I. W. Heysinger, M. D., and "Studies in Spherical and Practical Astronomy," by George C. Comstock, the last a bulletin in the "University of Wisconsin Science Series." "Meteorology" was the subject of a volume by Thomas Russell. "Minerals and how to Study them" was a book for beginners in mineralogy by Edward Salisbury Dana, and Alfred J. Moses and Charles Lathrop Parsons were joint authors of "Elements of Mineralogy, Crystallography, and Blowpipe Analysis" from a practical standpoint. William Herbert Hobbs made "A Contribution to the Mineralogy of Wisconsin" in the bulletins published by the University of that State, and a monograph upon "The Constitution of the Silicates," by Prof. Frank W. Clark of the United States Geological Survey was sent out by the Government Printing Office. From John H. Long appeared "An Elementary Course in Experimental and Analytical Chemistry"; Ira Remsen and Wyatt W. Randall published "Chemical Experiments prepared to accompany Remsen's 'Introduction to the Study of Chemistry'"; a "Laboratory Manual of Inorganic Preparations," by H. T. Vulture and George M. S. Neustadt, was designed to meet a long-felt want in training the student to prepare and test his own reagents; E. W. Morley added a monograph "On the Densities of Oxygen and Hydrogen and on the Ratio of their Atomic Weights" to the "Smithsonian Contributions to Knowledge"; and a "Manual of Home-made Apparatus, with Reference to Chemistry, Physics, and Physiology" was a small but helpful publication by John F. Woodhull. "The Principles of Physics" were set forth by Alfred P. Gage in an entirely new work; S. P. Meads arranged "Elements of Physics for Use in Secondary Schools"; Part I of "Physics for University Students," by Henry S. Carhart, covered "Mechanics, Sound, and Light." Vol. III of "The Elementary Principles of Mechanics," by A. J. Du Bois, was devoted to "Kinetics"; A. D. Risteen treated of "Molecules and the Molecular Theory of Matter" in a popular manner; and Robert Stevenson in "Elasticity a Mode of Motion" gave a popular description of a new discovery in science. Two volumes contained the "Fourteenth Annual Report of the United States Geological Survey" for the year 1892-'93 by the then director, J. W. Powell, and from the same distinguished authority we have 3 small brochures, published in the series of "National Geographic Monographs," into which he has condensed the results of a lifetime of study and exploration. These are respectively "Physiographic Regions of the United States," "Physiographic Processes," and "Physiographic Features," the two last illustrated. To the same series Prof. G. K. Gilbert contributed "Niagara Falls and their History"; Prof. Nathaniel S. Shaler, "Beaches and Tidal Marshes of the Atlantic Coast"; William Morris Davis, "The Physical Geography of Southern New England"; C. Willard Hayes, "The Southern Appalachians"; and Israel Clark Russell, "Present and Extinct Lakes of Nevada." From the last-mentioned author we had also a volume upon "Lakes of North America," intended as a reading lesson for students of geography and geology. Prof. R. S. Woodward prepared the "Smithsonian Geographical Tables," the second volume of the new series of valuable tables issued by that institution. In ethnology we have "A Primer of Mayan Hieroglyphics," by Dr. Daniel G. Brinton, in the "Publications of the University of Pennsylvania," and "Notes on the Ethnology of Tibet," by William Woodville Rockhill, taken from the "Report of the United States National Museum." "The Origins of Invention," a study of industry among primitive peoples, by Prof. Otis T. Mason, appeared in the "Contemporary Sci-



ence Series." "Some First Steps in Human Progress" were traced by Frederick Starr, who also contributed an introduction to "The Beginnings of Writing," by Walter J. Hoffman, M. D., in the "Anthropological Series."

To mental philosophy there were some important additions, notably "Philosophy of Mind," an essay in the metaphysics of psychology, by George Trumbull Ladd, and "Mental Development in the Child and the Race," the methods and processes of which were traced by Prof. James Mark Baldwin. "Thinking, Feeling, Doing," by Dr. E. W. Scripture, Director of the Psychological Laboratory in Yale University, is, it is claimed, "the first book on the new or experimental psychology written in the English language," and contains over 200 illustrations. "The Growth of the Brain," a study of the nervous system in relation to education, was contributed by Prof. Henry Herbert Donaldson to the "Contemporary Science Series"; a second edition was issued of "The Psychology of Childhood," by Frederick Tracy; and an introduction to the study of mental phenomena was offered by E. A. Kirkpatrick under the title of "Inductive Psychology." "The Unity of Fichte's Doctrine of Knowledge," by Anna Boynton Thompson, one of the "Radcliffe College Monographs," had an introduction by Josiah Royce; "Comte, Mill, and Spencer," by Prof. John Watson (Canada), was presented as an outline of philosophy according to the tenets of the idealistic school; C. C. Post published "Metaphysical Essays"; "Elements of Inductive Logic" were treated by Prof. Noah K. Davis in a companion volume to his "Elements of Deductive Logic"; and in mathematics we have "Elements of Descriptive Geometry," by C. W. MacCord, with applications to isometrical and cavalier projection; "Elements of Geometry, Plain and Solid," by John Macnie, edited by Emerson E. White; "Problems of Differential Calculus Supplementary to a Treatise on Differential Calculus," by W. E. Byerly; and "An Experimental Study of Field Methods, which will insure to Stadia Measurements greatly Increased Accuracy," a thesis for the degree of civil engineer submitted to the University of Wisconsin by Leonard Sewal Smith. Park Benjamin wrote a history of "The Intellectual Rise in Electricity"; Francis E. Nipher, "Electricity and Magnetism," a mathematical treatise for advanced undergraduate students; Arthur Vaughan Abbott, "The Electrical Transmission of Energy," a manual for the design of electrical circuits; H. T. Parshall and H. M. Hobart described "Armature Windings of Electric Machines"; Edward Trevert contributed "Electricity for Students"; Philip Atkinson "Electricity for Everybody"; D. E. Connor "A Treatise on Electro-magnetism"; and A. E. Watson told "How to build a Fifty-Light Dynamo or Four Horse-Power Motor."

**History.**—Brooks Adams covered the whole field of the philosophy of history in "The Law of Civilization and Decay." Vol. IV appeared of "A History of the People of the United States from the Revolution to the Civil War," by John Bach McMaster, devoted largely to the War of 1812, and Vol. III was also issued of James Ford Rhodes's "History of the United States from the Compromise of 1850," covering the period of 1860-'62. "The Making of the Nation, 1783-1817" was traced by Gen. Francis A. Walker in the "American History Series," and "The Mississippi Basin," by Justin Winsor, carried on the struggle in America between England and France from 1697 to 1763, with full cartographical illustrations from contemporary sources. "The Campaign of Trenton, 1776-'77" was commemorated by Samuel Adams Drake in the series of "Decisive Events in American History," and Henry Ferguson contributed "Essays in American History." "The Growth of the American Nation," by Harry Pratt Judson, belonged to the "Chautauqua Reading Circle Literature"; Harlow Godard prepared "An Outline Study of United States History"; Mrs. Susan Pendleton Lee wrote "A School History of the United States," to which

Louise Manly contributed questions and summaries for reviews and essays; Dr. Oscar H. Cooper, in collaboration with Harry F. Estill and Leonard Lemon, prepared a "History of Our Country," also a text-book for schools, written from a Southern point of view, but without sectional prejudice; and William H. Mace was the author of "A Working Manual of American History for Teachers and Students." "Turning on the Light: A Dispassionate Survey of President Buchanan's Administration from 1860 to its Close," by Hon. Horatio King, is in reality a defense of that Executive against the charge of treason in his relations to the Southern States; Noah Brooks pictured "Washington in Lincoln's Time," from personal recollection and scrapbooks kept during that period. A new enlarged edition was issued of the two volumes published by the Massachusetts Military Historical Society, covering respectively "Campaigns in Virginia, 1861-1862" and "The Campaign of 1862 under General Pope." A new limited edition also appeared of "Ohio in the War," by Whitelaw Reid, and J. T. Scharf's "History of the Confederate States Navy" went through a second edition. In the "Johns Hopkins University Studies" "The Provisional Government of Maryland (1774-1777)" was treated by John Archer Silver; "Government of the Colony of South Carolina," by Edson L. Whitney; "The Early Relations between Maryland and Virginia," by John H. Latané, "Is History Past Politics?" by Herbert B. Adams, being included in the volume; "White Servitude in the Colony of Virginia," by James Curtis Ballagh; "The Genesis of California's First Constitution (1846-'49)," by Roekwell Dennis Hunt; and "The International Beginnings of the Congo Free State," by Jesse Siddall Reeves. "Europe in Africa in the Nineteenth Century" was the theme of Elizabeth Wormeley Latimer. The "Mutiny of the Bounty and Story of Pitcairn Island, 1790-1894" was written by Rosalind Amelia Young, a descendant of one of the mutineers and a native of the island. "Arcadia: Missing Links of a Lost Chapter in American History," by Edward Richard (An Arcadian), filled two volumes; "The Story of the Indian," by George Bird Grinnell initiated the "Story of the West Series," edited by Ripley Hitchcock; and Alexander Scott Withers's "Chronicles of Border Warfare," first published in 1831, were edited with annotations by Reuben Gold Thwaites. Anna L. Bicknell told from personal observation of "Life in the Tuileries under the Second Empire," having been for nine years a governess in the family of the Duchesse de la Pagerie. "Brief Outlines in European History" was a syllabus designed for the use of students in history, by Earle Wilbur Dow, and a valuable contribution was made by Prof. Philip Van Ness Myers in "A History of Greece for Colleges and High Schools." Mrs. Mary Parmele gave a brief historical sketch of England, entitled "The Evolution of an Empire"; Henry M. Baird concluded the historical series begun by him with the "Rise of the Huguenots" and the "Huguenots and Henry of Navarre," with 2 volumes upon "The Huguenots and the Revocation of the Edict of Nantes"; Frances Gregor told "The Story of Bohemia"; "The Jew and the German; or, From Paul to Luther" was an historical study by Franke Kelford; while Edward S. Holden chronicled "The Mogul Emperor of Hindustan, A. D. 1598-A. D. 1707." H. J. Desmond revived "Mooted Questions of History." The issue of Vols. IV and V completed "History for Ready Reference from the Best Historians, Biographers, and Specialists," by Josephus Nelson Larned, and from Prof. J. Franklin Jameson we had a "Dictionary of United States History, 1492-1895." "New York City and Vicinity during the War of 1812-'15" was a military, civic, and financial local history of that period, with incidents and anecdotes, in 2 volumes, by R. S. Guernsey, and "A History of the City of Brooklyn and Kings County," by Stephen M. Ostrander, also in 2 volumes, was edited with an introduction and notes by Alexander Black. "Municipal Consolidation: Historical Sketch of the Greater New



York," by Albert E. Henschel, was brief and popular in form, and presented the views of the author, who was Secretary of the Municipal Consolidation Inquiry Commission. Part I appeared of the first number of "The Lower Norfolk County Virginia Antiquary," edited by Edward W. James. A tiny useful volume was "A Pocket History of the Presidents and Information about the United States," compiled by Thomas Rand. Vol. I of the first series of "Official Records of the Union and Confederate Navies in the War of the Rebellion," published under the direction of the Secretary of War, covered "The Operations of the Cruisers from Jan. 19, 1861, to Dec. 31, 1862."

**Housekeeping.**—As usual, but few works are to be mentioned as falling under this department. Foremost among them, however, is "The Century Cookbook," by Mary Ronald, which not only contained directions for every-day needs, but covered the etiquette of entertainments, decorations for the same, etc., the illustrations being from photographs. Mrs. Charles H. Gibson was the author of "The Maryland and Virginia Cookbook," and "The Little Epicure" contained 700 choice receipts, each accompanied by the price of the materials employed. "The Murrey Collection of Cookery Books," by Thomas J. Murrey, originally published separately, were collected into one volume, and a new revised edition appeared of the "Complete Housekeeper," by Mrs. E. R. Parker. "European and American Cuisine," emanated from Gesine Lemecke, author of "Desserts and Salads," and principal of the Brooklyn Cooking College.

**Jurisprudence.**—"A Treatise upon Some of the General Principles of the Law," in 7 volumes, by Charles T. Boone, was intended as a supplement to Wait's "Actions and Defenses," and from the same author appeared a "Text-book of Law and Practice," for students and young practitioners, in the form of questions and answers. Edwin E. Bryant published "The Outlines of Law"; a second edition was issued of Isaac Franklin Russell's "Outline Study of Law," and a tenth edition of Timothy Walker's "Introduction to American Law" was revised by Clementt Bates. Lawrence O. Murray and Charles E. Riordon collaborated upon the "Student's Review of Law and Equity." William A. Alderson prepared "A Practical Treatise upon the Law of Judicial Writs and Process in Civil and Criminal Cases," and a second edition of Benjamin J. Shipman's "Handbook of Common Law Pleading" was made an issue of the "Hornbook Series." "Pleadings and Forms," by Charles Hogg, was a practical treatise on the system of common-law pleading supplemented with numerous precedents and declarations, pleas, replications, and court orders now in use in the State of West Virginia, while "The Principles of Argumentation" were laid down broadly by George Pierce Baker. Three volumes of an "Encyclopædia of Pleading and Practice," compiled under the editorial supervision of William M. McKinney, were issued, the last covering from attachment to certified cases; "Lectures on Law," delivered by Judge Arthur MacArthur before the Spencerian Business College of Washington, D. C., were collected into a volume, and a second edition was issued of the "Examination Compend for Law Students" of the District of Columbia. A "Handbook of American Constitutional Law," by Henry Campbell Black, was issued in the "Hornbook Series"; James Bradley Thayer published Parts III and IV of "Cases on Constitutional Law," and for the use of students William C. Sprague prepared "Quizzer, No. 5," and Earl P. Hopkins "Problems and Quiz on American Constitutional Law." "Modern Equity," by Charles Fisk Beach, Jr., filled 2 volumes, and from Norman Fetter came a "Handbook of Equity Jurisprudence," in the "Hornbook Series," and "Illustrative Cases upon Equity Jurisprudence." Another volume bearing the same title as the last was selected (largely from it) by Prof. H. B. Hutchins. Two volumes contained "A Treatise on Equity Practice in Pennsylvania," by F. Carroll Brewster, and Vol. I was sent to press of "Equity in Pennsylvania," by Ellis Ames Ballard.

"The Principles of Equity and Equity Pleading," by Elias Merwin, was edited by H. C. Merwin, and "A Review in Law and Equity for Law Students" was a useful handbook by George E. Gardner. Earl P. Hopkins again contributed "Problems and Quiz on Equity Jurisprudence." From Austin Abbott came "Select Cases on the Law of Evidence as applied during the Examination of Witnesses," with notes, and a second enlarged edition was issued of his "Select Cases on Code Pleading." "Ohio Decisions on Evidence" were collected by Seymour Cunningham, "The Law and Principles of Evidence" were illustrated by questions and answers by Peter F. Smith, and R. C. Minor drew up an "Analytical Abstract of Greenleaf on Evidence and Prof. Gilmore's Notes on Greenleaf." Vol. I of the fourth edition of "New Criminal Procedure," by Joel Prentiss Bishop, "being a new work based on former editions," was complete in itself, and was entitled "General and Elementary." A second edition, revised and enlarged, was published of "A Practical Treatise on Criminal Law and Procedure in Criminal Cases," by John H. Gillett; "Selected Cases on Criminal Law" were annotated and arranged by William L. Clark, Jr., with reference to "Clark's Handbook of Criminal Law," practically identical with which were "Fisher's Selected Cases on Criminal Law." "Cases on Torts" were edited by Melville M. Bigelow to accompany his own work on that subject; Hon. Thomas M. Cooley was an authority upon "The Elements of Torts"; and 2 volumes contained the "Handbook of the Law of Torts," by Edwin A. Jaggard, in the "Hornbook Series." "Mechem's Cases on the Law of Damages" were printed for use in connection with the professor's lectures in the law school of the University of Michigan, as were "Mechem's Cases on the Law of Succession to Property after the Death of the Owner." James M. Kerr filled 3 volumes with "A Treatise on the Law of Real Property"; as Lewis N. Dembitz did 2 with "A Treatise on Land Titles in the United States." Part II of "Illustrative Cases in Realty" by W. S. Pattee, covered "Estates in Land," and Part III, "Title to Estates." Robert Ludlow Fowler's "History of the Law of Real Property in New York" was intended as an essay introductory to the study of the revised statutes of that State. "Practice in Matters of Cost," by George W. Bradner, contained a table of cases and appendix of fees; "Illustrative Cases upon the Law of Bills and Notes" were selected and annotated by Elias F. Johnson, and a second edition of Charles P. Norton's "Handbook of the Law of Bills and Notes," in the "Hornbook Series," had an additional chapter on checks by William L. Clark, Jr. Ernest W. Huffcut set forth the "Elements of the Law of Agency," and James Paige supplied "Illustrative Cases in Agency with Analysis and Citations." Five volumes were issued of the 6 which will contain "Commentaries on the Law of Private Corporations," by Seymour D. Thompson; Vol. III appeared of the "American Corporation Legal Manual," edited by Charles J. Borgmeyer; and from Henry C. Van Schaack we had "Van Schaack's Manual for Corporations." "Membership and Religious Corporations" were the theme of Robert C. Cummings and Frank B. Gilbert. "The Law of Voluntary Societies, Mutual Benefit Insurance and Accident Insurance" was set forth by William C. Niblack, and "An Outline of the Law of Insurance" emanated from C. B. Elliott. Vol. I was published of "American Negligence Cases," prepared and edited by T. F. Hamilton: "The Law of Negligence in New York" was traced by John Brooks Leavitt, who condensed, codified, and classified all the reported cases in negligence and kindred subjects in the court of last resort of that State to Jan. 1, 1895; and Charles A. Ray considered "Negligence of Imposed Duties, Carriers of Freight." Simon G. Crosswell wrote "A Treatise on the Law relating to Electricity," and Vols. II and III of "American Electrical Cases," edited by William W. Morrill, covered the years 1886-'89 and 1889-'92. A fifth edition appeared of



"A Treatise on the Law of Domestic Relations," by James Schouler; Richard A. Ballinger published "A Treatise on the Property Rights of Husband and Wife"; and William T. Nelson "A Treatise on the Law of Divorce and Annulment of Marriage" in 2 volumes. "The Legal Status of Married Women in Massachusetts," as set forth by George A. O. Ernst, was published by the Woman Suffrage Association. Vol. XIX of "Decisions of the Department of the Interior and General Land Office in Cases relating to Public Lands," edited by S. V. Proudfit, covered the six months from July to December, 1894; Thomas B. Hall gave an "Outline of the Infringement of Patents for Inventions, not Designs," based solely on the opinions of the Supreme Court of the United States; and Francis M. Wright sent out "Wright's Annual Index of Patent Practice, 1894." Other important works were "A Treatise on the Law of Marine Collisions," by Herbert R. Spenser; the "Law of Naturalization in the United States of America, and of Other Countries," by Prentiss Webster; a second edition of "The Law of Building Associations," by Gustav A. Endlich; "The Road Rights and Liabilities of Wheelmen," by George B. Clementson; and Vol. II of "Medical Jurisprudence, Forensic Medicine, and Toxicology," by R. A. Witthaus and Tracy C. Becker. "The Law relating to the Production and Inspection of Books, Papers, and Documents in Pending Cases" was the subject of an address delivered by Thomas J. Sutherland before the Illinois State Association. Vols. XXVII and XXVIII appeared of the "American and English Encyclopedia of Law," compiled under the editorial supervision of Charles F. Williams, by David S. Garland, as well as Vols. XLVI, XLVII, and XLVIII of "American and English Corporation Cases" and Vols. LIX, LX, and LXI of "American and English Railroad Cases," both edited by William M. McKinney. Vols. I, II, and III of "A Digest of Railway Decisions," embracing all the cases from the earliest period of railway litigation to the present time in the United States, England, and Canada, were the work of Stewart Rapalje and William Mack, and Vol. II was issued of "American Street-Railway Decisions," edited by Charles A. Richardson and Alfred J. Hook. Vols. X and XI of "American Railroad and Corporation Reports" were published. A "Digest of Decisions and Precedents of the Senate and House of Representatives of the United States, relating to their Powers and Privileges respecting their Members and Officers," by Henry H. Smith, came from the Government Printing Office at Washington. The tenth annual volume of the "General Digest of the Decisions of the Principal Courts of the United States, England, and Canada" was received, as well as Vols. XXXIX to XLV of "American State Reports," edited by A. C. Freeman; Books VI to XIX of "Federal Cases," Books XXV to XXVIII of "Lawyers' Reports," and the annual "American Digest" for 1895, as well as the various "Reporters' series and "Reports" of the several States. Austin Abbott prepared "A Digest of New York Statutes and Reports from Jan. 1, 1894, to Jan. 1, 1895," a third edition was made of "A Treatise on the Common and Statute Law of the State of New York," and among publications of sectional value may be mentioned "Citations to the Code of Virginia," by Abram C. Eby; "Civil and Criminal Codes of Practice and Amendments enacted prior to 1895," in Kentucky, with notes, etc., by Hon. Joshua Bullitt; "A Citation of Supreme and Appellate Courts Decisions" of Indiana, by Shaffer Peterson; and Vol. II of "A Digest of the Decisions of the Supreme Court" of Kansas, by C. F. W. Dassler. "The Assessor's, Collector's, and Town Clerk's Manual," by Will Lansing, met many requirements. The tenth annual issue of "Story's Legal Digest" for 1895 was issued, as well as "Boyer's Legal Directory" and Hubbell's "Legal Directory" for the same year.

**Juvenile.**—Books for young people continued to be written in increasing numbers during 1895, and on their title pages appeared names of authors who have

delighted maturer minds. At their head was Mrs. Frances Hodgson Burnett, with her story of "Two Little Pilgrims' Progress: A Story of the City Beautiful" at Chicago, and Marguerite Bouvet, the author of "Sweet William," again charmed childish readers with "A Child of Tuscany." Charles Ledyard Norton published "Jack Benson's Log; or, Afloat with the Flag in '61," in the "Fighting for the Flag Series"; "Quarterdeck and Fok'sle" was the title of stories of the sea by Molly Elliot Seawell; "Hero Tales from American History" came from Henry Cabot Lodge and Theodore Roosevelt, while "The Knight of Liberty," by Hezekiah Butterworth, was a tale of the fortunes of Lafayette. For boys there were: "The Watch Fires of '76," by Samuel Adams Drake; "Three Colonial Boys," a story of the same period, by Everett T. Tomlinson, in the "War of the Revolution Series," and, from the same author, "The Boy Soldiers of 1812" and "The Boy Officers of 1812," both in the "War of 1812 Series"; "Captain John Crane, 1800-1815," by Thomas W. Knox; "In the Saddle" and "A Lieutenant at Eighteen," 2 volumes of the "Blue and the Gray—On Land Series," by William T. Adams (Oliver Optic); "Chilhowee Boys in War Time," by Sarah E. Morrison; and "Afloat with the Flag," by W. J. Henderson, the author of "Sea Yarns for Boys." Elbridge S. Brooks sketched the lives of "Great Men's Sons" from Socrates to Napoleon, and also narrated the history of "A Boy of the First Empire." Howard Pyle told "The Story of Jack Ballister's Fortunes" and also a poetic fairy tale of "The Garden behind the Moon," illustrating both volumes himself; Maurice Thompson described "The Ocala Boy" in a story of Florida town and forest, and Louis Pendleton carried his two youthful heroes through exciting adventures "In the Okefenokee." "Under the Red Flag," by Edward King, contained the adventures of two American boys in the days of the Commune. Annie Fellows Johnston, the author of "Big Brother," wrote another Kentucky story, "The Little Colonel," and "Joel: A Boy of Galilee," a story of the time of Christ; and Mrs. Laura E. Richards published "Nautilus," "Hildegard's Neighbors," and "Jim of Hellas." "Chris and the Wonderful Lamp," by Albert Stearns, was illustrated by Reginald Birch and E. B. Bensell, and "Dorothy and Anton" was a sequel to "Dear Daughter Dorothy," by A. G. Plympton, who also wrote "A Bud of Promise," as a warning to ambitious parents. James Otis (James Otis Kaler) was unusually prolific, sending out "Wood Island Light," "Andy's Ward," "How Tommy saved the Barn," "Jerry's Family," "The Boys of 1745 at the Capture of Louisbourg," "Ezra Jordan's Escape from the Massacre at Fort Loyal," and "Neal the Miller: A Son of Liberty," the four last in the series of "Stories of American History." "The Young Cascarillero," a story of bark hunters in the Ecuador forests, by Marilton Downing, and "Colonel Thorndike's Adventures," by Harry W. French, were bound together in one volume, and delighted many a boyish heart. Familiar writers for boys were represented: Willis Boyd Allen by "The Mammoth Hunters," whom he carried to Alaska; Harry Castlemon (Charles A. Fosdick) by "Elam Storm, the Wolf-er" and "The Missing Pocketbook"; Kirk Munroe by "At War with Pontiac" and "Snow-Shoes and Sledges," the last a sequel to "The Fur Seal's Tooth"; and William O. Stoddard by "The Partners" and "Chumley's Post," the last a story of the Pawnee trail. Horatio Alger told of Oliver Conrad's plucky fight, "Adrift in the City"; Charles G. D. Roberts told of the success of "Reube Dare's Sha'd Boat"; and from Edward S. Ellis came five books: "Comrades True," "Jack Midwood," and "The Young Conductor" in the "Through on Time Series" and "The Young Ranchers" and "The Path in the Ravine" in the "Forest and Prairie Series." John T. Trowbridge published but one book, "The Lottery Ticket." For girls there were several pretty and suggestive books. Elizabeth Knight Tompkins followed her successful novel published during the year with "An Unles-



soned Girl," a story of school life; Mrs. Elizabeth W. Champney introduced us to "Witch Winnie at Versailles," and also wrote the history of "Paddy O'Leary and his Learned Pig"; Anne Hollingsworth Wharton contributed "A Last Century Maid, and Other Stories for Children"; and Mrs. Elizabeth Thomas Toulmin Smith (formerly L. T. Mcade), "Girls New and Old" and "The Least of These, and Other Stories." "Oakleigh," by Ellen Douglas Deland; "Ruth Prentice," by Marion Thorne; "A Happy Discipline," by Elizabeth Cumings; "A Flock of Girls and Boys," by Nora Perry; "What They Couldn't," by Mrs. Isabella M. Alden (Pansy); "The Green Garnet," by Natalie L. Rice; "The Boynton Neighborhood," by Mrs. I. H. Foster (Faye Huntington); "The Master of Deeplawn," by Mrs. Hattie E. Colter; "Dame Prism," by Margaret H. Mathews; and "The Hobbledehoy," by Belle C. Greene, found enthusiastic readers; as did "Katharine's Yesterday and Other Christian Endeavor Stories," by Grace Livingston Hill; "His Great Ambition," by Anna F. Heckman; "Dorothy and her Ships," by Mary Hubbard Howell; "The House with Two Doors, and Other Stories," by Mrs. Alice Eddy Curtiss; and "A Jolly Good Summer," by Mary P. Welles Smith, in the "Jolly Good Series." "Cap'n Thistletop" was a story for girls and boys by Sophie Sweet; Sophie Rebecca Clarke (Sophie May) added "Kyzie Dunlee, A Golden Girl" to the "Little Prudy's Children Series"; Emma J. Gray chronicled "A Golden Week"; Laura Updegraff contributed "Wee Dorothy's True Valentine" to the "Cosey Corner Series"; Harriet A. Cheever told of "Little Jolliby's Christmas"; Francis V. and Edward J. Austen caught the conversation that passed between "Elfie and the Katydid"; while delightful fairy stories were "The Keeper of the Salamander's Order," by William Shattuck; "A New Alice in the Old Wonderland," by A. M. Richards, illustrated by Anna M. Richards, Jr.; "The Enchanted Butterflies," by Adelaide Upton Crosby; "The Kanter Girls," by Mary L. B. Branch; "Old Farm Fairies," by Christopher H. McCook, the author of an exhaustive work on "American Spiders and their Spinning Work," who retells much contained therein for youthful readers in this pleasant form; and "The Brownies through the Union," by Palmer Cox. Bishop Gailor contributed an introduction to "Dear Little Marchioness," by A. Tracy, and "Frowzie the Runaway," a fable for children by Lily F. Wesselhoeft, was illustrated by Jessie McDermott Walcott, who also contributed the designs for "Ruby's Vacation," by Mrs. George A. Paul (Minnie E. Kenney). From the same author appeared also during the year "A Tangled Web, and other Tales" and "Lassie." For little girls there were "Bessie and Bee," by Mary D. Brine; "Little Miss Phoebe Gay," by Helen Dawes Brown; "Nim and Cum and the Wonderhead Stories," by Catherine Brooks Yale; and "The Little Boy who lived on the Hill," by Annie Laurie. Martha F. Finley described "Elsie's Journey on Inland Waters." Three stories of college life were "The Impostor," by Charles R. Talbot; "Kings and Cupbearers," by George Huntington, and "Two College Boys," by Edward A. Rand. "Matouchon" was a story of Indian child life by Annie M. Barnes; M. Carrie Hyde published three stories—"Goostie," "Under the Stable Floor," and "Yan and Nochie of Tappan Sea"; Caroline Starr Morgan was the author of "Charlotte's Revenge"; C. Emma Cheney of "Number 49 Tinkham Street"; Mary G. Bonesteel of "Army Boys and Girls"; Ella Reeve Ware of "Three Little Lovers of Nature"; B. Freeman Ashley, the author of "Tan Pile Jim," wrote "Dick and Jack's Adventures on Sable Island"; Edward Stratemeyer told of "Reuben Stone's Discovery" in the "Ship and Shore Series"; "A New Samaritan" was the story of an heiress, by Mrs. Julia MacNair Wright; many authors contributed to the "Mysterious Voyage of the Daphne, and Other Stories for Boys and Girls";

Mrs. Mary Lowe Dickinson told of "The Temptation of Katharine Gray" and also "Spring Blossoms; an Easter Story"; Laisdell Mitchell's "Niram: A Dusky Idyl" had for its hero a little colored boy; and the same author wrote also "Tony, the Story of a Waif." "Shut In: A Story of the Silver Cross, and Other Stories" came from Mattie M. Boteler; Agnes Giberne and others collaborated to produce "Hungering and Thirsting," and other stories; Ernest Gilmore wrote "A Pot of Daisies"; Helen B. Williams, "Hugh Pennock"; Josephine R. Barker, "Gee's Trap"; Howe Benning (Mrs. Maria H. Henry), "Goshen Hill"; Amos R. Wells, "Foreman Jennie"; Elizabeth Lloyd, "The Old Red School House"; and Will H. Glascock, "Stories of Columbia." "Young Master Kirke," by Penn Shirley, continued the "Little Miss Weezy Series." "The Old Town Pump," by Margaret Sidney (Mrs. H. M. Lothrop), was one of her best; "Roger, the Ranger," by Eliza F. Pollard, told of the conquest of Canada by the British; "The Horse Fair," by James Baldwin, was as original in conception as interesting in the information it contrived to convey; and, finally, we have a little book of "Child Sketches from George Eliot," by Julia Magruder, illustrated by R. B. Birch and Amy Brooks, and "Oliver Optic's Annual" for 1895.

**Medicine and Surgery.**—Works on medicine comprised a "Synopsis of the Practice of Medicine," by William Blair Stewart, M. D.; "An Index of Medicine," by Seymour Taylor, M. D.; Vols. I, II, and III of "Twentieth Century Practice," an international encyclopædia of modern medical science, by leading authorities of Europe and America, edited by Thomas L. Stedman, M. D.; "An Eclectic Compendium of the Practice of Medicine," by Lyman Watkins, M. D.; a "Syllabus of Eclectic Materia Medica and Therapeutics," compiled from notes taken from the lectures of F. J. Locke, M. D., edited with pharmacological additions by Harvey W. Felter, M. D., and with notes on specific medicines by John Uri Lloyd, the two last being "Eclectic Manuals"; and "A Pathogenetic Materia Medica based upon Drs. Hughes's and Duke's 'Cyclopædia of Drug Pathogenesis,'" by the Medical Investigation Club of Baltimore, Md. For students of human anatomy were issued Parts III and IV of "Dissections Illustrated," by C. Gordon Brodie, with plates drawn and lithographed by Percy Highly, and "Outlines for Dissection to be used in Connection with Morris's 'Anatomy,'" by W. A. Campbell, M. D. "Higher Medical Education" was the subject of two addresses delivered by Dr. William Pepper before the medical department of the University of Pennsylvania on Oct. 1, 1877, and Oct. 2, 1893, bound in one volume. Horatio R. Bigelow, M. D., prepared an "International System of Electrotherapeutics" for students, general practitioners, and specialists; C. T. Hood, M. D., "A Manual of Electrotherapeutics"; and Charles S. Neiswanger, "Electro-Therapeutical Practice," a ready reference guide for physicians in the use of electricity. R. H. Chittenden delivered the Cartwright Lectures for 1894 before the Alumni Association of the College of Physicians and Surgeons of New York on "Digestive Proteolysis"; A. Mathieu, M. D., wrote on "Treatment of the Diseases of the Stomach and Intestines" for the "Medical Practitioners' Library"; "Lectures on the Diagnosis of Abdominal Tumors" were delivered by William Osler, M. D., before the post-graduate class of Johns Hopkins University in 1893; Dr. Nicholas Senn wrote upon "The Pathology and Surgical Treatment of Tumors"; Alfred H. Allen, on "The Analytical Examination of Diabetic, Albuminous, and Gouty Urine"; J. Compton Burnett, M. D., on "Gout and its Cure"; and George R. Fowler, M. D., "A Treatise on Appendicitis." W. Roger Williams was the author of "A Monograph on Diseases of the Breast, their Pathology and Treatment," with special reference to cancer; "The Pulse Sensations," by William Ewart, M. D., was a study in tactile sphygmology, and W. Watson Cheyne considered "Treatment of Wounds, Ulcers, and Abscesses." William Murrell,



M. D., published "Clinical Lectures on the Prevention of Consumption"; a fourth edition was made of Dr. John M. Scudder's work "On the Use of Medicated Inhalations in the Treatment of Diseases of the Respiratory Organs"; "Catarrhal Diseases of the Respiratory Passages" were the theme of J. M. G. Carter, M. D., as were "Nose and Throat Diseases of the Respiratory Tract" of P. Watson Williams, M. D. A second edition appeared of the "Manual of Diseases of the Ear," by Albert H. Buck, M. D. Henry G. Piffard, M. D., was the author of an elaborate work entitled "A Practical Treatise on Diseases of the Skin," and Parts VII to X were issued of the "Atlas of the Diseases of the Skin," by H. Radcliffe Crocker, M. D. "Enlargement of the Prostate: Its Treatment and Radical Cure," came from C. W. Mansell Moullin; Henry Morris wrote on "Injuries and Diseases of the Genital and Urinary Organs"; James Nevins Hyde, M. D., and Frank H. Montgomery, M. D., were joint authors of "A Manual of Syphilis and the Venereal Diseases"; and M. L. Holbrook, M. D., advocated the "Physical, Intellectual, and Moral Advantages of Chastity." "Medical Gynecology" was a treatise on the disease of women from the standpoint of the physician, by J. C. Alexander; J. W. Long, M. D., based his "Syllabus of Gynecology" on the "American Text-book of Gynecology"; Edmund B. Wilson, with the co-operation of Edmund Leaning, M. D., prepared an "Atlas of the Fertilization and Karyokinesis of the Ovum"; J. Clarence Webster, M. D., chose for his subject "Ectopic Pregnancy"; "Pregnancy, Labor, and the Puerperal State" was written by Egbert H. Grandin, M. D., and George W. Jarman, M. D.; and W. A. Yingling, M. D., contributed "The Accoucheur's Emergency Manual." Anna M. Galbraith, M. D., wrote on "Hygiene and Physical Culture for Women," and Aimée Raymond Schroeder contributed "Health Notes for Young Wives." Henry Bixby Hemenway gave plain talks to nonprofessional readers on "Healthful Womanhood and Childhood," and J. P. Crozer Griffiths, M. D., told all that was necessary for "The Care of the Baby." Francis X. Dercum, M. D., edited "A Text-book on Nervous Diseases" by American authors; B. Sachs was the author of a "Treatise on the Nervous Diseases of Children"; B. K. Rachford, M. D., considered "Some Physiological Factors of the Neuroses of Children"; and J. A. Benson, M. D., prepared a brief "Synopsis of a Course of Lectures on the Anatomy, Physiology, and Histo-chemistry of the Nervous System." Theodore B. Hyslop, M. D., wrote on "Mental Physiology," especially in its relations to mental disorders, and Theodore Kirchhoff, M. D., added a "Handbook of Insanity" to the "Medical Practitioners' Library." H. D. Noyes, M. D., edited "The Relation of Diseases of the Eye to General Diseases," by Max Knies; Chalmer Prentice, M. D., wrote on "The Eye in its Relation to Health"; and Edward Jackson, M. D., considered "Skiascopy and its Practical Application to the Study of Refraction." W. Gilman Thompson, M. D., considered "Practical Dietetics," with special reference to diet in disease; "The Art of Massage" formed the theme of J. H. Kellogg, M. D.; A. Symons Eccles treated of "The Practice of Massage"; and A. Rabagliati, M. D., of "Massage for Symptoms which Simulate Disease of the Pelvic Organs in Woman." "Immunity, Protective Inoculations in Infectious Diseases, and Serumtherapy," by George M. Sternberg, M. D., belonged to the "Medical Practitioners' Library." "Blood Serum Therapy and Antitoxins" came from Dr. George E. Krieger. "Suggestions to Hospital and Asylum Visitors," by Drs. John S. Billings and Henry M. Hurd, had an introduction by Dr. S. Weir Mitchell; and a new revised edition was issued of Dr. Roger S. Tracy's "Handbook of Sanitary Information for Householders." Ernest B. Hoag and H. Kahn were responsible for "Elementary Technique in Histology and Bacteriology"; Langdon Frothingham, M. D., for a "Laboratory Guide for the Bacteriologist"; and Charles Platt for "Laboratory Notes

in Qualitative Analysis and Medical Chemistry." A second edition was also made of "Directions for Work in the Histological Laboratory," especially arranged for the use of classes in the University of Michigan, by G. C. Huber, M. D. The most important contribution to surgery was Vol. I of "A System of Surgery," by American authors, edited by Drs. F. S. Dennis and John S. Billings, to be complete in four octavo volumes; second revised editions were made of the "Principles of Surgery," by Dr. Nicholas Senn, and of "An American Text-book of Surgery," edited by Drs. W. W. Keen and J. W. White; Power D'Arcy wrote upon "The Surgical Diseases of Children and their Treatment," Bertha M. Voswinkel, on "Surgical Nursing"; while from Charles Beck, M. D., we had "A Manual of the Modern Theory and Technique of Surgical Asepsis." Samuel Waggaman published "A Compendium of Botanic Materia Medica," and a new fifth edition appeared of Dr. W. Simon's "Manual of Chemistry," especially adapted for students of pharmacy and medicine. E. Wallis Hoare was the author of "A Manual of Veterinary Therapeutics and Pharmacy," and Henry L. Shumway compiled "A Handbook on Tuberculosis among Cattle," with considerations of the relation of the disease to the health and life of the human family and of the facts concerning the use of tuberculin as a diagnosis test. "The Secrets of Health" were revealed by Dr. S. H. Platt; Nathaniel E. Y. Davies considered "Health and Condition in the Active and Sedentary"; Dr. L. C. Parkes set forth "The Elements of Health"; and A. M. Davies published "A Handbook of Hygiene." Dr. J. G. Kerr made a brief plea for "Medical Missions." Vol. XVI of the "Index-Catalogue of the Library of the Surgeon-General's Office" was reached, covering W-Zythus.

**Poetry.**—More than twice the amount of poetry was published in 1895 than saw the light in the year previous. Little possessed lasting value. "Last Poems" of James Russell Lowell were sent to press, which, however, rather disappointed expectation; "Later Lyrics" were selected from "Mercedes," "The Sisters' Tragedy," "Wyndham Towers," and "Unguarded Gates," by Thomas Bailey Aldrich himself; and Will Carleton astonished his familiar friends by an almost total abandonment of the vernacular in "Rhymes of Our Planet." "Stops of Various Quills," by William Dean Howells, were sympathetically illustrated by Howard Pyle; "The Singing Shepherdess, and Other Poems" came from Mrs. Annie Fields; "The Hawthorn Tree, and Other Poems" from Nathan Haskell Dole; "From Dreamland Sent" was the title of 70 short poems by Lilian Whiting, the author of "The World Beautiful"; "Fact and Fancy: Humorous Poems by Cupid Jones," were in reality written by Francis S. Saltus; "Poems of Home and Country," by Dr. Francis S. Smith, the author of "America," with which are included his "Sacred and Melodious Verse," were edited by Henry B. Carrington in the first authorized complete edition; 14 poems of Rev. George Lansing Raymond were entitled "Pictures in Verse"; "In Camphor," anonymous short poems, were illustrated by Howard Chandler Christy; Samuel Minturn Peck contributed "Rhymes and Roses"; Mrs. Sarah Knowles Bolton, "The Inevitable, and Other Poems"; while Charles Knowles Bolton told "The Love Story of Ursula Wolcott" in verse; Clinton Scollard explored "The Hills of Song"; and "Chocorua's Tenants" were the subject of exquisite poetic description by Frank Bolles. "Poems," by Joseph O'Connor, was a notable volume from an American poet who does not depend upon any clap-trap to secure an audience, but writes poetry as Tennyson and Lowell wrote it; "A Sea Mark" was a threnody for Robert Louis Stevenson, by Bliss Carman, in an edition limited to 50 copies; and from the same author we had "Behind the Arras: A Book of the Unseen," with designs by T. B. Meteyard. "The Marriage of Guinevere" was sung by Richard Hovey, who made also an admirable translation of the



"Plays" of Maurice Maeterlinck. Another translation was that of "The White Snake" from the German into the original meters, by Madison Cawein. A sorrowful interest attached to the new edition of "Echoes from the Sabino Farm," by Eugene and Roswell Martin Field, the announcement of which was made coincident with the death of the poet and kindly humorist. "Selected Poems" of Sidney Lanier were edited, with an introduction, notes, and bibliography, by Morgan Calloway, Jr. "Little Knights and Ladies" was the title of verses for young people, by Mrs. Margaret E. Sangster, and for little people there was a charming volume by Edith M. Thomas, entitled "In the Young World." "The Poetry of Freemasonry," by Robert Morris, Sr., appeared in a new revised edition, with a portrait and authentic biography by his son, Robert Morris. Charles Godfrey Leland sang "Songs of the Sea and Lays of the Land"; "Ballads of Blue Water, and Other Poems" were written by James Jeffrey Rohe; "The Black Riders, and Other Lines," by Stephen Crane; "First Poems and Fragments," by Philip H. Savage; "Mimosa Leaves," by Grace Denio Litchfield; "Quintets, and Other Verses," by W. H. Thorne; "Sappho, and Other Songs," by L. B. Pemberton; "The White Tsar, and Other Poems," by Henry Bedlow, were illustrated by J. Steeple Davis; Mary Ashley Townsend published a volume of sonnets entitled "Distaff and Spindle"; Mary Berri Chapman illustrated her own "Lyrics of Love and Nature"; Ellen M. H. Gates recounted "The Treasures of Kurium"; while other collections of verse were "The Vacant Chair, and Other Poems," by Henry Stevenson Washburn; "An Olio of Verse," by Mary Anna and Aliee E. Sawtelle; "A Bundle of Poems," by Mrs. Harrington Austin; "Songs in the Night," by Mrs. Kate A. Bradley; "In the Garden, and Other Poems," by Emily E. Veeder; "Heart Treasures," by Fannie A. Damon; "In Sheltered Ways," by D. J. Donahoe; "Around the Hearth, and Other Poems," by Millen Sanford Greene; "Songs from the Golden Gate," by Ina Coolbrith; "Life and Dreams," by L. E. E.; "Song Blossoms," by Julia Ann Woleott; "The Tower," by Mrs. Emma Huntington Nason; "Verses," by L. R. Hamberlin; "The Web of Life," by Augusta C. Bristol; "Heart Melodies," by Thomas Sloss Turner; and "On Wings of Fancy Blown," by Mary Yale Shapleigh. Mrs. Elizabeth Stoddard published a collection of her "Poems"; William Wells Newell, "Words for Music"; James G. Burnett, "Love and Laughter"; Richard Burton, "Dumb in June, and Other Poems," in the "Oaten Stop Series," another issue of which was "A Dorie Reed," by Zittella Cooke; Samuel Walter Foss caught "Whiffs from Wild Meadows"; Will S. Hays gave us "Poems and Songs"; William Cranston Lawton, "Folia Dispersa"; Edward Willard Watson, "To-day and Yesterday"; and Mary H. Leonard, "The Story of Portus and Songs of the Southland." "The Gods give my Donkey Wings" was the prayer of Angus E. Abbott in the "Carnation Series"; "Hawthorne Leaves," by Mrs. Martha J. Claiborne; "In Woods and Fields," by Miss Augusta Larned; "Fagots," by Hester A. Benedict; "Autumn Leaves," by Mary Bassett Clarke (Ida Fairfield); "A Collection of Wild Flowers," by Belle C. Woodruff; "Poems," by Sarah S. Wolverton; "Idle Rhymes," by Helen Louise Moriarity; "A Bank of Violets," by Fanny Runnells Poole; and "Thoughts in Verse," by Clifford Howard, found readers, as did "The Rabbit Witch, and Other Tales," in verse, by Katharine Pyle; "Vashti," a poem in 7 books, by John Brayshan; "Essie," a romance in rhyme, by Laura Dayton Fessenden; "Philoctetes, and Other Poems and Sonnets," by J. E. Nesmith; "Ben's Isabella," by Josephine Tyler; "Life Songs," by Theron Brown; and "God's Parable, and Other Poems," by Susanna Massey. "A Drama of the Revolution," by Ethan Allen, was an attempt to vivify the personages of that period. "The Poet among the Hills—Oliver W. Holmes in Berkshire," came from J. E. A. Smith.

Among volumes of selections, we have "A Victorian Anthology, 1837-'95" from Edmund Clarence Stedman, consisting of selections illustrating the editor's critical review of British poetry in the reign of Victoria; "Choice English Lyrics" were compiled by James Baldwin; and to Mrs. Katrina Trask (Mrs. Spencer Trask), the author of "Under King Constantine," we owe a collection of "Sonnets and Lyrics." "Selections from the Poetry of Robert Herrick" were edited by Edward Everett Hale, Jr., and "Poets' Dogs" was a compilation by Elizabeth Richardson. "The Child's Garden of Song" was selected and arranged by William L. Tomlins and illustrated by Ella Ricketts; Charles Eliot Norton edited "The Heart of Oak Books," a collection of traditional rhymes and stories for children, in 6 volumes; Mary I. Lovejoy compiled "Nature in Verse" as a poetry reader for children; David C. Bell edited "The Reader's Shakespeare" in 3 volumes; and a new edition appeared of Bayard Taylor's "The Echo Club" in the "Fly-Leaves Series."

**Political, Social, and Moral Science.**—The first of 3 volumes of "Commentaries on the Constitution of the United States, Historical and Juridical," by Roger Foster, was published during the closing days of the year, and is the first attempt since the work of Story to treat the subject exhaustively and to place the matter which has arisen since in a form accessible to the professional and general reader. It covered from "Preamble to Impeachment." Hon. George S. Boutwell wrote upon "The Constitution of the United States at the End of the First Century"; and Joseph West Moore, in "The American Congress," gave a history of national legislation and political events from 1774 to 1895. "The Rise and Development of the Bicameral System in America" was traced by Thomas F. Moran in the "Johns Hopkins University Studies"; and "The Geographical Distribution of the Vote of the Thirteen States on the Federal Constitution, 1787-'88," by Orin Grant Libby, was one of the bulletins of the University of Wisconsin. Eben Greenough Scott made a study of "Reconstruction during the Civil War in the United States of America"; Joshua W. Caldwell published "Studies in the Constitutional History of Tennessee"; Bernard C. Steiner wrote on "Citizenship and Suffrage in Maryland"; and Albert Shaw devoted a volume, respectively, to "Municipal Government in Great Britain" and "Municipal Government in Continental Europe." "Municipal Home Rule" was a study in administration by Frank J. Goodnow; "Municipal Reform Movements in the United States," by William Howe Tolman, had an introductory chapter by Dr. Charles H. Parkhurst, who told in a volume of his own "Our Fight with Tammany"; "The Individual and the State: An Essay on Justice," was the title of a thesis by Thomas Wardlaw Taylor, accepted by the faculty of Cornell University for the degree of Doctor of Philosophy; "Ideals and Institutions" was the title of a thesis for the same degree presented by John Ernest Merrill at the University of Minnesota; "Anarchy or Government?" by William Maekintire Salter, was an inquiry in fundamental politics. J. G. Bourinot explained "How Canada is Governed," and "How the Republic is Governed" was a useful little volume by Noah Brooks, who also made "Short Studies in Party Politics." A new revised edition was published of "The American Government," by B. A. Hinsdale, and Thomas J. Morgan condensed the essentials of "Patriotic Citizenship" into the form of questions and answers. "Government and Co., Limited" was an examination of the tendencies of privileges in the United States, by Horatio W. Seymour, and Edward Atkinson contributed an introduction to the new revised and enlarged edition of J. K. Upton's "Money in Politics." Charles Wesley Eldridge edited the "United States Internal Revenue Tax System," embracing all internal-revenue laws now in force as amended by the latest enactments, including the income tax enactments of 1894 and 1894; Thomas G. Shearman wrote on "Natural Taxa-



tion" in the "Questions of the Day Series"; and Francis Walker on "Double Taxation in the United States" in the series of "Studies in History, Economics, and Public Law." Roger Foster and Everett V. Abbot were joint authors of "A Treatise on the Federal Income Tax under the Act of 1894"; Wilson Lloyd Bevan made a study in English economic literature, entitled "Sir William Petty"; and W. A. Wetzel treated of "Benjamin Franklin as an Economist" in the "Johns Hopkins University Studies." Robert Ellis Thompson wrote a "Political Economy for High Schools and Academies," and Simon N. Patten delivered a lecture on "Economics in Elementary Schools" in the summer meeting of the American Society for the Extension of University Teaching, at Philadelphia, July 18, 1894. Benjamin Rand prepared "A Bibliography of Economics," and a third edition was made of "Selections illustrating Economic History since the Seven Years' War." Five papers read at the seventh annual meeting of the American Economic Association, Dec. 27-29, 1894, were published in book form, and the same association published the "Poor Laws of Massachusetts and New York," by John Cummings. "Un-American Immigration: Its Present Effects and Future Perils" was a study from the census of 1890, by Rena Michaels Atchison, which had an introduction by Joseph Cook; "Statistics and Sociology," by Richmond Mayo Smith, formed Part I of the "Science of Statistics"; John Bascom contributed "Social Theory" to Crowell's "Library of Economics and Politics"; "The Laws of Social Evolution," by Rev. Franklin M. Sprague, was a critique of Benjamin Kidd's "Social Evolution," and a statement, according to the author, of the true principles which govern social progress; and "Social Growth and Stability," by D. Ostrander, was a consideration of the factors of modern society and their relation to the character of the coming state. The seventh special report of the United States Commissioner of Labor, Hon. Carroll D. Wright, covered "The Slums of Baltimore, Chicago, New York, and Philadelphia"; and from the same authority, in his individual capacity, we had a review of "The Industrial Evolution of the United States" in the "Chautauqua Reading Circle Literature." W. A. Croffut addressed a memorial to the United States Senate on the labor question, explaining "How Everybody's Wages can be Doubled." In "Wealth and Waste" Alphonso A. Hopkins sets forth the principles of political economy in their application to the present problems of labor, law, and the liquor traffic; David Hilton Wheeler portrayed "Our Industrial Utopia and its Unhappy Citizens"; Frank Loomis Palmer wrote upon "The Wealth of Labor"; F. J. Stimson delivered four lectures at the Plymouth School of Ethics on "Labor in its Relations to Law"; Uriel H. Crocker explained "The Cause of Hard Times"; and John Yeiser considered "Labor as Money." "The Way Out" of all difficulties, financial, sociological, and ethical, was pointed by Moses Samuelson. Of books and pamphlets on finance there was an unusual number written. "Monetary Systems of the World" was a study of present currency systems and statistical information relative to the volume of the world's money, with complete abstracts of various plans proposed for the solution of the currency problem, by Maurice L. Muhleman, Deputy Assistant Treasurer of the United States, New York; Alexander Del Mar, M. E., published a "History of Monetary Systems"; "Principles and Practice of Finance" were set forth by Edward Carroll, Jr.; Arthur I. Fonda recommended original means for securing "Honest Money"; Henry Loomis Nelson demonstrated "The Money we Need." In the "Questions of the Day Series" appeared "Real Bimetallism," by Everett P. Wheeler; "Joint Metallism," by Anson Phelps Stokes, in a third enlarged edition; "Congressional Currency," an outline of the Federal money system, by Armistead C. Gordon; and "A Sound Currency and Banking System: How it may be Secured," by Allen

Ripley Foote. Horace White published "Money and Banking illustrated by American History"; "The Finances of the United States from 1775 to 1789, with Especial Reference to the Budget," by Charles J. Bullock, was a bulletin of the University of Wisconsin; Rocliff Morton Breckenbridge explained "The Canadian Banking System, 1817-1890" in publications of the American Economic Association; and William C. Cornwall considered "The Currency and the Banking Law of the Dominion of Canada" with reference to currency reform in our own country. A new edition was issued of Samuel Dan Horton's work on "Silver and Gold and their Relation to the Problem of Resumption," published in 1876; and "A New Monetary System," proposed by Edward Kellogg in 1843, was also revived. Arthur Kitson offered a "Scientific Solution of the Money Question"; Melville D. Landon (Eli Perkins) discussed "Money: Gold, Silver, or Bimetallism"; Charles Elton Blanchard made a "Report of Uncle Sam's Homilies on Finance"; Ignatius Donnelly discussed "The American People's Money"; J. F. Cargill in "A Freak in Finance" discussed the lessons learned in William H. Harvey's "Coin's Financial School" and "Coin's Financial School up to Date," which were also reviewed in "Coin at School in Finance," by George E. Roberts; "Sound Money," by John A. Fraser and Charles H. Sergel; "Cash vs. Coin," by Edward Wisner; "Base 'Coin' Exposed," by Silas Honest Money; "Coin's Financial Fool," by Horace White; and "Facts about Money," by J. Lawrence Laughlin, which included the debate with W. H. Harvey at the Illinois Club, Chicago, May 17, 1895. Other publications on the much vexed silver question were "Bug vs. Bug," by William N. Osgood; "Dollars, or What?" by W. B. Mitchell; "The White Dollar," by Murat Halstead; and "The Monetary Standard," by Edward T. Peters. "Hull House Maps and Papers" was a presentation of nationalities and wages in a congested district of Chicago, with comments and essays on problems growing out of the social conditions by residents of Hull House, a social settlement at No. 335 South Halsted Street, Chicago, Ill. "The Poor in Great Cities: Their Problems, and What is doing to solve them" were the theme of a volume by Robert A. Woods, W. T. Elsing, Jacob Riis, and others. "American Charities" were discussed by Prof. Amos G. Warner in "Crowell's Library of Economics and Politics," another issue of which was "Punishment and Reformation," an historical sketch of the rise of the penitentiary system, by Frederick Howard Wines. Arthur MacDonald made a sociologic and scientific study of "Abnormal Woman"; Charles Coppens published "A Brief Text-book of Moral Philosophy"; James H. Hyslop analyzed "The Elements of Ethics"; Joseph H. Hertz examined the "Ethical System of James Martineau" in the "Columbia College Contributions to Philosophy, Psychology, and Education"; and "Life and the Conditions of Survival" was the title given to popular lectures and discussions before the Brooklyn Ethical Association. Edward Everett Hale told of much to be seen on the bright side of life in "If Jesus came to Boston."

Publications of the American Academy of Political and Social Science included: "The Unit of Investigation in the Social Sciences," by Arthur F. Bentley; "The Social Basis of Proportional Representation," by J. W. Jenks; "State Supervision for Cities," by John R. Commons; "The Custody of State Funds," by E. R. Buckley; "Wieser's Natural Value," by David I. Green; "Industrial Services of the Railways" and "Railway Departments for the Relief and Insurance of Employees," by Emory R. Johnson; "Uniform State Legislation," by Frederick J. Stimson; "The Minimum Principle in the Tariff of 1828 and its Recent Revival," by S. B. Harding; "Money and Bank Credits in the United States," by Henry W. Williams; "Sources of American Federalism," by William C. Morey; "The Break-up of the English Party System," by Edward Porritt; "Pacific Railway



Debts," by R. T. Colburn; "Terminology and the Sociological Conference," by H. M. Powers; "A Neglected Socialist," by Frederick C. Clark; and "The Story of a Woman's Municipal Campaign," edited by Mrs. Talcott Williams. "The Problem of Civilization Solved" emanated from Mrs. Mary Elizabeth Lease, and Slack Worthington proposed "Politics for Prudent People." Rev. J. Preston Fugette argued for "Marriage a Covenant—Not Indissoluble."

**Sports and Pastimes.**—First among books of this class was "Pony Tracks," by Frederick Remington, who accompanied his sketches of pioneer and sporting life with 70 illustrations. T. S. Van Dyke, the devotee of the gun and author of "The Still Hunt," described "Game Birds at Home." "Strength" was a treatise on the development and use of muscle by C. A. Sampson, and Norman W. Bingham, Jr., edited "The Book of Athletics and Out-of-Door Sports." "A Sporting Pilgrimage," by Caspar W. Whitney, gave much information concerning sports at home and in England. James P. Lee prepared a practical manual of "Golf in America"; "Cycling for Health and Pleasure," by Luther H. Porter, claimed to be an indispensable guide to the successful use of the wheel; Henry Clyde wrote on "Pleasure Cycling"; and from Frances E. Willard came "A Wheel within a Wheel: How I learned to ride the Bicycle," with some reflections by the way. Samuel L. Boardman was the author of a "Handbook of the Turf," and A. J. Kenealy contributed "Boat Sailing in Fair Weather and Foul" to the "Outing Library." Marion Lowell edited "Harmonic Gymnastics and Pantomimic Expression," and Mary Tucker Magill offered "Pantomimics: or, Wordless Poems." "Whist Tactics," by R. F. Foster, was illustrated by 112 hands played by correspondence between 16 of the best players in the American Whist League. In "What Shall We Do?" Ruth Hall offered suggestions for entertainments for home and for public representation, and Thomas S. Denison supplied "Lively Plays for Live People," as Herbert Ingalls did "The Boston Charades," 116 in number.

**Theology.**—As usual, a large number of works were published falling under this department. Vol. II appeared of "Institutes of the Christian Religion," by Dr. Emanuel V. Gerhart, and, as did Vol. I, published in 1891, had an introduction by Philip Schaff, D. D. Dr. Cornelius Walker offered "Outlines of Christian Theology"; "Studies in Theology" was the title of lectures delivered in Chicago Theological Seminary by James Denney, D. D.; and Vol. IV of "Studies in Theology," by Randolph S. Foster, was devoted to "Creation, God in Time and Space." Two out of 3 contemplated volumes of "Outlines of Dogmatic Theology," by Rev. Sylvester J. Hunter, were issued, and a second edition was made of "An Outline of Systematic Theology," by E. H. Johnson, D. D., to which Henry G. Weston contributed an outline of ecclesiology. "The Doctrine of the Church and of Last Things," by Rev. Francis J. Hall, appeared in "Theological Outlines." "The Messiah of the Apostles" contained, avowedly, the confession of faith of Dr. Charles A. Briggs, and was the third of the series of volumes begun with "Messianic Prophecy" in 1886, and followed with "The Messiah of the Gospels" last year. "The Christ of To-day" was the theme of Dr. George A. Gordon; Dr. (now Bishop) Henry Y. Satterlee drew the distinction between "A Creedless Gospel and the Gospel Creed," and Frederick Palmer made "Studies in Theologic Definition underlying the Apostles' and Nicene Creeds"; "Christian Evidences" were again examined by Dr. Ezekiel Gilman Robinson, and J. S. Black traced the relation of "The Christian Consciousness" to evolution in morals and in doctrine. Dr. Alvah Hovey wrote on "Christian Teaching and Life," and in "Doctrine and Life" Prof. George Barker Stevens made a study of some of the principal truths of the Christian religion in their relation to Christian experience. The Bishop Paddock Lectures for 1895 were delivered by Dr. Robert B. Fairbairn upon "The Unity of the Faith as influ-

enced by Speculative Philosophy and Logical inference"; "The Preacher and his Place" were the theme of the Lyman Beecher Lectures on preaching, delivered at Yale University by David H. Greer, D. D.; the Bohnen Lectures for the year were given by Bishop Hugh Miller Thompson upon personality and responsibility, and entitled "The World and the Wrestlers"; Bishop J. M. Thoburn delivered addresses upon "The Christless Nations" at Syracuse University on the Graves foundation; "Light on Current Topics," the Bennett Lectures for 1895, were edited by James Reed, and the Carew Lectures for 1894 by Dr. E. B. Andrews, upon "Wealth and Moral Law," were also published. Those for 1895, on the same foundation, were by Dr. Charles Cuthbert Hall upon "Qualifications for Ministerial Power." The Lowell Lectures were given by Dr. Philip Stafford Moxom upon the Church in the first three centuries, under the title of "From Jerusalem to Nicæa." "The Breath of God," by Rev. Frank Hallam was a sketch, historical, critical, and logical, of the doctrine of inspiration; Dr. Marvin R. Vincent contributed two pamphlets on the same subject, "Biblical Inspiration and Christ" and "That Monster, the Higher Critic"; Andrew C. Zenos stated "The Elements of the Higher Criticism"; Edwin Stutely Carr traced "The Development of Modern Religious Thought, especially in Germany"; Dr. Barnard C. Taylor considered "The Historical Books of the Old Testament" in the series of "Bible Handbooks for Young People"; Dwight L. Moody supplied "Notes from my Bible, from Genesis to Revelation"; Dr. William H. Green took up "The Higher Criticism of the Pentateuch," and also dwelt upon "The Unity of the Book of Genesis." Prof. Ernest de Witt-Burton arranged "The Records and Letters of the Apostolic Age" for historical study; Rev. George W. Gilmore made a *résumé* of "The Johannine Problem" for English readers; "Studies in the Greek New Testament," by Richard M. Smith, were edited with an introduction by John J. Tigert; Prof. B. S. Dean published "An Outline of Bible History"; W. H. Thomson, M. D., was an authority upon "The Parables and their Home"; Bishop S. M. Merrill made a Scripture study of "Mary of Nazareth and her Family"; and Dr. W. G. Moorehead was the author of "Studies in the Mosaic Institutions." "Four Periods in the Life of the Church" were the theme of as many lectures by Henry Ferguson, and Dr. John Williams contributed an introduction to a study of "Lent Past and Present," by Herman Lilienthal. "The End from the Beginning," by Loring C. Webster, was a statement of divine prescience *vs.* divine nescience of future contingencies. Henry M. Alden published "A Study of Death," complementary to his previous thoughtful and suggestive volume, "God in His World"; Edmund Kelly considered the relation of "Evolution and Effort" to religion and politics; Thomson Jay Hudson, the author of "The Law of Psychic Phenomena," made "A Scientific Demonstration of the Future Life"; and Dr. John H. Denison presented what he believed to be "Christ's Idea of the Supernatural." J. C. Mabry gave "A Legal View of the Trial of Christ." "Faith and Science," by Henry F. Brownson, shows how revelation agrees with reason and assists it. "Agnosticism and Religion" was the title of a dissertation by Rev. George J. Lucas for the doctorate in theology at the Catholic University of America. "St. Paul's Vocabulary and St. Paul as a Former of Words" were the theme of 2 theses presented by Rev. Myron Winslow Adams to the Hartford Theological Seminary for the degree of Doctor of Philosophy, published in 1 volume. "Ruling Ideas of the Present Age" were treated by Washington Gladden; Rev. Henry R. Rose delivered 11 lectures on "Good Sense in Religion"; Dr. Cornelius Walker, "Lectures on Christian Ethics"; Dr. Thomas Murphy interpreted "The Messages to the Seven Churches of Asia"; "Make Way for the King" was the title given to a collection of week-day addresses by Dr. Flavius J. Brobst, of Chicago, delivered in



Boston; "Love, the Law of Universal Life" was a discourse upon Paul's eulogium on character by Dr. J. T. Wightman; Dr. George Dana Boardman published a dissertation on the thirteenth chapter of the First Epistle to the Corinthians, entitled "Coronation of Love"; from Dr. Adoniram Judson Gordon we had "The Ministry of the Spirit"; "How Christ came to Church," a spiritual autobiography, which was accompanied with a biographical sketch and interpretation of this "pastor's dream," by Rev. A. T. Pierson; "Risen with Christ," an address on the resurrection; and a short pamphlet on "Elements of Christian Character." "Christ and His Friends" was the title of a series of revival sermons by Dr. Louis Albert Banks, who also published another volume of temperance revival discourses, "The Saloonkeeper's Ledger," to which Dr. Theodore L. Cuyler furnished an introduction, and "Heavenly Trade Winds," a collection of 22 sermons. Rev. J. F. Love edited "The Southern Baptist Pulpit"; Dr. James D. Burrell preached "The Spirit of the Age, and Other Sermons"; from J. W. McGarvey we had "Sermons delivered in Louisville, Kentucky, June-September, 1894," while E. P. Tenney chronicled "The Triumphs of the Cross" in a large octavo volume of 700 pages, with upward of 300 woodcuts, to which special contributions were made by Edward Everett Hale, Theodore L. Cuyler, Alexander McKenzie, Bishops Huntington and Vincent, Dr. Dorchester, Gen. Booth, Dr. Parkhurst, Joseph Cook, and others. The seventh series of "Sermons," by Phillips Brooks, was edited by Rev. John Cotton Brooks. Dr. J. R. Miller sent out 3 books, "Life's Byways and Waysides," "The Blessing of Cheerfulness," and "Family Prayers for Thirteen Weeks"; Horatio W. Dresser dwelt at length upon "The Power of Silence"; and E. H. Kellar gave "Lessons in Soul Winning," with special reference to house-to-house visitation. Dr. G. M. Grant considered "Religions of the World in Relation to Christianity" in the "Guild Text-books"; Dr. William Elliot Griffiths collected into a volume lectures delivered on the Morse foundation upon "The Religions of Japan from the Dawn of History to the Era of Meiji"; and Edward Washburn Hopkins contributed "The Religions of India" to the series which it initiated of "Handbooks on the History of Religions," edited by Morris Jastrow, Jr. In the "National Church History Series," we had "The Church in America," by Bishop Leighton Coleman; new revised editions were issued of "Christianity in the United States" and "The Problem of Religious Progress," by Dr. Daniel Dorchester; Charles Woodruff Shields published essays upon "The United Church of the United States"; "Christ and the Church" were the theme of lectures delivered at Chautauqua, July 5-12, 1894, by different writers, to which Dr. Amory H. Bradford contributed an introduction; Bishop William Stevens Perry added to his long list of works on Church history "The Episcopate in America"; "The Historical Position of the Episcopal Church" was defined in a brief paper by Rev. Francis J. Hall; 2 volumes appeared in the "American Church History Series," one containing the "History of the Presbyterian Churches in the United States," by Dr. Robert Ellis Thompson, and the other "A History of the Reformed Church, Dutch; The Reformed Church, German; and the Moravian Church in the United States," by E. T. Corwin, D. D., J. H. Dubbs, D. D., and J. T. Hamilton. "The Presbyterian System" was explained by Rev. William H. Roberts; "Addresses delivered at the Quarter Century Anniversary of the Reunion of the Old and New School Presbyterian Churches," held in Pittsburg, Pa., May 23, 1895, by Dr. Francis Landy Patton, Dr. Henry Matthias Booth, and William H. Roberts, were collected into a volume; Vol. II. appeared of "Annals of Trinity Church, Newport, Rhode Island," by George Champlin Mason, completing the work; Charles H. Corey wrote "A History of the Richmond Theological Seminary," with reminiscences of thirty years' work among the

colored people; and William P. White, D. D., compiled and edited "The Presbyterian Church in Philadelphia," giving a camera and pen sketch of each church and institution. "The relation of Religion to Civil Government in the United States of America," by Isaac A. Cornelison, proved us a state without a church but not without a religion; William Prall delivered sermons upon "Civic Christianity"; Joseph Cook contributed an introduction to special lectures upon "Practical Christian Sociology" given by Rev. Wilbur F. Crafts before Princeton Theological Seminary and Marietta College; Dr. W. S. Rainsford preached a sermon which was published in pamphlet form on "The Church's Opportunity in the City To-Day." "Social Problems and the Church" was an article by Bishop Frederick D. Huntington, reprinted from the "Forum," and "The Christian State," as a political vision of Christ, was the theme of 6 lectures by Dr. George D. Herron. Archbishop (now Cardinal) Francis Satolli spoke on "Loyalty to Church and State"; lectures delivered under the auspices of the Church Club of New York in 1894 on "The Rights and Pretensions of the Roman See" were bound together; and John S. Hittell enlightened us as to "The Spirit of the Papacy." Dr. John T. Christian asked "America or Rome, Which?" A "Chronology of the Society of Friends, 1644-1828" was the work of Alice N. Townsend. Vol. V of Henry Graetz's "History of the Jews" was published, coming down to 1870 C. E., from 1648; Josephine Lazarus, a sister of the gifted poetess, made a plea against persecution in "The Spirit of Judaism"; and Isabel E. Cohen compiled "Readings and Recitations for Jewish Homes and Schools." To missionary literature belong "A Hundred Years of Missions," by Rev. Delavan L. Leonard; "The Islands of the Pacific from the Old to the New," a sketch of missions in the Pacific, by Rev. James M. Alexander; "Modern Missions in the East," by Edward A. Lawrence, D. D., with an introduction by Dr. Edward T. Eaton; "Missions at Home and Abroad," papers and addresses presented at the World's Congress of Missions, Oct. 2-4, 1893, compiled by Dr. E. M. Wherry; "The Iroquois and the Jesuits," by Dr. Thomas Donohoe; "Indian and White in the Northwest," by Rev. L. B. Palladino; "The Minute-Man on the Frontier," by Rev. W. G. Puddefoot; and a second series of "The Miracles of Missions," by Dr. Arthur T. Pierson, who published also "Lessons in the School of Prayer as Taught by the Lord Jesus Christ himself" and "Life-Power," devoted to character, culture, and conduct. Joseph Merlin Hodson delivered a discourse on the resurrection from the text "With what Manner of Body do they Come?" "The Lambs in the Fold" was a consideration of the relation of children to the Church and their proper Christian nurture, by Dr. John Thompson, a subject which was further set forth in "The Children, the Church, and the Communion," by Rev. Charles Cuthbert Hall; Rev. G. V. Reichel asked "What shall I tell the Children?"; Mary Hastings Foote wrote "A Life of Christ for Young People in Questions and Answers"; and Louise Seymour Houghton told of "Antipas, Son of Chuza, and Others whom Jesus loved," also for children. Jesse Lyman Hurlbut and Robert Remington Doherty prepared "Illustrative Notes, 1896," as a guide to the study of the Sunday-school lessons; Dr. A. F. Schauffer suggested "Ways of Working" for Sunday-school officers and teachers; "The Teacher and the Class" was a symposium of Sunday-school teaching; and M. C. Hazard wrote for "Home Classes" of the same. In "The Fishin' Jimmy Club" Dr. John Clark Hill made a brief contribution to evangelic liturgies. Dr. S. G. Wilson published "Occasional Addresses and Sermons." Vol. VIII of the second series of "A Select Library of Nicene and Post-Nicene Fathers," edited by Drs. Philip Schaff and Henry Wace, contained the "Letters and Select Works of St. Basil." "Church Harmonies New and Old" were edited by Charles R. Tenney and Leo R. Lewis; Rev. Robert Stuart MacArthur found "Quick Truths in Quaint



Texts"; "The Wise Men of Ancient Israel and their Proverbs" formed the theme of Charles Foster Kent; and Noah K. Davis entitled a study in the Hebrew lyrics "Juda's Jewels." Dr. T. A. Goodwin published "Lovers Three Thousand Years Ago as Indicated by the Song of Solomon." Volumes of selections were "Light Unto My Path," compiled by Dr. John Hall; "Beautiful Thoughts of Life Eternal," by Elizabeth Cureton; "Responsive Readings," selected from the Bible and arranged under subjects for common worship by Henry Van Dyke; "Gleanings, Pure, Pointed, and Practical" for Christian Endeavor and Epworth League members; and "Talmudic Sayings," which we owe to Rev. Henry Cohen. William Marshall treated of "Nature as a Book of Symbols," and Dr. David O. Mears wrote "Inspired through Suffering." "Literature of Theology," by Bishop John Fletcher Hurst, was a classified bibliography of theological and general religious literature, and a third revised and enlarged edition was published of Dr. John Wright's "Early Bibles of America." Parts II to V appeared of "A Hebrew and English Lexicon of the Old Testament," by Dr. Francis Brown and others. Two books, not strictly theological in character, but which dealt with the life of Christ on earth were: "As Others Saw Him," an anonymous work, which attracted much attention in England, and "Jesus at Nazareth: The Story of the Life of Jesus the Nazarene," by Peter von F., Anna F., and B. A. F. Mamrev. Part I of the "Woman's Bible" contained comments on the first five books of the Bible by leaders of the woman's suffrage movement.

**Unclassified.**—Supplement I of "The United States," by Josiah Dwight Whitney, covered "Population, Immigration, Irrigation"; in "The Building of a Nation" Henry Gannett traced the growth, present condition, and resources of our country, with a forecast of the future; William M. Black described "The United States Public Works"; and the "United States Treasury Bureau of Statistics published the seventeenth annual "Statistical Abstract of the United States" for 1894. Parts III-VII appeared of "Yankee Doodle at the Fair." A handsome volume by Samuel Ward Stanton upon "American Steam Vessels" contained over 200 illustrations of the most famous vessels built since 1807, while only those of the past five years were covered by "Steam Vessels and Marine Engines," by G. Foster Howell. "Screw Propellers and Marine Propulsion" was written for workmen by I. McKim Chase; W. J. Henderson wrote "The Elements of Navigation," and Howard Patterson published "Patterson's Naval Dictionary illustrated." James Mercier treated of the "Attack of Fortified Places"; Arthur L. Wagner, of "Organization and Tactics"; and F. N. Maude wrote "Military Letters and Essays." Vol. III appeared of "The Mineral Industry," edited by Richard P. Rothwell; G. W. Warnford Lock prepared a practical handbook of "Economic Mining"; J. T. Beard wrote on "The Ventilation of Mines"; and John R. Holibaugh on "The Lead and Zinc Mining Industry of Southwest Missouri and Southeast Kansas." Allen Hazen investigated "The Filtration of Public Water Supplies"; George E. Waring, Jr.'s "How to Drain a House" went through a second edition, with annotations bringing the matter down to date; the latest approved devices and appliances used in "Practical Hot Water Heating Steam and Gas Fitting" were set forth by James J. Lawler; Rolla C. Carpenter published an elementary treatise on "Heating and Ventilating Buildings." W. M. Patton was the author of a "Treatise on Civil Engineering"; F. Dye, of "Popular Engineering"; Charles H. Cochrane, of "The Wonders of Modern Mechanism"; P. G. Tait, of "Dynamics"; Reginald Bolton, of "Motive Powers and their Practical Selection"; and John T. Usher, of "The Modern Machinist." Albert W. Smith contributed "Elementary Machine Design"; John J. Flather, "Rope Driving"; Henry T. Bovey, "A Treatise on Hydraulics"; William Kent, a "Mechan-

ical Engineer's Pocket-Book"; J. H. Kinealy, "An Elementary Text-book on the Steam-Engine and Boilers," giving American practice; Frank Richards, "Compressed Air"; George W. Sutcliffe, "Steam-Power and Mill-Work"; De Volson Wood explained the "Theory of Turbines"; Maurice Fitzmaurice wrote on "Plate-Girder Railway Bridges"; and "The Memphis Bridge" alone was the subject of a handsome volume by George S. Morison. Parts I to III of "Pumps and Pump-Motors," by Philip R. Bjorling, were issued; E. Spon published a second edition, revised and brought up to date, of his first series of "Workshop Receipts"; G. J. Burns prepared a "Glossary of Technical Terms used in Architecture and the Building Trades," and F. E. Kidder offered designs and suggestions for "Churches and Chapels." "Railways and Other Ways," by Myles Pennington, contained reminiscences of canal and railway life, during sixty-seven years, and "Railways and their Employees" were the theme of Ossian D. Ashley. Norman Gardenier offered "Ready Help for Locomotive Engineers and Firemen," and in the "Engineering Series of Bulletins of Wisconsin University" appeared "Railway Signaling," by W. McGrafton; "Track," by L. F. Loree; "The Steel Construction of Buildings," by C. T. Purdy; "Some Practical Hints in Dynamo Design," by Gilbert Wilkes; and "The Evolution of a Switchboard," by Arthur Vaughan Abbott. Henry V. Poor completed the twenty-eighth annual issue of "Poor's Manual of Railroads" for 1895, and Edward E. Higgins presented "Street Railway Investments: A Study in Values, 1895." I. I. Redwood wrote on "Theoretical and Practical Ammonia Refrigeration," and J. E. Siebel was the author of a "Compend of Mechanical Refrigeration." Ernest F. Schwaab made a complete exposition of "The Secrets of Canning," Robert Johnson and Arthur Brunel Chatwood gave their attention to "Photography, Artistic and Scientific." Richard Marsden wrote on the development, principles, and practice of "Cotton Weaving"; a third edition of a "Practical Treatise on the Manufacture of Brick, Tiles, and Terra-Cotta," by Charles T. Davis, appeared, revised and rewritten, and a third edition, revised and enlarged, was also made of "Aluminium," by Joseph W. Richards; N. Jönsson Rose illustrated his own work on "Window and Parlor Gardening." George W. Martin drew up "Interest and Average Tables for Averaging Mercantile Accounts"; James L. Elwood prepared "Grain Tables," and Seymour Eaton, "Business Forms, Customs and Accounts for Schools," and "Woman in the Business World" was an anonymous collection of helps and hints to prosperity. Twenty-five lessons in good and bad advertising were published by Nathaniel C. Fowler, Jr., under the title of "Practical Publicity." "The Art Ornamenter and Modern Sign Writer up to Date" appeared, and Gustav Larsson published a "Handbook of Geometrical Wood Carving." Rev. Josiah Strong contributed an introduction to "The Armenian Crisis in Turkey," by Frederick D. Greene. D. Miller De Witt reviewed "The Judicial Murder of Mary E. Surratt." F. W. Woll was the author of an "Agricultural Calendar" and a "Dairy Calendar" for 1895; and "Infectiousness of Milk" contained the result of investigations made for the trustees of the Massachusetts Society for Promoting Agriculture. Henry C. Whitney wrote on "Marriage and Divorce" for popular and professional use, and "Vital Statistics of the New England States for 1892" were published in pamphlet form. Eugene Zieber was the author of a work upon "Heraldry in America," and John Elderkin of "A Brief History of the Lotus Club." T. S. G. Kirkpatrick gave "Simple Rules for the Discrimination of Gems." To mental science belong "Menticulture," by Horace Fletcher, and "God's Light as it came to me," anonymous. James R. Cooke told of "Hypnotism," how it is done, its uses and dangers; "Old Diary Leaves," by Henry Steel Olcott, told the true story of the Theosophical Society; Loren Albert Sherman ex-



plored the "Science of the Soul"; and "The Secret of Mankind" was revealed through an unknown source, including some brief account of the planet Mercury and its institutions. "The Dividing of a Time; or, The Fullness of the Times analyzed" came from Charles A. L. Totten; and John Hamlin Dewey, M. D., suggested "The New Testament Occultism," or miracle-working power interpreted as the basis of an occult and mystic science. "The Philosophy of P. P. Quimby," by Annetta G. Dresser, and "Mollie Fancher, the Brooklyn Enigma," by Abram H. Dailley, may be classed together. James Means edited "The Aeronautical Annual, 1895"; Susan Darling Safford collected "Quaint Epitaphs"; N. T. Oliver compiled "Lee's Priceless Recipes," which met wants in every department of life; and C. M. Stevans, "Lee's Condensed Cyclopædia." Important books which remain to be mentioned are Part II of "The Profession of Bookselling," by A. Growell; the "Annual American Catalogue, 1894"; Part I of the "American Catalogue, 1890-1895," covering A-H; "Lists of Books for Girls and Women and their Clubs," edited by Augusta H. Leypoldt and George Hles; "The Publishers' Trade List Annual for 1895"; Vol. I of "American Book-Prices Current," compiled by Luther S. Livingston; the "Annual Literary Index, 1894," prepared by William I. Fletcher and R. R. Bowker; "The English Catalogue of Books for 1894"; a "List of Subject-Headings for Use in Dictionary Catalogues" drawn up by a committee of the American Library Association (Gardner M. Jones, George E. Wire, and Charles A. Cutter); a "Comprehensive Index of the Publications of the United States Government, 1889-1893," by John G. Ames; "A Bibliography of Texas," by C. W. Raines; William K. Balch's "Complete Compendium of Universal Knowledge"; and "Appleton's Annual Cyclopædia and Register of Important Events of the Year 1894." "Harper's Book of Facts," compiled by Joseph H. Willsey and edited by Charlton T. Lewis, embraces science, literature, and art, brought down to the close of the year 1894.

**Voyages and Travels.**—No less than three distinct works upon "Constantinople" were published during 1895. That of Prof. Edwin A. Grosvenor, by far the most elaborate, was in two volumes, containing 250 illustrations and had an introduction by Gen. Lew Wallace. The fact that the author formerly held the professorship of history in Roberts College in the city of which he writes with enthusiasm fitted him peculiarly for the work which he undertook. F. Marion Crawford's "Constantinople" was illustrated by Edwin Lord Weeks, and gives us the city of to-day; while Mrs. Clara Erskine Clement (now Mrs. C. E. Waters) reviewed rather the history of "Constantinople, the City of the Sultans," in her volume uniform with those she has given us on Naples and Venice. Richard Harding Davis was interesting as ever "About Paris," Charles Dana Gibson supplying his illustrations, while Constance Fenimore Woolson's sketches of "Mentone, Cairo, and Corfu" were welcomed in this collected form. Isabel Florence Hapgood described her "Russian Rambles"; "Letters of a Baritone," by Francis Walker, told of Italy as well as art life, and Charles Godfrey Leland was charming as of old as "Hans Breithmann in Germany—Tyrol." Walter Cranston Larned dwelt upon "Churches and Castles of Mediæval France"; Caroline Earle White chronicled "A Holiday in Spain and Norway"; "In the Land of Lorna Doone and Other Pleasurable Excursions in England" came to us from William H. Rideing; "Brown Heath and Blue Bells" from William Winter; Noah Brooks outlined "The Mediterranean Trip." "Literary Landmarks of Jerusalem" were explored by Laurence Hutton. Two volumes contain "My Early Travels and Adventures in America and Asia," as told for our benefit by Henry M. Stanley; Frank Vincent reported a tour of exploration in "Actual Africa; or, The Coming Continent." John R. Spears in "The Gold-Diggings of Cape Horn" made a study of life

in Tierra del Fuego and Patagonia; H. C. Mercer visited the "Hill Caves of Yucatan"; and Charles A. Stoddard spent summer days in winter months "Cruising among the Caribbees." Julius A. Palmer, Jr., was heard from "Again in Hawaii," "Out of the East" was a volume of reveries and studies in new Japan, from the fascinating pen of Lafcadio Hearn, and Henry T. Finck was eloquent also over "Lotus-Time in Japan"; Alfred Parsons illustrated his own "Notes on Japan," and Edward S. Wilson took "An Oriental Outing." "From the Black Sea through Persia and India" was a handsome volume, of which Edwin Lord Weeks was at once author and illustrator; Rev. Samuel Graham Wilson described "Persian Life and Customs" after a fifteen years' residence in that country as a missionary; and William Woodville Rockhill's "Diary of a Journey through Mongolia and Tibet in 1891 and 1892" was published by the Smithsonian Institution, under whose auspices, partly, he made the same. Chester Holecombe described for us "The Real Chinaman" after a residence of many years in that country as *chargé d'affaires*; a new edition was published of Dr. William Butler's "The Land of the Veda," first issued in 1871; "On India's Frontier; or, Nepal, the Gurkhas' Mysterious Land" was illustrated from photographs, often obtained at great risk by the author, Henry Ballantine, American consul to Bombay, and M. M. Shoemaker visited "Trans-Caspia," the sealed provinces of the Czar. "This Goodly Frame the Earth," by Francis Tiffany, conveyed stray impressions of scenes, incidents, and persons in a journey touching Japan, China, Egypt, Palestine, and Greece; Bishop Charles B. Galloway made "A Circuit of the Globe," and Rev. Thomas H. Stacy went "In the Path of Light around the World." Hezekiah Butterworth continued the "Zig-Zag" Series with "Zig-Zag Journeys around the World." William T. Adams (Oliver Optie) carried his young people "Half Round the World" and "Across India," in the "All-Over-the-World Library." Other books of travel strung on a thread of fiction were Thomas W. Knox's "Hunters Three" and "In Wild Africa," the last in the "Travel Adventure Series." "Alaska" had its history, resources, gold fields, routes, and scenery described at length by Miner W. Bruce; Henry M. Field termed the same country "Our Western Archipelago"; and James T. Dennis also told of what he saw "On the Shores of an Inland Sea." V. Wilson prepared a "Guide to the Yukon Gold Fields." Returning to our own mainland we have, first, a superb volume on the "Cañons of the Colorado," from Major J. W. Powell, who was the first to explore their wonders, and who has illustrated his work with photographs taken by himself. Charles and Lilian Westcott Eiekemeyer told and photographed what they saw "Among the Pueblo Indians," and "In the Heart of the Bitter-Root Mountains," by "Heelawa" (A. L. Artunan Himmelwright), told the story of the Carlin hunting party September-December, 1893. "The Yellowstone National Park: Historical and Descriptive" we owe to Hiram M. Chittenden. A valuable old work was revived in a new edition in 3 volumes of the "Expeditions of Zebulon Montgomery Pike to Head-waters of the Mississippi River through Louisiana Territory, and in New Spain, during the Years 1805-6-7," now reprinted in full from the original of 1810, with a copious critical commentary, a memoir of Pike, and other interesting material from Prof. Elliott Coues, who went over the whole ground, and made a canoe voyage in order to give his remarks the weight of personal observation. Bishop O. P. Fitzgerald published "California Sketches, New and Old," and Julian Ralph described "Dixie." "New Orleans, the Place and the People," by Grace King, was illustrated by Frances E. Jones. Teresa Dean picked up "White City Chips"; Rev. P. C. Croll examined "Ancient and Historic Landmarks in the Libanon Valley" of Central Pennsylvania; Gen. H. V. Boynton was the author of an historical guide to "The National Military Park, Chickamauga-Chattanooga." "The Canadian



Guide Book" of Charles G. D. Roberts was issued; "Coneord, Historie, Literary, and Pieturesque," by George B. Bartlett, went through the fifteenth revised edition; Part I of "Pieturesque Worcester" in the "Pieturesque Series" was written by Elbridge Kingsley and Frederiek Knab, and was devoted to the "City and Environs." Henry R. Blaney gave reproductions of etchings in half tone of "Old Boston," and "The Boston Picture Book" also appeared. A new edition was made of Theodore Roosevelt's "New York" in the series of "Historie Towns" with a postscript, 1890-'95; and John J. Post published an expensive "Abstract of Title to Kip's Bay Farm in the City of New York, with all Known Maps relating thereto, together with the Water Grants on the East River, adjoining Said Farm." "A Brief Descriptive Geography of the Empire State," was published for the use of schools, by C. W. Bardeen, and Appletons' handbooks of summer and winter resorts were issued as usual.

The following are the figures of book production in the United States in 1895, from the columns of the "Publishers' Weekly":

CLASSIFICATION.	1894.		1895.	
	New books.	New editions.	New books.	New editions.
Fiction.....	573	156	1,050	64
Law.....	440	45	450	51
Theology and religion.....	442	26	471	35
Education and language.....	426	16	456	32
Literary history and miscellany.....	208	29	455	13
Juvenile.....	315	29	365	10
Political and social science.....	233	21	313	22
Poetry.....	183	133	294	15
Physical and mathematical science.....	141	24	198	24
History.....	163	24	185	8
Biography, memoirs.....	140	21	167	13
Medical science, hygiene.....	118	42	141	22
Description, travel.....	116	28	124	27
Fine arts and illustrated books.....	127	11	133	7
Useful arts.....	113	20	100	11
Mental and moral philosophy.....	42	7	55	6
Domestic and rural.....	42	9	43	4
Sports and amusements.....	50	6	34	4
Humor and satire.....	10		32	
Totals.....	3,837	647	5,101	363
		3,837		5,101
		4,484		5,469

**LITERATURE, BRITISH, IN 1895.** The record of book production in England during the year showed a total of 6,516 volumes, against 6,485 in 1894, a difference of about 30 only; but of this number, it is to be noted, 5,581 were new books, and but 935 new editions, while of the books of the preceding year, 5,300 were new works, and new editions numbered 1,185. It is a little curious to note that in this increase of publication of new books there is a falling off of works of fiction (in which juvenile books are to be included). But 1,584 new novels and tales appeared, against 1,544 in 1894, and but 347 new editions, as compared with 366 the year previous. Less than half as many new works on law and jurisprudence were issued, and there were fewer new books of voyages and travels, while there was a remarkable gain in the departments of history and biography, of poetry and the drama, and of medicine and surgery, and there was also an increase in educational, classical, and philological works, in *belles-lettres*, and in works on theology and political and social science. In summing up the quality of the literature of the year, it may be said to be of unusual excellence.

**Biography.**—As usual, several works of lasting value are to be found in this department, and glimpses of individualities worthy of note are afforded in two or three instances through the best of all mediums, personal correspondence. "Letters of Samuel Taylor Coleridge" were edited by Ernest Hartley Coleridge, filling 2 volumes; and again 2 volumes of "Letters of Matthew Arnold, 1848-1888," collected and arranged by George W. E. Russell, presented their writer in a twofold capacity of disagreeable critic and charming man of family; "The Life and Letters of Edward A. Freeman," in 2 volumes, we owe to W. R. W. Stephens, Dean of Winchester, and for twenty years a near and dear friend of the historian; and "Dante Gabriel Rossetti; His Family Letters" were published in 2 volumes, with a memoir by William M. Rossetti. "Letters and Verses of Arthur Penrhyn Stanley, D. D., between the years 1829 and 1881," were edited by Rowland E. Prothero, supplementing the "Life and Correspondence," by the same author and Dean Bradley, published last year; and 2 volumes contained the correspondence addressed by Robert Louis Stevenson to Sidney Colvin, November, 1890-October, 1894, entitled "Vailima Letters." "The Life and Adventures of George Augustus Sala, Written by Himself," and "Memoirs of an Author," by Percy Fitzgerald, both in 2 volumes, appeared simultaneously and were warmly received from these two of Dickens's "Young Men," and the latter also edited a new edition of the "Life, Letters, and Writings" of Charles Lamb, in 6 volumes. Anna M. Stoddart gave us a biography of "John Stuart Blackie," in 2 volumes; "The Letters of Edward Fitzgerald to Fanny Kemble" were collected and edited by William Aldis Wright, and in some ways supplementary to the volume was the portrayal of "Two Suffolk Friends," by Francis Hinde Groome, who pleasingly recalled his father, Archdeacon Groome, and the charming and versatile personality of Fitzgerald. John Charles Tarver made us acquainted with "Gustave Flaubert, as seen in his Works and Correspondence," and "The Life and Writings of Turgot" were edited for English readers by W. Walker Stephens. A remarkable and varied career is chronicled in Sir Joseph Crowe's "Reminiscences of Thirty-five Years of my Life," and yet another autobiography of intense interest was "Memories and Studies of War and Peace," by Archibald Forbes, the famous war correspondent. "Memories and Thoughts of a Life," by William O'Connor Morris, relate principally to the Irish question; "Memories" of W. J. Linton included many important events and famous people; Rudolph Lehman contributed "An Artist's Reminiscences"; Richard Le Gallienne, 2 volumes of "Retrospective Reviews"; and W. F. A. Gaussen, "Memories of a Short Life." Reminiscences of "Platform, Press, Politics, and Play" came from T. H. S. Escott; "My Lifetime," from John Hollingshead; and Alexander Innes Shand wrote "The Life of General Sir E. Bruce Hamley," in 2 volumes. Sir G. F. Duckett published "Anecdotal Reminiscences of an Octo-Nonagenarian"; "Threescore Years and Ten" contained the reminiscences of the late Sophia Elizabeth De Morgan, edited by her daughter, Mary A. De Morgan; "Journals and Correspondence of Lady Eastlake," in 2 volumes, were edited by her nephew, Charles Eastlake; and "The Memorials of Mrs. Henry Wood" were compiled by her son, C. W. Wood. Two volumes were devoted by Maria C. Bishop to "A Memoir of Mrs. Augustus Craven (Pauline de la Ferronnays), Author of 'Le Reet d'une Sœur.'" "Days of a Soldier's Life" was the title given to letters written by the late Gen. Sir C. P. Beauchamp Walker during active service; and yet another distinguished British officer, Gen. Sir John Adye, published "Recollections of a Military Life." Thomas Henry Thornton was the author of "Col. Sir Robert Sandeman: His Life and Work on our Indian Frontier." "The Memoir of William Wolseley, Admiral of the Red Squadron" was written by his granddaughter, Mary C. Innes, and Canon Church recalled the picturesque figure of



"Sir Richard Church," the fighting Quaker in the war of Greek Independence. "A Veteran of 1812" was the title of a life of James Fitzgibbon by Mary A. Fitzgibbon. T. Douglas Murray and A. Silva White collaborated on "Sir Samuel Baker: A Memoir," and 2 volumes contained "The Life and Correspondence of Sir Bartle Frere," by John Martineau. "The Life of Sir James Fitzjames Stephens" was written in the most admirable manner by his brother, Leslie Stephen, and Mrs. Salis Schwabe published a miscellaneous collection of documents, entitled "Reminiscences of Richard Cobden." "Papers and Addresses," political and miscellaneous, of Lord Brassey, covering the period of 1861-'94, were arranged and edited by Arthur H. Loring; and yet another volume of "Papers and Addresses: Imperial Federation and Colonization from 1880 to 1894," we owe to the same editor, assisted by R. J. Beadon. R. E. M. Peach wrote upon "The Life and Times of Ralph Allen." From S. Tytler we had a volume of "Tudor Queens and Princesses"; Millieent Garrett Fawcett wrote a "Life of Her Majesty Queen Victoria"; Mary Spenceur Warren, a biographical sketch of "The Princess of Wales"; and Eliza F. Pollard, "The Story of Princess Alice," the last in the "Splendid Lives Series." Lectures delivered by James Anthony Froude upon "English Seamen in the Sixteenth Century" during the Easter terms 1893-'94 were collected into a volume, and a new edition was made of Southey's "English Seamen," edited, with an introduction, by David Hannay. "Heroes of the Victoria Cross," by T. E. Toomey, was supplemented by "For Valor; the 'V. C.,'" by J. E. Muddock. "The Decline and Fall of Napoleon" was the subject of a volume by Field-Marshal Viscount Wolseley, and "Napoleon's Last Voyages" was the title given to the diaries of Admiral Sir Thomas Ussher and John R. Glover, secretary to Rear-Admiral Cockburn, bound in one volume. "The Rise of Wellington" came from Field-Marshal Lord Roberts. In the "Heroes of the Nations Series" appeared "Louis XIV and the Zenith of the French Monarchy," by Arthur Hassall; "Prince Henry the Navigator," by Charles Raymond Beazley; and "Julian, Philosopher and Emperor," by Alice Gardner. "English Men of Action" included "Colin Campbell, Lord Clyde," by Archibald Forbes; "Wolfe," by A. G. Bradley; and "Nelson," by John Knox Laughton. The single addition to the "Rulers of India" was "John Russell Colvin, the last Lieutenant Governor of the Northwest under the Company," by Sir Auckland Colvin, while in the new series of "Public Men of To-day" there were four admirable issues, "Ameer Abdur Rahman," by S. Wheeler; "Li Hung Chang," by Prof. Robert K. Douglas; "M. Stambuloff," by A. Hulme Beaman; and "The German Emperor William II," by Charles Lowe, who also published "Prince Bismarck," a digest of his two-volume biography of the great statesman, which appeared in 1885, and "Bismarck's Table Talk." "Lord John Russell" was added by Stuart J. Reid to the "Prime Ministers of Queen Victoria Series." "The Right Honorable W. E. Gladstone," by the experienced and gifted journalist Henry W. Lucy was the initial volume of the "Statesmen Series." "English Leaders of Religion" were respectively "Augustine of Canterbury," by Dr. E. L. Cutts, and "William Laud," by William Holden Hutton. "Masters of Italian Music," by R. A. Strentfield, appeared in the series of "Masters of Contemporary Music." Kenyon West came forward with a timely volume upon "The Laureates of England," containing much useful information. "Hans Christian Andersen: A Biography" came from R. Nisbet Bain. G. G. Alexander wrote on "Lao-Tsze: The Great Thinker," while after the lapse of more than a century the first formal "Life of Adam Smith" was written by John Rae. "A Memoir of George Higinbotham, an Australian Politician and Chief Justice of Victoria" was published by his son-in-law, Edward E. Morris, and Joseph Pope was the author of "Memoirs of the Right Hon. Sir John

Alexander Macdonald, First Prime Minister of the Dominion of Canada," in 2 volumes. Sir Robert Ball told the life-stories of "The Great Astronomers"; Sir Archibald Geikie contributed an excellent "Memoir of Sir Andrew Crombie Ramsay"; and Sir Henry E. Roseoe, "John Dalton and the Rise of Modern Chemistry." "The Life of Sir Henry Halford, Bart., M. D.," known as "The Lord Chesterfield of all Medical Practitioners," was written by William Munk, M. D., at the request of the College of Physicians, and "Pioneer Work in opening the Medical Profession to Women" was a collection of autobiographical sketches by Elizabeth Blackwell, M. D. Alfred T. Story, the author of the "Life of John Linnell," gave us "James Holmes and John Varley," the miniature painter and his associate; "James Wolf, Animal Painter" was the theme of A. H. Palmer; and yet two other artists were "George Morland, Painter, London, 1763-1804," by R. Richardson, and "John Thomson of Duddington, Pastor and Painter," a memoir by W. Baird. F. E. Baines told of "Forty Years at the Post Office." "Letter Books of John Hervey, First Earl of Bristol," in 3 volumes, and "The Diary of John Hervey, First Earl of Bristol" contained records of great variety and interest, as they covered the reigns of no less than 6 English sovereigns, with 4 of whom Lord Bristol was personally acquainted, and the "Life of Sir Robert Dudley, Earl of Warwick and Duke of Northumberland," by J. Temple Leader, recalled a remarkable personality. "Memoirs of the Verney Family during the Commonwealth, 1650-1660" were compiled from letters and illustrated from portraits, in 3 volumes, which we owe to Margaret M. Verney, and Augustus J. C. Hare chronicled the philanthropic Quaker family known as "The Guerneys of Earham," in 2 volumes. "The First Whig" was an account of the parliamentary career of William Sacheverell, by Sir George Sitwell; Lord Edmond Fitzmaurice derived "The Life of Sir William Petty, 1623-1687" chiefly from private documents hitherto unpublished; and Dr. John Todhunter wrote a "Life of Patrick Sarsfield, Earl of Lucan." "Letters written by Sir Samuel Hood in 1781-'2-'3" were edited by David Hannay. P. Hume Brown wrote "John Knox: A Biography," in 2 volumes, and Mrs. Florence A. Maccunn added much that was supplementary in her smaller work bearing the name of the great reformer. Rev. Montague Fowler chronicled "Some Notable Archbishops of Canterbury," and to religious biography belong also "The Last Abbot of Glastonbury and his Companions," by Francis Aidan Gasquet, D. D.; "The Life and Times of James Ussher, Archbishop of Armagh," by J. A. Carr; "Edward Harold Browne, D. D., Lord Bishop of Winchester," by G. W. Kitchin, D. D., Dean of Durham; the "Life and Letters of John Cairns, D. D.," by Alexander R. Macewen; "The Recollections of the Very Rev. G. D. Boyle, Dean of Salisbury"; and "Fifty Years; or, Dead Leaves and Living Seeds," by Rev. Harry Jones. "The Personal Life of David Livingstone" was written by W. G. Blaikie, chiefly from his unpublished journals and correspondence in the possession of his family; "Bishop Heber, Poet and Chief Missionary to the East, Second Lord Bishop of Calcutta, 1783-1826" was from the pen of George Smith; "John Horden, Missionary Bishop," by Rev. A. R. Buckland, appeared in the "Splendid Lives Series"; and Rose E. Faulkner wrote of "Joseph Sidney Hill, First Bishop in Western Equatorial Africa." From Agnes Gibberne we had "A Lady of England: The Life and Letters of Charlotte Maria Tueker," so long known only as A. L. O. E. The "Life and Correspondence of T. V. French," by Rev. H. Birks, filled 2 volumes; a "Memoir of Richard Busby, D. D. (1606-1695)," by G. F. R. Barker, was accompanied with some account of Westminster School in the seventeenth century; and David Masson contributed a sketch of "James Melvin, Rector of the Grammar School at Aberdeen," known as the "supreme Latinist" and held



in the highest esteem as a man. "Benjamin Jowett, Master of Balliol" was the subject of a personal memoir by Lionel Tollemache, and R. A. Armstrong wrote the life of "Henry William Crosskey." A melancholy interest attaches to "The Love Letters of Mr. H. and Miss R.," edited by Gilbert Burgess; E. A. Vizetelly proposed to tell "The True Story of the Chevalier D'Eon," and Francis Gerard revived "Some Celebrated Irish Beauties of the Last Century." "The Diversions of a Prime Minister," by Basil Thomson, relate to the misdoings of Hon. and Rev. Shirley Baker in the Tonga kingdom, and from Rev. Edwin Lloyd we had sketches of "Three Great African Chiefs." A new edition was issued of Horace Walpole's "Memoirs of the Reign of King George the Third," first published by Sir Denis Le Marchant, Bart., and now re-edited by G. F. Russell Barker in 4 volumes, with 16 portraits; H. Buxton Forman edited a complete revised edition of the "Letters of John Keats"; Vol. VI was sent out of H. B. Wheatley's edition of Pepys's "Diary"; and Austin Dohson contributed an introduction to the "Memoirs of a Protestant condemned to the Gallies of France for his Religion," translated by Oliver Goldsmith, now reissued in 2 volumes. Vol. IV also appeared of "A Literary and Biographical History, or Biographical Dictionary of the English Catholics, from the Breach with Rome in 1534 to the Present Time," by Joseph Gillow, and Vols. XLI, XLII, XLIII, and XLIV of the "Dictionary of National Biography," edited by Sidney Lee.

**Essays.**—"Anima Poete" was the appropriate title given to the delightful extracts from the unpublished notebooks of Samuel Taylor Coleridge, edited by Ernest Hartley Coleridge, and Walter Pater was sadly recalled by 2 volumes of essays prepared for the press by Charles L. Shadwell, entitled respectively "Greek Studies" and "Miscellaneous Studies." "Aristotle's Theory of Poetry and Fine Art" was treated in a masterly manner by Prof. S. H. Butcher, and George C. W. Warr studied "The Greek Epic." Lectures on "Latin Poetry," delivered by Prof. R. Y. Tyrrell, of Dublin University, on the Percy Turnbull Memorial Foundation in the Johns Hopkins University in 1893, were collected into a volume of delightful literary flavor, while to a more recent period belong "Corrected Impressions," by George Edward Bateman Saintsbury, a collection of essays on Victorian writers. From the same author we have a second series of "Essays in English Literature, 1780-1860"; Edward Dowden contributed "New Studies in Literature"; and from Sir Herbert Maxwell we had "Post Meridiana," a volume of afternoon essays. John Churton Collins published "Essays and Studies"; James Ashcroft Noble, "Impressions and Memories"; F. W. Waitham, "Indolent Impressions"; E. B. Chancellor, "Literary Types," essays in criticism; while a second series of "Lectures and Essays" by the late Henry Nettleship was edited by F. Haverfield. "The Rod, the Root, and the Flower" was the title of poetic aphorisms in prose form, by Coventry Patmore; John Davidson offered "Sentences and Paragraphs"; and Ouida, "Views and Opinions." Sidney Whitman gave us "Teuton Studies." "The Literature of the Georgian Era," by William Minto, was edited with a biographical introduction by William Knight; and W. J. Courthorpe contributed "A History of English Poetry." "Studies in Early Victorian Literature" were made by Frederic Harrison, Hugh Walker devoted a volume to "The Greater Victorian Poets," and W. S. Lilly lectured on "Four English Humorists of the Nineteenth Century." "The Early History of the Renaissance in England" was the subject of the Rede Lecture for 1895, by Bishop Creighton. J. Oates examined "The Teaching of Tennyson," and M. Trevelyan dwelt upon "The Land of Arthur." "The Arthurian Epic" was the subject of exhaustive study by S. H. Gurneen. "The Story of Early Gaelic Literature," by Douglas Hyde, appeared in the "Irish Library," edited by Sir Charles Gavan Duffy. "The Influence of Dante on

Modern Thought" was traced by H. Oelsner; and yet again we have "Dante: His Times and his Work," by Arthur J. Butler. Henry Thornton Wharton issued a third edition of his "Sappho," and Prof. Darcy Wentworth Thomson prepared "A Glossary of Greek Birds." "Old World Japan" contained legends of the "Land of the Gods," retold by Frank Rinder, with 20 illustrations, by T. H. Robinson. "Bozland: Dickens's Places and People" was, of course, by Percy Fitzgerald; "In a Walled Garden" was a pleasing collection of papers by Bessie Rayner Belloe; and "The Table-talk of Shirley," by John Skelton (Shirley), contained reminiscences of, and letters from Froude, Thackeray, Disraeli, Browning, and others. Edward Berdoe edited "Browning Studies," select papers by members of the Browning Society, with an introduction; R. Bridges contributed "John Keats: A Critical Essay"; and Adolphus Alfred Jack, "Thackeray: A Study." "Euripides, the Rationalist" purported to be a study in the history of art and religion, by Dr. A. W. Verrall; P. J. Cooke prepared "A Handbook of the Drama"; T. Fairman Ordish made a study of "Early London Theatres in the Fields." Henry Arthur Jones traced "The Renaissance of the English Drama, 1883-1894" in a collection of essays and lectures. A. C. Calmoun supplied "Fact and Fiction about Shakespeare"; John Corbin advanced an ingenious theory as to the madness of "The Elizabethan Hamlet" and its comic aspect; and Vol. I was issued of "Shakspeare and his Time: Under James I.," in the series of "English Writers," carried almost to completion by Prof. Henry Morley, and finished, after his death, by W. Hall Griffin. The seventh series of "The Bookworm" appeared; W. Roberts, in "The Book-hunter in London," made historical and other studies of collectors and collecting; H. P. Horne wrote upon "The Binding of Books"; and W. Y. Fletcher, upon "Bookbinding in France." "The History of 'Punch'" was written by M. H. Spielman, and "A Jorum of 'Punch'" with those who helped to brew it, being the early history of "The London Charivari," came from Athol Mayhew. The second volume of "The Ruling Races of Prehistoric Times," by J. F. Hewett, completed that work; "The Legend of Perseus," in 2 volumes, by Edwin S. Hartland, was also a study of tradition in story, custom, and belief; while from Surgeon-Major L. Austine Waddell came an exhaustive work upon "The Buddhism of Tibet," written and illustrated in large part from original Tibetan sources. Evelyn Cecil traced the history of "Primogeniture" in various countries and the practical effects of its existence; Frederic Seebohm outlined "The Tribal System in Wales"; and Hugh E. Seebohm was the author of an essay "On the Structure of Greek Tribal Society." B. Hammond investigated "The Political Institutions of the Ancient Greeks." From Albert D. Vandam came odd chapters and sketches of "French Men and French Manners." Frances Elliot detailed "Roman Gossip," while T. P. O'Connor retold "Some Old Love Stories." "Doctor Johnson and the Fair Sex" was, as claimed, a study in contrasts, by W. H. Craig. W. Andrews vouchsafed "The Doctor in History, Literature, Folklore, etc." Out-of-door life was the theme of several charming volumes. John Bickerdyke detailed "Days of my Life on Waters Fresh and Salt"; W. Warde Fowler made "Summer Studies of Birds and Books"; C. Scott was heard from "Among the Apple Orchards"; Duncan Fraser told of "Riverside Rambles"; Edward Step, of "Wayside and Woodland Blossoms" and what he saw "By Vocal Woods and Waters"; Donald McDonald, of "Sweet Scented Flowers"; "Bird Notes," caught by Jane Mary Hayward, were edited by Emma Hubbard; "Birds, Beasts, and Fishes of the Norfolk Broadland" were described by P. H. Emerson; and "Inmates of my House and Garden," by Mrs. Eliza Brightwen. "The Annals of a Quiet Valley" were edited by John Watson from the reminiscences of "A Country Parson," and "Furth



in Field," by Hugh Haliburton (J. Logie Robertson), was a volume of essays on the life, language, and literature of old Scotland. Marian Roalfe Cox wrote "An Introduction to Folklore"; F. Edward Hulme, "Natural History Lore and Legend"; W. H. Mallock made "Studies of Contemporary Superstition"; F. T. Elworthy devoted 2 volumes to "The Evil Eye"; P. H. Ditchfield added "Books Fatal to their Authors" to the "Book-lovers' Library"; and T. F. Thiselton Dyer collected "Strange Pages from Family Papers." "Ancient and Holy Wells of Cornwall" were described by M. and L. Quiller-Couch, and "Curious Church Customs and Cognate Subjects" were edited by William Andrews. "The Wonderful Wapentake" was the theme of J. S. Fletcher, "A Son of the Soil." "A Descriptive Catalogue of the Manuscripts in the Fitz-William Museum" was prepared by Montague Rhodes James, and the first series was issued of "Facsimiles of Royal, Historical, Literary, and other Autographs in the Department of Manuscripts, British Museum." Vols. IV, V, and VI completed Prof. Walter W. Skeat's monumental edition of "The Complete Works of Geoffrey Chaucer"; from William S. Sonnenschein came "A Reader's Guide to Contemporary Literature," being the first supplement to "The Best Books," and Vols. III and IV of "English Prose Selections" were published. Vol. I of "A Literary History of the English People" were welcomed from J. J. Jusserand, who also contributed "English Essays from a French Pen." "The Troubadours and Courts of Love," by John F. Rowbotham, appeared in the "Social England Series."

**Fiction.**—Several distinguished writers of fiction sent out novels which attracted much attention and comment, though none scored such a success as "Trilby" did the year previous. George Meredith published "The Amazing Marriage" and a volume containing three short stories, "The Tale of Chloë," "The House on the Beach," and "The Case of General Ople and Lady Camper." "Jude the Obscure," by Thomas Hardy, gave rise to much adverse criticism, although admitted a work of genius; "The Wood beyond the World" was another of William Morris's prose poems; Mrs. Humphrey Ward told "The Story of Bessie Costrell," while "The Days of Auld Lang Syne," by Ian Maclaren (Rev. John Maclaren Watson), kept up the acquaintance made with Drumtochty folk in "Beside the Bonnie Brier Bush." "Strangers at Lisconnel" was the title of a second series of "Irish Idylls," by Jane Barlow, who published also "Maureen's Fairing." Israel Zangwill, the author of "The Children of the Ghetto," won commendation by his story of "The Master," and Rudyard Kipling delighted old and young readers with "The Second Jungle Book." Sir Walter Besant wrote "Beyond the Dreams of Avarice" and "In Deacon's Orders, and Other Stories"; "When Valmond came to Pontiae" was a story of a lost Napoleon vividly told by Gilbert Parker, while Stanley J. Weyman was represented by two stirring French stories, "The Red Cockade" and "From the Memoirs of a Minister of France," and by the "King's Stratagem, and Other Stories"; W. Clark Russell, by "The Good Ship *Mohock*," "The Convict Ship," "Heart of Oak" and "The Phantom Death, and Other Stories"; George Moore, the author of "Esther Waters," made three studies of "Celibates" included in one volume; and a new writer of marked ability, Frances Frederica Montresor, published "Into the Highways and Hedges" and "The One who looked on." Robert Buchanan wrote "Lady Kilpatrick" and "Diana's Hunting" and Douglas Sladen "A Japanese Marriage," "Tween Gloamin' and the Mirk" was, as its name betokens, a collection of Scotch stories, by Sir Hugh Gilzean Read, and "Sunshine and Hoar," by Gabriel Setoun, gave some further glimpses of life at Barneraig. Joseph Hooking pronounced "All Men are Liars"; Lily Dougall added to the reputation gained by her "Beggars All," sending out "The Mermaid," "The Zeit-Geist,"

and "A Question of Faith"; S. R. Crockett showed he had lost none of his power in "Men of the Moss-Hags," "A Galloway Herd," and "Bog-Myrtle and Peat"; and "Slain by the Doones, and Other Stories" suggest, of course, R. D. Blackmore. "My Lady Nobody" came from Maarten Maartens (J. M. W. van der P. Schwartz); "Billy Bellew," from W. E. Norris; "The Martyred Fool," from David Christie Murray; "Noëmi," from Sabine Baring-Gould; "A Woman of Impulse" and a "London Legend," from Justin H. McCarthy; and "The King of Andaman," from J. Maclaren Cobban. Mrs. Oliphant was prolific as ever, writing the "Story of a Governess" and that of "Two Strangers"; "The Way of a Maid" was described by Mrs. Katharine Tynan Hinkson; and Sara Jeannette Duncan (Mrs. Everard Cotes) was particularly happy in her two tales of Indian life, "Vernon's Aunt" and "The Story of Sonny Sahib." "The Chronicles of Count Antonio" and "A Man of Mark," by Anthony Hope (A. H. Hawkins), "The Sowers," by Henry Seton Merriman, "An Arranged Marriage," by Dorothea Gerard, "The Impregnable City" and "The Little Huguenot," by Max Pemberton, "The Heart of Life," by W. H. Mallock, "Out of Due Season" and "The Mistress of Quest," by Adeline Sergeant, and "Fidelis," by Ada Cambridge, found readers, as did "Mrs. Musgrave—and Her Husband," by Richard Marsh; "In the Smoke of War" and "Tryphena in Love," by Walter Raymond; "Not Counting the Cost," by Tasma (Mrs. Jessie Couvreur); "The Vengeance of James Vansittart," by Mrs. J. Hodder Needell; "Red Rowans," by Mrs. Flora Annie Steele; and Frank Frankfort Moore's 5 books, "The Sale of a Soul," "They call it Love," "The Secret of the Court," "One Fair Daughter," and "Two in the Bush and Others Elsewhere." "When Charles I was King" was a romance of Osgoldersoss, 1632-1649, by J. S. Fletcher, and "In Taunton Town," a story of the rebellion of Monmouth, by Evelyn Everett Green. "The Watter's Mou," by Bram Stoker; "A Son of Hagar," by Hall Caine; "The Honour of Savelli," by S. Levett Yeats; "Ia: A Love Story," by Thomas Quiller Couch (Q); "Lyre and Laneet," by F. Anstey Guthrie; "The Crooked Stiek," by Rolf Boldrewood; "The White Prior" and "The Gates of Dawn," by Fergus Hume; and "A Daughter of the Soil," by M. E. Francis, deserve mention, as do "Tom Chester's Sweetheart" and "The Banishment of Jessop Blythe," by Joseph Hatton; "At the First Corner," by H. B. Marriott Watson; "Scylla or Charybdis," by Rhoda Broughton; "In Market Over," by James Payn; "In the Year of Jubilee" and "Eve's Ransom," by George Gissing; and "A Deal with the Devil," by Eden Phillpotts. "The Sorrows of Satan" were detailed by Marie Corelli (a daughter of Charles Mackay), whose previous works have given her a wide reputation. John Strange Winter (Mrs. H. E. V. Stannard) outlined "A Magnificent Young Man," while the "new woman" figured as the heroine of more than one novel, the titles of which are sufficiently suggestive in many cases. Grant Allen outraged all conventional ideas of morality in "The Woman who did" and "British Barbarians"; Violet Hunt portrayed "A Hard Woman"; "The Curse of Intellect" came from an anonymous pen; while the author of "A Superfluous Woman" published "Transition." Mrs. Eliza Lynn Linton was the author of "The New Woman"; Annie E. Holdsworth, of "The Years that the Locust hath eaten"; Mènie Muriel Dowie (Mrs. Henry Norman), of "Gallia"; Mary L. Pendered, of "A Pastoral played out" and "Dust and Laurels." John Oliver Hobbes (Mrs. Craigie) wrote of "The Gods, Some Mortals, and Lord Wickenham"; Guy Boothby, of "The Marriage of Esther," "A Lost Endeavor," and "A Bid for Fortune," the scene of all 3 books being laid in Australia; while "A Gender in Satin," by Rita (Mrs. E. M. J. G. Humphreys) and "A Comedy in Spasm," by Iota (Mrs. Mannington Caffyn), may be classed together. "Mrs. Tregaskiss"



came from Mrs. Campbell-Præd, and "The New Moon" from C. E. Raimond. H. D. Lowry dealt with "Woman's Tragedies"; G. S. Street supplied "Episodes" and also wrote "The Autobiography of a Boy"; Frederick Wedmore told "English Episodes"; and W. J. Dawson "London Idyls." Hubert Craik-anthorpe made "Sentimental Studies"; Mrs. J. Gladwyn Jebb described "Some Unconventional People"; and W. C. Scully told "Kafir Stories," as Arthur Morrison did "Tales of Mean Streets." "Neighbors of Ours" was the title of slum stories of London, by Henry W. Nevinson. "The Girl from the Farm" was a strong story with a purpose by Gertrude Dix. "Lilith" was the only novel from the pen of George MacDonald, wildly fantastic, but full of poetry and reflection. John Davidson gave "A Full and True Account of the Wonderful Mission of Earl Lavender." H. Rider Haggard made a new departure in "Joan Haste," but returned to the marvelous in "The Heart of the World." A. Conan Doyle followed his "Memoirs of Sherlock Holmes" with "The Stark Munro Letters," somewhat in the same vein, and also solved "The Mystery of Cloombur." "Jacob Niemand" was by R. H. Sherard; "The Burden of a Woman," by Richard Pryce; "Elizabeth's Pretenders," by Hamilton Aidé; "Red Earth," by Morley Roberts; "The Prince of Balkistan," by Allen Upward; "The Herons," by Miss Helen Ship-ton; "Colonel Norton," by Florence Montgomery; "The Drift of Fate" and "The Other Bond," by Dora Russell; "Susannah," by Mary E. Mann; "Monochromes," by Ella d'Arcy; "The Moving Finger," by Mary Gaunt; "Sons of Fire," by Miss M. E. Braddon; "Corruption," by Percy White, the author of "Mr. Bailey-Martin; and "When Fortune Frowns," by Mrs. Henry Jenner. "A Monk of Fife," by Andrew Lang, purported to be a romance of the days of Jeanne d'Arc, done into English from the manuscript in the Scots College of Ratisbon, and to historical romance belong "The Coning of Cuculain," by Standish O'Grady, and "A Duke of Britain," by Sir Herbert Maxwell. Frank Barrett told of the adventures of "A Set of Rogues"; Florence Warden (Mrs. George E. James) wrote "Kitty's Engagement"; John Strange Winter (Mrs. H. E. V. Stannard), "A Blameless Woman" and "The Major's Favorite"; and The Duchess (Mrs. Margaret Hungerford), "The Three Graces," "The Professor's Experiment," "A Tug of War," and "Molly Darling, and Other Stories." "Sons of Belial" came from William Westall; George Paston made "A Study in Prejudices" under the guise of fiction; and Victoria Crosse wrote of "The Woman who did not." Rosa Nouchette Carey wrote for young people only, sending out "Cousin Mona," a story for girls, and "My Little Boy Blue," and to Mary Stuart Wortley, Countess of Lovelace, the juveniles were indebted for "The Story of Zelinda and the Monster," or "Beauty and the Beast" retold after the old Italian version, and "done into pictures." "The Old Missionary," by Sir William W. Hunter, gave a vivid picture of life in India. For boys George A. Henty wrote "A Knight of the White Cross," "Through Russian Snows, and "The Tiger of Mysore"; and William Gordon Stables, M. D., "For Life and Liberty" and "How Jack Mackenzie won his Epaul-ettes." "The Joneses and the Asterisks" was a story in monologue, by Gerald Campbell, and "Dialogues and Scenes from the Novels of Jane Austen" were arranged and adapted for drawing-room performance by Rosina Filippi (Mrs. Dowson). A 12-volume edition of "The Novels of Tobias Smollett" was edited by George Saintsbury, and S. R. Crockett contributed an introduction to a new 8-volume edition of the novels of John Galt, edited by D. Storrar Meldrum, of which 4 were issued during the year, containing "The Annals of the Parish," "The Ayrshire Legates," and "Sir Andrew Wylie." "The Novels of Adventure by Charles Lever" were contained in 6 finely illustrated volumes, uniform with his military novels, and a reprint of the "Waverley

Novels" from the edition of 1829 was begun in 48 volumes.

**Fine Arts.**—"The Cathedrals of England and Wales" were the subject of a handsome volume in the "Builder Series," the first collection ever published of plans of English cathedrals drawn to a large scale and thoroughly trustworthy, each plan being accompanied with a descriptive, critical, and historical account of each building from the pen of an architect or competent antiquary. "The Church of Sancta Sophia, Constantinople," by W. R. Lethaby and Harold Swainson, was an important contribution to the history of Byzantine art, and "The Moghul Architecture of Fatlipur-Sikri," long the delight of artists and architects, was also described and illustrated by Edmund W. Smith. Thomas Harris, in "Three Periods of English Architecture," made an appeal for the introduction of a new architecture based upon iron construction, and H. Heathcote Statham wrote a short treatise on "Architecture for General Readers." Richard G. Hatton offered hints for the student and designer upon the treatment of the human figure in "Figure Drawing and Composition." R. Muther published Vol. I of a "History of Modern Painting"; new illustrated editions were made of "Painting in France," "Contemporary French Painters," and "Imagination in Landscape Painting," by Philip Gilbert Hamerton, and of "Mrs. Jameson's Works on Art," the latter edited by Miss Estelle M. Hurll, finely printed from new plates, and with nearly 100 illustrations to each volume. R. A. M. Stevenson offered a critical study of "The Art of Velasquez," accompanied with 20 photogravure plates and an appendix of about 50 full-page illustrations; F. G. Stephens edited "Selected Works of L. Alma-Tadema" and contributed a prefatory essay to "Sir Frederick Leighton, Bart., P. R. A." by Ernest Rhys. Frederick Wedmore wrote on "Etching in England" and added an essay to the fine volume of reproductions of "Rembrandt." Karl Karoly offered "A Guide to the Paintings of Venice." "Modern Book Illustration," by Joseph Pennell, was one of the issues of the "Ex-Libris Series," other volumes in which were "Picture Posters," by Charles Hiatt, and Part III of "Dated Book-Plates," by Walter Hamilton, covering those from 1800 to 1895. In this connection may be mentioned also "Venice: The Early Art of Printing," by Ferdinand Ongania, and Part II of "Bookbindings and Rubbings of Bindings in the National Art Library, South Kensington." One of the successful books of the year was Mrs. Oliphant's "Makers of Modern Rome," and yet other attractive illustrated works were "Bits of Old Chelsea," a series of 41 etchings by W. W. Burgess, with letterpress by Lionel Johnson and Richard Le Gallienne; "Old Chester," etchings and pen-and-ink sketches by Henry Hovell Crickmore; "Pictures of Rustic Landscape," by Birket Foster; 12 etchings of "Paradise Lost," by William Strang; and Walter Crane's illustrations of Spenser's "Faerie Queen" and "Two Gentlemen of Verona." "Studies in Both Arts" was a collection of Ruskin's drawings and prose pictures, and a reprint was also made of his "Harbours of England." C. F. Murray prepared a "Catalogue of Pictures belonging to the Duke of Portland at Welbeck Abbey and in London." "A Book of Fans," by M. A. Flory, had a chapter on fan collecting by M. C. Jones. Henrietta Irving Bolton wrote a small volume upon "The Madonna of St. Luke" in the church of Santa Maria Maggiore, Rome, and Mrs. Nancy R. E. M. Bell selected "Masterpieces of the Great Artists, A. D. 1400-1700." H. Stuart Jones published "Select Passages from Ancient Writers illustrative of the History of Greek Sculpture"; P. Gardner and F. B. Jevons prepared "A Manual of Greek Antiquities"; and W. G. Wood-Martin, in "Pagan Ireland: An Archaeological Sketch," furnished a handbook of Irish pre-Christian antiquities. "Cretan Pictographs and Pre-Phœnician Script" were studied by Arthur J. Evans; W. H. St. John edited a work upon "The Corporation Plate and Insignia of



Office of the Cities and Towns of England and Wales," by L. Jewitt; and "Numismata Londinensia" was the title given to a sumptuous volume containing photographic reproductions of 26 medals struck by the Corporation of London to commemorate the most important municipal events of the last sixty years. They were accompanied with notices by Charles Weleh. "The Book of Public Arms" was compiled and edited by A. C. Fox-Davies and M. E. B. Crookes, while "The Record and Badges of Every Regiment and Corps in the British Army" were due to H. M. Chichester and G. B. Short. A. C. Haddon wrote of "The Decorative Art of British New Guinea"; W. G. Sutherland, of "Modern Wall Decorations"; J. Harrison, of "The Decoration of Metals"; while "A Manual of Marks on Pottery and Porcelain" came from W. H. Hooper and W. C. Phillips. Frances and Hugh Marshall studied the technique and symbolism of "Old English Embroidery," and T. F. Bell treated of "Jacquard Weaving and Designing." "Echoes of the Playhouse" contained reminiscences of some past glories of the English stage, by Edward Robins, Jr., and J. S. Shedlock wrote of the origin and development of "The Pianoforte Sonata." "Gluck and the Opera" was a study in musical history by E. Newman, and H. Davey wrote a "History of English Music." "Voice, Speech, and Gesture" was a handbook to the elocutionary art by Hugh Campbell, M. D., R. F. Brewer, and Henry Neville.

**History.**—In the "Oxford Manuals of English History" appeared "The Making of the English Nation," by C. G. Robertson, and "King and Baronage" (1135-1327), by W. H. Hutton. Two out of 3 volumes, by W. H. S. Aubrey, upon "The Rise and Growth of the English Nation," were issued, the first bringing us to the year 1399 and the second to 1658. Charles Oman wrote "A History of England" in one volume, and Cyril Ransome "An Advanced History of England." J. H. Round, in "Feudal England," made historical studies on the eleventh and twelfth centuries. Allen B. Hinds traced "The Making of the England of Elizabeth," and John Knox Laughton edited 2 volumes of "State Papers relating to the Defeat of the Spanish Armada." C. H. Firth edited 2 volumes also of "The Clarke Papers," selections from the papers of William Clarke, Secretary to the Council of the Army 1647-49, and to Gen. Monk and the commanders of the army in Scotland 1651-60, containing historical matter of much value. Arthur D. Innes wrote an account of "Britain and her Rivals in the Eighteenth Century, 1713-1789"; Henry W. Wolff gave his attention to "Odd Bits of History"; Sir J. R. Seeley published "The Growth of British Policy: An Historical Essay," in 2 volumes, while Hereford B. George enumerated "Battles of English History." William Howard Russell fought over again "The Great War with Russia," as Gen. Sir Daniel Lyons did "The Crimean War from First to Last"; and yet again we have "The Crimea in 1854 and 1894," by Sir Evelyn Wood, and "The Story of the Highland Brigade in the Crimea," founded on letters written during the years 1854, 1855, and 1856, by Lieut.-Col. Anthony Sterling. "Lucknow and Oude in the Mutiny" was at once a narrative and a study, by Lieut.-Gen. McLeod Innes; Sir Edward Braddon gave us "Thirty Years of Shikar"; and "Three Years in Cachar," by M. J. Wright, contained a short account of the Manipur massacre. H. C. Thomson outlined "The Chitral Campaign"; Capts. G. J. and Frank E. Younghusband told of "The Relief of Chitral"; and Capt. Crawford McCall went "With the Zhoob Field Force, 1890." Col. Fyler wrote "The History of the Fiftieth (or the Queen's Own) Regiment"; Col. John Davis sent out Vols. II and III of "The History of the Second (Queen's) Royal Regiment, now the Queen's (Royal West Surrey) Regiment"; while "A History of the Ninety-third Sutherland Highlanders" was written by Lieut.-Col. Percy Groves. G. Lewis Dickinson traced "The Development of Parliament

during the Nineteenth Century," and "The Crusade against the Constitution," by Sir W. T. Charley, was an historical vindication of the House of Lords. W. Cunningham, D. D., and Ellen A. McArthur were joint authors of "Outlines of English Industrial History"; Vols. III and IV of "Social England," edited by Henry Duff Traill, covered the periods from the accession of Henry VIII to the death of Elizabeth, and from the accession of James I to the death of Anne; while to R. M. Garnier we are indebted for "Annals of the British Peasantry." "The Tragedy of Fotheringay" was retold by Hon. Mrs. Maxwell Scott; and William Douglas Hamilton edited the "Calendar of State Papers (Domestic)—Charles I, 1648-9." R. Uliek Burke wrote "A History of Spain from the Earliest Times to the Death of Ferdinand the Catholic"; and Joseph Jacobs made "An Inquiry into the Sources of the History of the Jews in Spain." Elizabeth M. Sewell's "Outline History of Italy" was supplemented by "The Age of the Condottieri," a short history of mediæval Italy, from 1409 to 1530, by Osear Browning, and Vols. V and VI of "Italy and her Invaders," by T. Hodgkin. "The Model Republic," by F. Grenfell Baker, was a history of the rise and progress of the Swiss people; Vol. II appeared of "Cassell's History of the War between France and Germany, 1870-71"; and William V. Herbert described as an eyewitness the "Defense of Plevna, 1877." "Cavalry in the Waterloo Campaign" was a critical study, by Sir Evelyn Wood; and "Waterloo," by E. L. S. Horsburgh, was at once a narrative and a criticism. Several books were devoted to Africa, among which are "The Land of the Nile Springs," by Col. Sir Henry Colville; "The Story of the Expansion of Africa," by Hon. A. Wilmot; Vol. IV of "The Story of Africa and its Explorers," by Dr. Robert Brown, concluding the work; "South Africa," a study in colonial administration and development, by W. Basil Worsfold; "Matabeleland, and How we got it," by C. L. N. Newman; "Chronicles of Uganda," by Rev. R. P. Ashe; and "The History of the English Church and People in South Africa," by A. T. Wirginan. "The Story of Vedie India" was written by Zénaïde A. Ragozin in the "Story of the Nations Series"; W. M. Flinders Petrie published Vol. I of "A History of Egypt" from the earliest times to the sixteenth dynasty; and "Europe in China," by E. J. Eitel, contained the history of Hong-Kong from the beginning to the year 1882. E. H. Parker chronicled "A Thousand Years of the Tartars," and Vol. I of "The Cities and Bishoprics of Phrygia," by W. M. Ramsay, also saw the light. "A Lecture on the Study of History" was delivered at Cambridge, June 11, 1895, by Lord Acton, Regius Professor of Modern History, which was published in a small volume. Vol. III completed the exhaustive work of Reginald R. Sharpe upon "London and the Kingdom." E. T. Bradley (Mrs. A. Murray Smith) wrote "Annals of Westminster Abbey," and Arthur Irwin Dament "The History of St. James's Square and the Foundation of the West End of London." With a glimpse of Whitehall in the reign of Charles II, J. Reid threw "New Lights on Old Edinburgh," and Robert Miller, Lord Dean of Guild of that city, wrote, mainly from the original records, a sketch of the history of "The Municipal Buildings of Edinburgh" for seven hundred years. Vol. II appeared of Edward Bateson's "History of Northumberland," and again we have "The History of Northumberland," by Cadwallader J. Bates. W. Salt Brassington commemorated "Historic Worcestershire"; W. Andrews, "Bygone Cheshire"; Harry Speight wrote of "Nidderdale and the Garden of the Nidd"; and W. Lyon published "Chronicles of Finehamstead in Berkshire." Vol. II was also issued of "The Isle of Bute in the Olden Time," by J. K. Hewison; "A History of Newfoundland" was compiled by D. W. Prowse, Q. C., Judge of the District Court of that island, from the English, colonial, and foreign records. "Ironclads in Action," by H. W. Wilson, was a sketch of naval warfare from 1855



to 1895 in 2 illustrated volumes; Charles G. Harper illustrated from old prints and portraits his own book upon "The Dover Road: Annals of an Ancient Turnpike"; R. H. Morris described "Chester in the Plantagenet and Tudor Reigns"; while "Oxford and her Colleges" were the theme of Goldwin Smith. Rev. R. B. Gardiner edited, with biographical notes, Part II of "The Registers of Wadham College," covering the period 1719-1871. A third revised edition was made of "The American Commonwealth," by James Bryce, M. P., with additional chapters.

**Physical, Moral, and Intellectual Science.**—J. V. Marmessy reviewed the "Progress of Science," and Sir Douglas Galton delivered an "Address to the British Association for the Advancement of Science" at Ipswich, Sept. 11, 1895, on his elevation to the office of its president, in which he contrasted the science of 1831 with that of the present day. Francis Galton offered "Finger-print Directories," and W. Dalton Babington exposed "Fallacies of Race Theories as applied to Race Characteristics." "Darwin and after Darwin" was an exposition of the Darwinian theory and a discussion of post-Darwinian questions by the late Prof. George J. Romanes, whose "Mind and Motion and Mouism" was another posthumous volume of essays, and whose "Thoughts on Religion" were edited by Charles Gore. "Evolution and Art, as illustrated by the Life Histories of Designs" was contributed by Alfred C. Haddon to the "Contemporary Science Series"; "In the Guiana Forest" was the title of studies of Nature in relation to the struggle for life, by James Rodway, which had an introduction by Grant Allen; Edward Clodd published "A Primer of Evolution," and also wrote "The Story of Primitive Man" for the "Library of Useful Stories," other issues of which were "The Story of the Earth in Past Ages," by H. G. Seeley; "The Story of the Stars," by George F. Chambers; and "The Story of the Plants," by Grant Allen. "A Handbook of Primates," in 2 volumes, by Dr. Henry O. Forbes, was added to "Allan's Naturalists' Library," edited by R. Bowdler Clark; and Vol. III of "The Cambridge Natural History" contained "Mollusks," by Rev. A. H. Cooke; "Brachiopods (Recent)," by A. E. Shipley; and "Brachiopods (Fossil)," by F. R. C. Reed. Charles Dixon wrote on "The Migration of British Birds," and also on "The Game Birds and Wild Fowl of the British Islands," the latter work being a handbook for the naturalist and sportsman, with colored illustrations; W. H. Hudson, the distinguished traveler and naturalist, published a popular volume on "British Birds," and R. Kearton was interesting on the subject of "British Birds' Nests." Part III was issued of the "Dictionary of Birds," for which Alfred Newton was largely responsible, carrying the work on from "Moa" to "Shearwater"; F. W. Huxley wrote on "The Structure and Life of Birds"; and R. Bowdler Sharpe, the well-known ornithologist, published "A Chapter on Birds." "British and European Butterflies and Moths" were the subject of a sumptuous volume by A. W. Kappel and W. Egmont Kirby, and W. S. Furneaux also wrote on "Butterflies and Moths (British)." "The Natural History of Aquatic Insects" came from Prof. L. C. Miall, "The Natural History of Eristalis Tenax; or, The Drone Fly," from G. B. Sueton, while to Arthur Lister we owe "A Monograph of the Mycetozoa." Three volumes completed the splendid series of 50 which contain the "Report of the Scientific Results of the Voyage of H. M. S. Challenger," one on "Deep-sea Deposits," by Dr. John Murray and Rev. A. F. Renard, while two contained the "Summary of the Scientific Results," by Dr. Murray alone. "An Introduction to the Study of Zoology" was written by Miss B. Lindsay, and Richard Lydekker edited "The Royal Natural History," to be complete in 36 numbers, of which Nos. 1-10 were issued during the year. "Notes on the Nebular Theory" were made by William Ford Stanley, and a full description of "The Moon," with a map of its principal physical features, was given by Thomas Gwyn Elger.

R. Bains and others examined "The Climates of the South of England." "The Origin of Plant Structures by Self-Adaptation to the Environment" was contributed by Rev. G. Henslow to the "International Scientific Series," and from the same author we have "The Plants of the Bible" in the series of "Present Day Primers." William Hutchinson prepared a "Handbook of Grasses," and George Massee published the fourth volume of "British Fungus Flora," while M. C. Cooke was the author of "An Introduction to the Study of Fungi," as well as of several popular works on wild flowers. "Wild Flowers in Art and Nature," by J. C. L. Sparkes and F. W. Burbidge, were illustrated with colored plates by H. G. Moon. "Color Vision" was the subject of the Tyndall Lectures, delivered in 1894 by W. de W. Abney, and Edmund Catchpool was the author of "A Text-book of Sound" in the "University Tutorial Series." "Charles Lyell and Modern Geology" was from the pen of Canon T. G. Bonney, and Dr. Joseph Prestwick published "Collected Papers on some Controversial Questions of Geology," as well as a volume upon "The Traditions of the Flood." A third edition was also made of "The Great Ice Age and its Relation to the Antiquity of Man," by James Geikie. Charles Douglas made a study of the philosophy of "John Stuart Mill," and Henry Jones gave "A Critical Account of the Philosophy of Lotze." "The Female Offender," by Caesar Lombroso and W. Ferrero, opened the new "Criminology Series," edited by W. Douglas Morrison. St. George Mivart advocated "The Helpful Science," and Dr. G. S. Keith made "A Plea for Simpler Life." "Natural Rights," by D. G. Ritchie, purported to be a criticism of some political and ethical conceptions, and from the same author we had also "Darwinism and Politics," with two additional essays on human evolution.

Coming thus to questions of applied ethics, we have "Aspects of the Social Problem," by various writers, edited by Bernard Bosanquet, who was also responsible for "The Essentials of Logic." Prof. Robert Flint attacked "Socialism," while J. Richardson explained "How it can be done, or Constructive Socialism"; G. Morrison Davidson implored "Let there be Light," and "Merrie England," by R. Blatchford, was a plain exposition of socialism. "Socialism and Modern Thought" were considered by M. Kaufmann in the "Social Questions of the Day Series," and F. U. Laycock, in "Economics and Socialism," offered a demonstration of the cause and cure of trade depressions and national poverty. Edwin R. A. Seligman published "Essays in Taxation"; G. H. Blunden wrote "Local Taxation and Finance" in the "Social Science Series," other issues of which were "Perils to British Trade: How to avert them," by Edwin Burgis, and "Co-operative Labor upon the Land, and Other Papers," edited by J. A. Hobson. "The History of Currency, 1252-1894" was written by W. A. Shaw, and "Select Chapters and Passages from 'The Wealth of Nations'" were edited by W. J. Ashley in the series of "Economic Classics." "The History of the Foreign Policy of Great Britain" was traced by Montagu Burrows; "Appenzell: Pure Democracy and Pastoral Life in Inner-Rhoden" was a Swiss study, by Irving B. Riehlman, and Wordsworth Donisthorpe discoursed of "Law in a Free State." "The Evolution of Industry" we owe to Henry Dyer, and "A History of Slavery and Serfdom" to Dr. John Kells Ingram. Vols. V and VI of Charles Booth's study of "Life and Labor of the People of London" were given to "Population classified by Trade"; Gertrude Lubbock brought up "Some Poor Relief Questions," intended as a manual for workers, which had a preface by Sir John Lubbock; and "The Problem of the Aged Poor" was attacked by Geoffrey Drago. "The Rural Industries of England" were the subject of a work by J. L. Green, and a handsome volume recorded the progress of "Scottish Home Industries." "State Education for the People in America, Europe, India, and Australia" was written upon by Sir Wil-



liam Wilson Hunter, Edward M. Ilanée, and others; 2 volumes were devoted to "Universities of Europe in the Middle Ages," by Hastings Rashdall; Henry E. and Emmie Felkin were joint authors of "An Introduction to Herbert's Science and Practice of Education"; and "Youthful Eccentricity, a Precursor of Crime" was by Forbes Winslow. The twenty-sixth volume of "Proceedings of the Royal Colonial Institute" was issued, and from T. H. S. Esecott appeared a personal and political monograph on "Randolph Spencer-Churchill as a Product of his Age." "The King's Peace," by F. A. Inderwick, was a historical sketch of the English law courts, and from Sir F. Pollock and F. W. Maitland we had "The History of English Law before the Time of Edward I," in 2 volumes. "Chapters on the Principles of International Law" were also vouchsafed by John Westlake. One of the most significant books of the year was that of the Hon. Arthur James Balfour upon "The Foundations of Belief," which he also denominated "Notes Introductory to the Study of Theology," and from Dr. Henry Wace appeared "Christianity and Agnosticism," reviews of some recent attacks on the Christian faith. "The Philosophy of Theism" was the theme of the first series of Gifford Lectures before the University of Edinburgh in 1894-'95, by Prof. Alexander Campbell Fraser, and Dr. Alfred Barry delivered the Hulsean Lectures for the same year upon "The Ecclesiastical Expansion of England in the Growth of the Anglican Communion." The same lectures for 1893-'94, published during the year, were by the Right Rev. Mandell Creighton, upon "Persecution and Tolerance." "Via, Veritas, Vita" was the title of the Hibbert Lectures for 1894, by J. Drummond, and "Morality and Religion" that of the Kerr Lectures, by J. Kidd. "The Bible and the Monuments," by W. St. Chad. Boscawen, examined the primitive Hebrew records in the light of modern research; Prof. Allan Menzies wrote a "History of Religion"; "Lex Mosæica, or The Law of Moses and the Higher Criticism," by many authors, was edited by Richard Valpy French, and had an introduction by the late Right Rev. Lord Arthur Hervey, Bishop of Bath and Wells; and John Urquhart also defended "The Inspiration and Accuracy of the Holy Scriptures." To the two different schools of biblical interpretation belong Dr. T. K. Cheyne's "Introduction to the Book of Isaiah," and "Isaiah One and his Book One," by Dr. George C. M. Douglas. A new work of value undertaken during the year was the "International Critical Commentary," issues of which were S. R. Driver's "Critical and Exegetical Commentary on Deuteronomy," a "Critical and Exegetical Commentary on Judges," by George Foot Moore, and a "Critical and Exegetical Commentary on the Epistle to the Romans," by William Sanday and Arthur C. Headlam. The "People's Bible" of Dr. Joseph Parker was completed during the year by the issue of the twenty-sixth and twenty-seventh volumes, and additions to the new eighth series of the "Expositor's Bible" were the "Book of Deuteronomy," by Andrew Harper; the "Book of Jeremiah," by W. H. Bennett; the "Book of Ezekiel," by Rev. John Skinner; the "Book of Daniel," by Dean Farrar; and the "Song of Solomon and The Lamentations of Jeremiah," by Walter F. Adeney. Dr. John Cunningham Geikie added 2 more volumes to his "New Testament Hours"; Canon Charles Gore published "Dissertations on Subjects connected with the Incarnation"; Hon. William E. Gladstone "The Psalter," with concordance and other auxiliary matter; and Dr. James Stalker, "The Two St. Johns of the New Testament." "The Proverbs" was the opening volume of the new "Modern Readers' Bible," edited by Richard G. Moulton, while E. J. Dillon pronounced Job, Koheleth, and Agur "The Skeptics of the Old Testament." "The New Life in Christ" was a study in personal religion by Dr. Joseph Agar Beet; R. F. Horton wrote upon "The Teaching of Jesus"; "The Brotherhood of Mankind" was a study toward a Christian philosophy of history by John Howard Crawford;

"Christ in Isaiah: Expositions of Isaiah XL-LX" came from F. B. Meyer; "The City of the Living God" was a note on Hebrews xii, 22-24, by Dr. Alexander R. Eagar. G. H. Pember dwelt upon "The Great Prophecies of the Centuries concerning Israel and the Gentiles," and Rev. A. H. Sayce described "The Egypt of the Hebrews and Herodotus." "Christus Imperator" was the title of a series of lecture sermons edited by Dr. Stubbs, now Dean of Ely, and from Bishop William Boyd Carpenter we had "The Great Charter of Christ," studies in the Sermon on the Mount, and "Some Thoughts on Christian Religion," as well as "Lectures on Preaching." "A Lent in London" was the title of a course of lectures on social subjects delivered under the auspices of the London Branch of the Christian Social Union, to which Canon Scott Holland contributed a preface, and a special series of Advent sermons, were also delivered under the same direction which were collected under the name of "The Gospel of the Kingdom." Archdeacon Sinclair addressed "Words to the Laity," and Canon Malcolm MacColl discussed "Life Here and Hereafter." "College Sermons" of Benjamin Jowett were edited by W. H. Fremantle and W. Robertson Nicoll delivered "Ten-Minute Sermons." From Rev. A. K. H. Boyd (Country Parson) we had "Occasional and Immemorial Days" and "St. Andrew's and Elsewhere"; "God and the Ant" was the title of a booklet by Coulson Kernahan; "The Soul-Winner" was a posthumous work by Charles Haddon Spurgeon; and "Union with God" was by James Rendel Harris. "Enigmas of the Spiritual Life" and "The Unknown God" were from the pen of Rev. Alexander H. G. Craufurd. "Philo and Holy Scripture" was a valuable work for students of the Greek text of the Old Testament, for which they were indebted to Dr. Herbert E. Ryle. A companion volume to the "Biblical Essays" of the late Bishop of Durham (Dr. Joseph Barber Lightfoot) was issued during the year, containing "Notes on the Epistles of St. Paul from Unpublished Commentaries," and his "Historical Essays" also saw the light. E. L. Cutts wrote a "History of the Church of England"; Mary H. Allie, a "History of the Church in England from the Accession of Henry VIII to the Death of Queen Elizabeth, A. D. 1509-1603"; and E. J. Newell, "A History of the Welsh Church to the Dissolution of the Monasteries." "Foundation Stones" was the title of fifteen lessons, with story illustrations, on the founding of the Church in England, by Austin Clare. "The Oxford Movement" was reviewed by G. Wakefield. "Have Mercy upon me," by Rev. Andrew Murray, explained the fifty-first Psalm, and from the same author we had also "The Holiest of All," an exposition of the Epistle to the Hebrews.

Works of a general character which may as well be included here were: "The Key of the Pacific: The Nicaragua Canal," by Arehibald Ross Colquhoun; "Lighthouses: Their History and Romance," by W. J. Hardy; the "Principles and Practice of Harbour Construction," by William Shield; and "The History of North Atlantic Steam Navigation," with some account of early ships and ship-owners, with over 50 illustrations, by H. Fry. A. Jamieson published Vol. I of "A Text-book on Applied Mechanisms"; Oscar Guttman devoted 2 volumes to "The Manufacture of Explosives," with 147 illustrations; A. Sansome traced "Recent Progress in the Industries of Dyeing and Calico Printing," a supplementary volume to "The Printing of Cotton Fabrics" and "Dyeing"; Hon. Alicia Amherst wrote "A History of Gardening in England," and T. W. Sanders, "An Encyclopædia of Gardening." H. Murlert treated of "The Goldfish and its Culture for Profit"; "Grayling and How to catch them" was by F. M. Walbran; and John Biekerdyke contributed "Sea-Fishing" to the "Badminton Library," the volume being illustrated by C. Napier Henry and others. "Tobogganning on Crooked Runs," by H. Gibson, also contained contributions by F. de B. Strickland, and Lady Tobogganer. J. Mason ex-



pounded the "Art of Chess"; H. E. Bird offered "Chess Novelties"; and "Chess Sparks," or short and bright games of chess, were collected and arranged by J. H. Ellis. "Cartoons of the Campaign" was the title given a collection of political cartoons by F. C. Gould, made during the general election of the year.

**Poetry.**—The new laureate, Alfred Austin, published during the year "In Veronica's Garden," and his "Madonna's Child" was also issued in book form as a poem complete in itself. Volumes which deserve special mention were: "The Father of the Forest, and Other Poems," by William Watson; "The Story of Rosina," by Austin Dobson; "Poems," by Lionel Johnson; and "The Tenth Muse, and Other Poems," by Sir Edwin Arnold. W. B. Yeats gave us a volume of "Poems," and also selected "A Book of Irish Songs" from modern writers. "Birds of Passage: Songs of the Orient and Occident" came from Mathilde Blind; "Lyrics," from Arthur Christopher Benson; "Fringilla: Some Tales in Verse," from R. D. Blackmore; "Robert Louis Stevenson, an Elegy, and Other Poems," from Richard Le Gallienne. "Sister-songs" was an offering to two sisters, by Francis Thompson. Norman Gale published a second series of "A Country Muse," and Lord de Tabley a second series of "Poems Dramatic and Lyric." A companion volume to the "Songs, Poems, and Verses" of Lady Dufferin was "A Selection of the Songs of Lady Dufferin (Countess of Gifford) set to Music by herself and Others," edited by her son, the Marquis of Dufferin and Ava, and Lady Lindsay also contributed "The King's Last Vigil, and Other Poems." "Pansies" was the title of a book of poems by May Probyn. Mrs. Dollie Radford offered "Songs and Other Verses," while Ernest Radford was equally happy in "Old and New." "A Pomander of Verse" came from E. Nesbit; "Poems," from Laurence Binyon; "A Koran of Love," from Arthur Lyneh; "Here and There," from E. A. N.; "Ballads and Other Verse," from A. H. Beesly; and "The White Book of the Muses," from G. F. R. Anderson; while "Mother and Daughter" was an uncompleted sonnet sequence by the late Augusta Webster. Mrs. Rosamund Marriott Watson was the author of "Vespertilia, and Other Verses"; A. E. J. Legge, of "Sunshine and Smoke"; Eric Mackay, of "A Song of the Sea, and Other Poems"; Percival H. W. Almy, of "Seintillæ Carmenis"; May Brotherton, of "Rosemary for Remembrance"; A. L. Stevenson, of "Thoughts in a Garden, and Other Poems"; Edwin J. Ellis, of "Sancan the Bard"; H. Newbolt, of "Mordred"; Herbert Hailstone, of "Verse and Translation"; W. Wallace, of "The Divine Surrender"; Jane Barlow, of "The End of Elfintown"; and E. Pauline Johnson, of "The White Wampum." "The Vale of Arden, and Other Poems" came from Alfred Hayes; "Lyrics," from R. H. Fitzpatrick; while "Neath Austral Skies" was a volume of colonial verse by Edward Booth Loughran. "In a Garden, and Other Poems," by H. C. Beeching, contained much dainty and delicate work, and "Dunbar" was the title given to a selection from the poems of an old "Makar," adapted for modern readers by Hugh Haliburton (J. Logie Robertson). "Livingstone in Africa," by Hon. Roden Noel, was a specimen of striking and stately blank verse; and there yet remain for mention "A Harp from the Willows," by Rev. W. Moore; "Vignettes," by Aubrey N. St. John Mildmay, and "In Leisure Time," by William S. Mavor; "A Book of Words," by A. A. S.; "The Viol of Love, and Other Poems," by Charles Newton-Robinson; "Poems of Paganism," by L. Cranmer-Blyng (Paganus); "Flamma Vestalis," by Eugene Mason; "My Only Child," by Edmund James Mills; "Pipings," by John Arthur Coupland; "The Two Thrones," by Dr. John A. Goodehild; "Songs of a Heart's Surrender," by Arthur L. Salmon; and "Poems and Sonnets," by H. E. Clarke, the author of "Songs in Exile" and "Storm-drift." Arthur J. Stringer published 2 volumes, "Watchers of Twilight" and "Pauline, and Other Poems"; M. W.

Findlater, but one, of "Sonnets and Songs." "My Lattice, and Other Poems" came from Frederick George Seott; "My Friend," from Quex; "Lays of the Dragon Slayer," from Maxwell Gray; and "The Suicide at Sea," from E. C. H. Three poets of promise now dead were recalled—David Buchanan, by "Man and the Years"; Lewis Morrison-Grant, by "Protomantis, and Other Poems"; and "Lewis Morrison-Grant: His Life, Letters, and Last Poems," edited by Jessie Annie Anderson; while "Robert F. Murray: His Poems" was furnished with a memoir by Andrew Lang. To the drama belong "The Rani of Jhansi," by A. Rogers, with an introduction by Sir Edwin Arnold; "Ernest England," a drama for the closet, by J. A. Parker; "The Pity of Love," by Theodore Wratisslaw; and "King Arthur," by Comyns Carr. Among selections are to be mentioned "The Golden Pomp," a procession of English lyrics from Surrey to Shirley, by Arthur T. Quiller-Couch; "The Golden Book of Coleridge," edited, with a critical introduction, by Rev. Stopford A. Brooke; "A Century of French Verse," translated into English, by W. J. Robertson; "English Pastorals" selected and with an introduction by Edmund K. Chambers; "The English Poets in Defense and Praise of their Own Art," edited by Ernest Rhys, a companion volume to which was "Poets on Poets," by Mrs. Richard Straehely. "The Irish Song-book," with original Irish airs, was edited by Alfred Perceval Graves, in the "New Irish Library"; Vol. II appeared of "Songs of the North," gathered from the Highlands and Lowlands of Scotland, edited by Harold Boulton; and Vol. VI completed the "Cambrian Minstrelsie," a national collection of Welsh songs, edited by Joseph Parry and David Rowlands. "The Tale of Beowulf" was translated by William Morris and A. J. Wyatt, and the latter also edited the prologue to the new edition of "The Canterbury Tales," in the "University Tutorial Series," and "The Knight's Tale," S. J. Evans supplying a glossary. "The Poems of William Drummond of Hawthornden" were edited with a memoir and notes by W. C. Ward, and "The Friend of Sidney," Lord Brooke, was represented in the "Elizabethan Library" by a volume of quotations from his prose and verse, edited by Dr. A. B. Grosart.

**Voyages.**—"Vacation Rambles," by Thomas Hughes (Vaeuus Viator), the well-known and now aged author of "Tom Brown's Schooldays," covered much of the ground of both continents, while other Englishmen who found pleasure and recreation abroad were numerous as usual. C. Bogue Luffmann proved himself "A Vagabond in Spain"; A. F. Mummery told of "My Climbs in the Alps and Caucasus"; "The Romance of the Woods," by F. J. Whishaw, consisted of ten studies of Russian and Finland outdoor life; and F. Sandeman wrote of "Angling Travels in Norway." "Northwestern France, Normandy, and Brittany" were treated in his customary delightful manner by Augustus J. C. Hare, and Margaret Stokes spent "Three Months in the Forests of France" on a pilgrimage in search of the vestiges of the Irish saints in that country. Katharine Tynan Hinkson was at home in "The Land of Mist and Mountain." "The Buried Cities of Vesuvius" were described by Dr. John Fletcher Horne, and H. P. F. Marriott told "Facts about Pompeii." Sir C. Wilson edited a "Handbook for Travelers in Asia Minor," and Oswald H. Barry illustrated his own account of "Six Months in a Syrian Monastery." Rev. W. Wright, D. D., visited "Palmyra and Zenobia," and "A Visit to Bashan and Argob" was chronicled by Major Heber-Perey. "With the Yacht, Camera, and Cycle in the Mediterranean" came from the Earl of Cavan, and H. M. B., C. E. B., and T. B. spent time "On Either Side of the Red Sea." "Algerian Memories," by Fanny and William H. Workman, described a bicycle tour over the Atlas of the Sahara, and Henry Norman, the author of "The Real Japan," gave much time and thought to "The Peoples and Politics of the Far East." Canon H. B. Tristram published



"Rambles in Japan," which were illustrated by Edward Whymper, and "Advance Japan" was pronounced a nation thoroughly in earnest by J. Morris. A. Henry Savage Landor left the hairy Ainos, whom he visited last year, for "Corea, or Cho-sen, the Land of the Morning Calm," and the same country was again described by Louise Jordan Miln as "Quaint Corea." "China Present and Past" was a supplementary volume by R. S. Gundry to his previous work on "China and its Neighbors." Dr. Henry Laisdell took a ride to Little Tibet through "Chinese Central Asia," which he described in 2 volumes, and G. E. Morrison was "An Australian in China." "Out of India" described things which Rudyard Kipling saw and failed to see in certain days and nights at Jeypore and elsewhere; Walter R. Lawrence devoted a handsome volume to "The Valley of Kashmir; Major C. S. Cumberland described "Sport on the Pamirs and Turkestan Steppes"; and R. Carstairs treated of "Human Nature in India." Frank Athelstane Swettenham vouchsafed "Malay Sketches"; "From Far Formosa," by Dr. George Leslie Mackay, was edited by Rev. J. A. Macdonald. "Seventeen Trips through Somaliland" was a record of exploration and big-game shooting, 1885-'93, by Capt. G. C. Swayne; Capt. C. J. Melliss wrote on "Lion Hunting in Somaliland"; and Col. Francis Cornwallis Maude outlined "Five Years in Madagascar," with notes on the military situation. "Twenty Years in Khama's Country, and Pioneering among the Batauana of Lake Ngami" were told in the letters of Rev. J. R. Hepburn, edited by C. H. Lyall; and "Rhodesia of To-day," by E. F. Knight, embraced Matabeleland, Mashonaland, and Manicaland. "In the Veldt," by Harley, was a collection of stories and sporting sketches of which South Africa was the scene, while 3 volumes contained C. S. Goldwin and J. Kitehin's information concerning "South African Mines." "In Stevenson's Samoa," by Marie Fraser, found a pleasing companion volume in "The Home and Early Haunts of Robert Louis Stevenson," by Margaret Armour. "The Story of Australian Exploration" was told by R. Thynne, and "Travels and Adventure in Northern Queensland" were narrated by Arthur C. Bicknell. "Letters and Sketches from the New Hebrides," by Mrs. John G. Paton, were edited by Rev. James Paton, and ably supplement the "Autobiography" of the famous missionary. Dean Hole described "A Little Tour in America"; "On the Cars and Off" was the journal of a pilgrimage along the Queen's highway to the East from Halifax, in Nova Scotia, to Victoria, in Vancouver's Island, kept by Douglas Sladen. George R. Parkin made studies of Canada, entitled "The Great Dominion," which was again described as "The Land of the Muskeg," by H. Somers Somerset. "Ice Bound on Kolguev" was a chapter in the exploration of Arctic Europe by Aubyn Trevor-Battye, and Arthur Montefiore edited from the journals of Frederick George Jackson "The Great Frozen Land (Bolshaia Zemelskija Tundra)," the narrative of a winter journey across the Tundras and a sojourn among the Samoyards. Returning to the mother isle, we have a delightful volume upon "Westminster," by Sir Walter Besant; another upon "The New Forest," its traditions, inhabitants, and customs, by Rose C. de Crespigny and Horace Hutcheson; "Wild England of To-day," by C. J. Cornish; "Surrey Highways, Byways, and Waterways," by C. R. B. Barrett; "The Vale of Whittingham," by David Dippie Dixon, with illustrations; "The Mid-Lothian Esks and their Associations from Source to Sea," illustrated by George Aikman, with notes by the late Thomas Chapman and John Strathesk; "Some Ancient English Homes," by Elizabeth Hodges; and "The Carlyles' Chelsea Home," by Reginald Blunt. "Voyages and Travels" of Lord Brassey were edited by Capt. S. Eardley Wilmot, in 2 volumes.

The following are the figures of book production in England during the year, from the columns of the London "Publishers' Circular":

DIVISIONS.	1894.		1895.	
	New books.	New editions.	New books.	New editions.
Theology, sermons, biblical, etc.	476	80	501	69
Educational, classical, and philological.....	615	127	660	111
Novels, tales, and juvenile works	1,584	366	1,544	347
Law, jurisprudence, etc.....	126	23	57	33
Political and social economy, trade, and commerce .....	141	21	163	23
Arts, sciences, and illustrated works.....	98	30	96	16
Voyages, travels, geographical research.....	282	68	263	75
History, biography, etc.....	256	58	353	68
Poetry and the drama.....	160	21	231	16
Yearbooks and serials in vols....	323	2	311	
Medicine, surgery, etc.....	97	59	153	53
Belles-lettres, essays, monographs, etc .....	370	115	400	42
Miscellaneous, including pamphlets, not sermons.....	767	215	749	182
	5,300	1,185	5,581	935
		5,300		5,581
		6,485		6,516

### LITERATURE, CONTINENTAL, IN 1895.

Although the immense amount of matter issued annually naturally imposes restrictions on this list, it will be found to include, as usual, the most representative and interesting publications of each given land, movement, or author.

**Belgium.**—National history, always assiduously cultivated in Belgium, is represented by L. Gilliodts-van-Severen's important "Bruges Port de Mer"; "Quatre Ans d'Évolution: Relation des principaux Faits politiques et sociaux accomplis en Belgique de 1890 à 1894," by Ladislav van Hoorbeke; Ch. Woeste's "A travers dix Années (1885-'94): Études politiques, sociales, etc."; Th. Juste's "Histoire de Belgique"; and "Le vieil Anvers," by M. Roose. J. P. Waltzing's "Étude historique sur les Corporations professionnelles chez les Romains" (novel in idea and treatment) and Franz Cumont's "Les Mystères de Mithra" are remarkable contributions to ancient history. In the division voyages and travels we have "A travers l'Afrique australe," by Jules Leclercq; "A travers l'Asie," by Constant de Deken; "L'Allemagne, sa Vie et ses Arts," by J. G. Fréron; similarly interesting "Notes de Voyage sur Kent, Oxford, Cambridge, et Northampton," by Paul Saintenoy; H. Hauteœur's description of San Marino; and J. Van den Heuvel's "Croquis américains." An important work on military matters is Gen. Brialmont's "La Défense des États et la Fortification à la Fin du XIX<sup>e</sup> Siècle," while the Chevalier Ed. Descaimps has issued an equally noteworthy volume on "Les Offices internationaux et leur Avenir." It appears that the introduction of universal suffrage has given an impetus to the study of social questions. The large number of books on social and political science includes: Maurice Vauthier's "Le Gouvernement local de l'Angleterre"; Ernest Dubois's "Les Trades-Unions et les Associations professionnelles en Belgique"; Ernest van Elewyck's "Les Salaires et la Protection"; Hubert Langerock's "Le Socialisme agraire"; G. Legrand's "L'Impôt sur le Capital et le Revenu en Prusse"; C. Scheyven's "Code électoral belge expliqué d'après les Travaux parlementaires"; "La Dépression économique et sociale et l'Histoire des Prix," by Heeter Denis, "the leader of the scientific socialists," and "L'Organisation de la Liberté et le Devoir social," by Ad. Prins (two remarkable works); Victor Brants's interesting "Les Théories économiques aux XIII<sup>e</sup> et XIV<sup>e</sup> Siècles," and Guillaume de Greef's "Le Transformisme social" (discussing the development and degeneration of society



from a radical standpoint), Vol. II of the late Émile de Laveleye's "Essais et Études" has appeared, and the story of "Émile de Laveleye, sa Vie et son Œuvre" is sympathetically told by Count Goblet d'Alviella. Maurice de Wulf is the author of interesting "Études sur Henri de Gand" and a learned "Histoire de la Philosophie scolastique dans les Pays-Bas et la Principauté de Liège jusqu'à la Révolution française." In the department of literary history important works are: Prof. Thomas's "Histoire de la Littérature latine jusqu'aux Antonins"; a learned "Étude sur l'Ysegrinus," by Léonard Willems; the interesting "Histoire politique et littéraire du Mouvement flamand," by Paul Hamelius, an impartial account of the efforts to preserve the Flemish language in Belgium; the Viscount de Spoelberch's "Lundis d'un Chercheur" (interesting gossip about Balzac, Gautier, George Sand, and other French writers); and essays on and translations of Novalis and Emerson by Maurice Maeterlinck, who has also finished "Un Album de Chansons." O. G. Destrée has written of "Les Préraphaélites," and L. Bärfwold on the noted Flemish musician, the late Charles Louis Hanssens. New books have appeared by Georges Eekhoud ("Nouvelles Kernesses" and "Mes Commuions"), Albert Giraud, Jean Casier, Emile Verhaeren, N. Degussé ("La Dame noire"), A. Boschot ("Rêves blancs"), H. Krains ("Histoires lunatiques"), Sander Pierron, a newcomer, etc. A want of *esprit de corps* among men of letters appears to be indicated by reports of a controversy between "La jeune Belgique," "Le Réveil," "L'Art moderne," "Le Coq rouge," and other rival literary magazines of the same kind.

Of the Flemish literature of the year, monographs by F. de Potter, L. Mees, Edm. van der Straeten, and others, again attest to assiduous researches in local history. George Bergmann's "Gedenkschriften" offers a striking picture of Flemish-speaking Belgium before 1830. In literary criticism we have "Letterkundige Studien," by Max Rooses (essays on Hélène Swarth, Jan van Beers, Prudens van Duyse, etc.); H. Claeys's monograph on Jan van Ruusbroec, the noted Brabantine mystic of the fourteenth century; Arthur Cornette's "De Aesthetiek van het lyrisch Drama," discussing the combination of drama and music; and Paul Fredericq's "Onze historische Liederen van voór de Hervorming." Noteworthy additions to prose fiction are Van den Bergh's historical novel on the "Boerenkrijg" of the peasants of Flanders against the French Republic; Cyriel Buysse's "Sursum Corda" (one of the most notable successes of the year), "Mea Culpa" (considered rather free in tone), and "Wroeging"; Virginia Loveling's "De Bruid des Heeren," a work of "much originality and power"; Gustaaf Seegers's sketches of life in the Campine district; and new works by those experienced writers Aug. Snieders and L. van Rukkelingen. In poetry there are Pol. de Mont's "Iris," the veteran Emmanuel Hiel's "Symphonien en andere Gezangen," and Hilda Ram's "Nog een Klaverken uit's Levens Akker." J. L. Haller has translated some idyls from Theocritus. And one of the best plays of the year is Frans Gittens's "Palma's Dochter."

**Bohemia.**—National history has been contributed to in Tomek's "History of the City of Prague," Vol. X; Rezek's history of Bohemia during the reigns of Ferdinand III and Leopold I (completed); and Emmler's "Regesta," Vol. IV. Political affairs and duties form the theme of T. G. Masaryk's "The Bohemian Question." A long-felt want has been filled by the founding of a "Historical Magazine," and the Bohemian Geographical Society has also begun the publication of a magazine. V. Kotyška has issued a gazetteer of Bohemia, Ant. Kotík writes of "Bohemian Family Names," Ceněk Zibrt tells the "History of Dancing in Bohemia, Moravia, and Silesia," the "Evolution of Bohemian Miniature Painting in the Time of the Jagellons" is described by K. Chytil, and various important works are being continued, such as Z. Winter's history of Bohemian costume, A. Sedláček's

"Castles of Bohemia," Otto's encyclopædia ("Slovník naučný"), and Jar. Vlček's "History of Bohemian Literature." The celebration of the hundredth birthday of Paul Joseph Šafařík ("one of the founders of modern Bohemia") called forth some essays in the periodical press which form valuable contributions to Bohemian *Culturgeschichte*. The twenty-fifth anniversary of the death of the poet Vítězslav Hálek, who played an important part in the development of recent literature, occasioned new criticisms on his work (J. S. Machar being especially fair and frank), giving evidence of a growing spirit of honest self-criticism.

The life of the people again forms the well-treated theme of various novelists. The second part of M. Havel's "Memoirs of Philip Kořinek, Student of Philology," like the first, excels in character drawing; Klostermann introduces us into the depths of the Bohemian forest in "From the World of Forest Solitudes," and depicts the life of Bohemians in Vienna in "In Search of Good Fortune." K. M. Čapek's "In the Third Courtyard," Kukla's "From all the Corners of Prague," Hladík's "From the Atmosphere of Prague" and "Third Love," and J. Svátek's historical novel "Secrets of Prague" deal with various phases of life in the Bohemian capital. M. Šimáček's powerful "The Soul of the Factory" again describes factory life; Kolda Malinský pictures life "In a Village"; and J. L. Hrdina tells "Hradschine Stories." K. V. Rais delineates "Forgotten Patriots," and in "Toil" gives feeling pictures of highland life. Further prose fiction to be noted: A. E. Mužík's "Ruins of Life" ("touching pictures of human misery"); J. Arbes's "The Last Days of Humankind" and "For a Brother Socialist"; Ig. Herman's humorous "Pell-Mell"; F. X. Svoboda's "Stories of Different Frames of Mind"; Kuňtická's "Little Idyls"; and Julius Zeyer's characteristically individual "Renovated Pictures" (four stories in his familiar fanciful vein). Juvenile literature has been enriched by J. V. Sládek's "Great Bells and Small" and "Songs and Stories for Children" and Aug. Sedláček's "Historical Tales of the Bohemian People." Among the most noteworthy poetical publications of the year are "Here Roses ought to blow" and "Magdalena," by J. S. Machar, whose "warm sympathy with human woe" finds truthful expression in his realistic and beautiful verse. Svatopluk Čech's "Songs of a Slave" (20 editions), a passionate appeal for liberty, naturally has a political tendency that strikes a responsive chord in the hearts of his countrymen. Subjectivity and pessimism are becoming more noticeable characteristics in Jaroslav Vrchlický's latest volume of poems, "Windows in Storm," "Asters," "Before I become silent forever," and "New Fragments of an Epic." A. Klášterský's smooth lyrics "Heart and Soul" and "Viols of the Night" (said to show too much superficial sentiment); Adolf Heyduk's "Wanderings" (descriptive rather than poetical impressions of Nature); O. Březina's "Mysterious Distances"; J. Zeyer's "Karloinská Epopeje" (romantic lays regarding Charles-magne); Červinka's "Landscapes and Tempers" and Čenkov's "Year of Solitude," both characterized as rather crude; J. Karásek's "Walled-up Windows," a decadent production lacking in true feeling; and K. Mášek's humorous "Sour Grapes" are further new poetical productions.

**Denmark.**—National history and biography have been contributed to in L. Holberg's "Konge og Dandehof in det 13. og 14. Aarhundrede"; H. Matzen's "Forelæsninger over den danske Retshistorie"; C. J. Anker's "Uddrag af diplomatiske Indberetninger om Unionens Forberedelse og Tilblivelse 1814"; H. F. Rørdam's "Peter Rørdam: Blade af hans Levnedsbog og Brevveksling"; the "Efterladte Papirer fra 1813-14" of the "Geheime Konferensraad" Bræstrup, edited by T. Bræstrup; and "Efterladte Papirer fra den Reventlowske Familiekræds i Tidrummet 1770-1827." P. A. Heiberg offers a "Bidrag til et psykologisk Billede af Søren Kierkegaard i Barndom og Ungdom." A "Grundriss af den kristelige Etik" has



been drawn up by F. C. Krarup. P. Weilbach has begun a "Nyt dansk Kunstuer-Lexikon," and M. Galschiøt is the author of "Thorvaldsens Museum." Literary history has been enriched by V. Andresen's able, though rather laudatory monograph on "Paul Møller: hans Liv og Skrifter"; that conspicuous psychological critic G. Brandes's "William Shakespeare"; V. Vedel's fine though somewhat unpolished book on Swedish romanticism of the first half of the nineteenth century; A. Olrik's "Saksens Oldhistorie: Nørøne Sagaer og danske Sagn"; and J. Clausen's "Jens Baggesen." Other books published at Copenhagen are: H. Clod-Hansen's "Mand og Kvinde"; N. Juel-Hansen's "Samfunds Livet"; H. Jensen's "Blodets Baand"; I. Ring's "I Vaar"; and A. Ipsen's "Søster Helene."

Among the best novels of the year is "Hjarl: en Ungdoms Historie," by E. Christiansen (editor of "Illustreret Tideude," Denmark's illustrated magazine), in which the author, as usual, gives evidence of clever character study, especially in the delineation of young women. In "Vilhelm Vangs Studenteraar," S. Schandorph (author also of "Tre Appelsiner" shows a good eye for humorous situations. Here, as in other countries, the complaint is that views and theories succeed each other so rapidly that art, instead of being quickened, declines and decays. It appears also that the tendency to abandon the unvarnished realism, rampant yesterday, for vague symbolism and mysticism is present here as well. Even so uncompromising a realist as E. Brandes is said to have bowed to this changed taste by "traussferring the scene of one of his latest comedies to a sort of dreamland, and of another to the ancient days of the North." "Bekendelse," by Johannes Jørgensen (author also of "Rejsébogen"), is a collection of poems of beauty, despite a certain monotony and emotionality, which characteristics, as well as a certain archaic imagery and an absence of ideas, are said to mark the work of the younger men in general. C. Föns depicts the beauties of Italian scenery in the melodious verse of "Angelina," and Alfred Ipsen has issued "Ekko" (poems, mainly sonnets). Finally, "Völund Smed," in which Holger Drachmann (hailed by some as the "foremost representative" of modern Danish literature) deals with a subject from the elder Edda, is criticised for "exuberant and somewhat sentimental sensuousness, strangely opposed to the rigorous chastity of the sagas and tradition of ancient Scandinavia."

**France.**—In this country's extensive literary production history as usual holds an important place. The publication of memoirs is rather overdone, want of critical discrimination resulting in an abuse of this literary fashion. The "Mémoires" of Chancellor Pasquier and Gen. Thiébauld have been followed by those of Gens. Paulin ("Souvenirs, 1782-1876"), Fantin des Odoards ("Journal, 1800-30"), De Barante ("Souvenirs, 1782-1866"), Roch-Godard, and the spirited and plain-spoken Maréchal de Castellane ("Journal, 1804-62"). There have also appeared "Souvenirs du Comte de Montgaillard, Agent de la Diplomatie secrète pendant la Révolution, l'Empire et la Restauration"; "Souvenirs de la Vie militaire du Gén. Baron Lahure, 1787-1815"; "Mémoires du Comte de Paroy: Souvenirs d'un Défenseur de la Famille Royale pendant la Révolution, 1789-97"; "Mémoires du Général Rapp, 1772-1821"; "Le Maréchal de Ségur"; the "Mémoires" of Barras (which, with all their rancorous malevolence, throw much light on an interesting period), and those of Larevelière-Lepeaux (said to contain little of interest on the Revolution). "Mémoires de François Lavaux, Sergeant au 103<sup>me</sup> de Ligne, 1793-1814," edited by A. Darimon, an account of a typical soldier of the Napoleonic wars; "1792-1809: Aventures de Guerre, Souvenirs et Récits de Soldats," edited by F. Masson, and E. Simond's "Le Capitaine La Tour d'Auvergne, premier Grenadier de la République" illustrate an eventful period; "Une Idylle sous Napoléon I: le Roman du Prince Eugène" has been treated in a noteworthy manner by A. Pulitzer; and A. Dayot's

"Napoléon raconté par l'Image" and J. Grand-Carteret's "Napoléon en Images: Estampes anglaises" are iconographic histories of the great Corsican. M. de la Rocheterie and Le Marquis de Beaucourt have edited the "Lettres de Marie Antoinette"; M. de Maulde sifts much documentary evidence in "Louise de Savoie et François I"; the "Vie militaire du Général Ducrot, d'après sa Correspondance, 1839-71" has been published by his children; the Duc de Broglie's "L'Alliance Autrichienne" is an interesting contribution to the diplomatic history of the reign of Louis XV; and the Marquis de Dreux-Brézé's "Notes et Souvenirs pour servir à l'Histoire du Parti Royaliste, 1872-83" has been energetically exploited by the royalists. The second empire has in recent years been receiving increasing attention. M. de La Gorce is the conscientious and generally impartial author of a "Histoire générale du Second Empire"; Gen. Lebrun's posthumous "Souvenirs militaires, 1866-70: Préliminaires de la Guerre. Mes Missions en Belgique et à Vienne" contains interesting revelations regarding Napoleon III's policy toward Austria; Émile Ollivier's apologetic "L'Empire libéral" traces the political causes of 1866 which led to the military disaster of 1870; Comte Benedetti's "Essais diplomatiques" have appeared; and Alfred Duquet continues his patriotic but unprejudiced series of books on the Franco-German War, on which period works by Thoulmas, A. Chuquet, X. Euvrard, Rousset, P. Lehautcourt, A. Burdeau, and A. Wachter have also been published. General historical works dealing with France are A. Franklin's "La Vie privée d'Autrefois" (Vol. XVII); M. Loir's "Gloires et Souvenirs maritimes"; F. Aubert's "Histoire du Parlement de Paris, . . . 1250-1515"; C. Jullian's "Histoire de Bordeaux," published under the auspices of the municipality; and A. Touchemolin's "Strasbourg militaire." G. Maspero, a scholar of remarkable attainments, in "Histoire ancienne des Peuples de l'Orient classique" proves himself a writer of unusual ability, concise and nervous in style. J. J. Jusserand's "Le Roman d'un Roi d'Ecosse" is a little volume dealing with the son of Robert III; A. Rambaud writes of "Russes et Prussiens: Guerre de sept Ans"; and "La République d'Haïti: son Présent, son Avenir économique" is drawn by P. Vibert. Gaston Boissier's "L'Afrique romaine" gives the results of the careful archæological investigations of the French in simple and charming language. Gaston Rouvier has written "L'Histoire du Mexique." Affairs Oriental are treated in L. E. Bertin's "Les Guerres Civiles du Japon, 1156-1392"; M. Courant's "Bibliographie Coréenne"; E. Foa's "Le Dahomey"; F. Benoit's "Madagascar"; L. Brunet's "La France à Madagascar, 1815-95"; L. Catat's "Voyage à Madagascar, 1890"; J. B. Piolet's "Madagascar et les Hova"; and J. L. de Lanessan's "La Colonisation française en Indo-Chine," a frank recital of the author's four years' governorship. Pierre Loti recorded poetical impressions of "Jérusalem," "Le Désert," and "La Galilée," and Th. Bentzon wrote on "La Condition de la Femme aux États-Unis" for the "Revue des deux Mondes." T. de Wyzewa's "Chez les Allemands: L'Art et les Mœurs" tells little that is new. In political history and economics publications have been numerous. "Combats constitutionnels" and other posthumous works by J. J. Weiss (a journalist and historian "of singular sagacity and penetration") have appeared; "L'Expansion de France" is treated in an able and brilliant manner by the diplomatist René Millet; and Spuller has collected his discourses on the "New Spirit" and other subjects, the preface throwing some light on affairs during the presidency of Casimir-Périer. Democratic government is the theme, frankly and boldly treated, of "Souveraineté du Peuple et Gouvernement," by Eugène d'Eichthal; Yves Guyot continues ardently to combat the "Tyranie socialiste" in his pamphlets; and Clémenceau's "La Mêle sociale" has been variously rated as "rant from beginning to end" and as a most original work of great importance.



Joseph Chailley-Bert and A. Fontaine have collected the "Lois sociales" passed by the third republic; Émile Chevallier was awarded a prize by the institute for his volume on the history of the poor laws; and L. Vacher has written an elaborate treatise on "Le Homestead aux États-Unis." "Histoire économique de la Propriété, des Salaires, des Dénrées et de tous les Prix en général depuis l'An 1200 jusqu'en l'An 1800" is an important work by G. D'Avenel, summarized by him in "La Fortune privée à travers sept Siècles." Louis Proal discusses "La Criminalité politique." A subject of importance is dealt with in E. Villey's "Le Socialisme contemporain"; R. Garofalo's "La Superstition socialiste"; P. Boilley's "Les trois Socialismes: Anarchie—Collectivisme—Reformisme"; Lichtenberger's "Le Socialisme au 18<sup>e</sup> Siècle"; A. Onclair's "Le Communisme dans l'Histoire et les Systèmes socialistes d'À Présent"; R. Garraud, "L'Anarchie et la Répression"; and D'Haussonville's "Socialisme et Charité." Beaunis and Binet's "L'Année philosophique" realizes a praiseworthy idea, and is probably the most notable philosophical publication of the year. Brunetière's article in the "Revue des deux Mondes" on the failure of science, which aroused so much discussion, has been issued in separate form, as has also Berthelot's reply. Jean Breton has published interesting "Notes d'un Étudiant français en Allemagne"; E. Lavisse speaks "À propos de nos Écoles," and M. Leclerc of "Les Professions et la Société en Angleterre" and "L'Éducation des Classes moyennes et dirigeantes en Angleterre" (upholding the superiority of English popular education); and the "Livre du Centenaire de l'École Normale" recounts the history of that institution. Gabriel Séailles has written "Ernest Renan: essai de Biographie psychologique," R. Allier has studied "La Philosophie d'E. Renan," and Renan's "Ma Sœur Henriette" is a fine example of his style and a sweet and tender tribute to his dead sister, who had such an influence on his life. J. Barthélemy Saint-Hilaire has issued "Victor Cousin, sa Vie et sa Correspondance." There are as usual numerous studies in literary history and criticism, among them being P. Stapfer's "Montaigne," Bourdeau's "La Rochefoucauld," D'Haussonville's "Lacordaire," and E. Spuller's "Royer-Collard" (all four in the series "Les grands Écrivains français"); the "Journal intime" of Benjamin Constant; Monod's successful and impartial studies of Michelet, Renan, and Taine; A. Collignon's life of "Diderot"; A. Devaux's biography of "George Sand" (crowned by the Academy); Gaston Paris's "La Poésie du Moyen Âge" (Vol. II); Edmond Biré's excellent literary "Études et Portraits"; E. Scherer's "Études sur la Littérature contemporaine" (Vol. X); F. Brunetière's "Nouveaux Essais sur la Littérature contemporaine"; A. Soubies's "La Comédie Française depuis l'Époque romantique, 1825-194"; J. Rousse's "La Poésie bretonne au 19<sup>e</sup> Siècle"; "Trois Années de Théâtre, 1883-1885," by J. J. Weiss; T. de Wyzewa's "Nos Maîtres" (interesting discussions of important literary and æsthetic questions); H. Bordeaux's "Âmes modernes" (thoughtful studies on very modern writers—Ibsen, Loti, Hérédia, etc.); G. Lanson's "Hommes et Livres: Études morales et littéraires"; G. Larroumet's "Études de Littérature et d'Art" (second and third series); G. Pellissier's "Nouveaux Essais de Littérature contemporaine"; Polti's book on "Les 36 Situations dramatiques" of Gozzi; and Paul Besson's excellent "Platen: Étude biographique et littéraire" (another proof that French scholars have begun to occupy themselves with a thorough study of German literature). Among the important works on art, which French publishers issue in such tasteful sumptuousness, are the third and last volume of Müntz's "Histoire de l'Art pendant la Renaissance italienne," an admirable guide to the study of that brilliant period; Salomon Reinach's "Description raisonnée du Musée de Saint Germain" (Vol. II); Collignon's sympathetically written "Histoire de la Sculpture grecque"; Gonse's "La Sculpture française, du 14<sup>e</sup> au 19<sup>e</sup>

Siècle"; Robert de la Sizeranne's very readable essays upon "La Peinture anglaise contemporaine"; and Émile Michel's "Études sur l'Histoire de l'Art," dealing with Velasquez, Lorrain, landscape of the Flemish school, and art at the court of Frederick II. M. Vaehon describes "Les Arts et les Industries du Papier en France" and H. Beraldi "La Reliure du 19<sup>e</sup> Siècle."

The crop of novels is, as always, a heavy one. One of the most brilliant of the year is Anatole France's "Le Lys rouge," flawlessly beautiful in style (although some passages are "outrageously licentious"), and containing exquisite word pictures of Florence. The same author has published also "Le Puits de Sainte-Claire" (tales) and "Le Jardin d'Épicure" (philosophical *causeries*). "Les Demi-Vierges," by M. Prévost (author also of "Notre Compagne") is a dark picture of feminine depravity. P. Hervieu, in "L'Armature," pitilessly analyzes the aristocracy of money. In A. Daudet's "La petite Paroisse" some of his finest qualities are found, with little diminution of strength; Léon Daudet makes a violent attack upon the medical profession in "Les Morticoles," and has also published "Les Kamtchatka" ("a new series, cleverly satirized, of snobs"). Edouard Rod's "Le Silence" and "Les Roches blanches" and Abel Hermant's "Eddy et Paddy" are interesting psychological studies. Worthy of note are also Jules Lenaitre's "Myrrha" (a charming story); M. Donnay's "L'Éducation de Prince"; H. Lavedan's "Marionnettes," "Le vieux Marcheur," "Leur Cœur," and "Leur beau Physique"; "Années d'Aventures," by A. Capus; "Réchain, Avare," by the late Paul Foucher; the sad "Contes tout simples" and the third series of "Mon Franc-Parler," by F. Coppée; Paul Margueritte's "Fors l'Honneur"; "Paternité," a woodland story, and "Flavie," by A. Theuriet; the village sketches "Mon Ami Gaffart" and "Taillevent" (a singularly charming idyl), by F. Fabre; "Dominic" and "Les Demoiselles de Liré," tales of sunny Provence, by its laureate Paul Arène; and Hugues le Roux's volume of graceful tales "Le Festéjodon." Further new fiction includes: A. Housaye's "Les Larmes de Mathilde"; J. Rameau's "L'Amant honoraire"; R. Maizeroy's "Journal d'une Rupture" and "L'Ange"; J. Verne's "L'Île à Hélice" and "Mifiques Aventures de Maître Antifer"; P. Sales's "La Malouine" and "La Fée du Guildo"; Art Roë's "Racheté" and "Sous l'Étendard"; P. Mael's "Celles qui savent aimer" and "Toujours à toi"; Gyp's "Le Cœur d'Ariane," "Les Gens ehies," "Ces bons Normands!" and "Leurs Ames"; J. K. Huysmans's "En Route" (tenth edition); J. H. Rosny's "L'autre Femme" and "Résurrection"; Mme. E. Caro's "Les Lendemains"; M. Paléologue's "Profil de Femmes"; Catulle Mendès's "Rue des Filles-Dieu"; A. Chennevière's "Honneur de Femme" (awarded a prize by the Academy) and "Quatre Femmes"; J. Reibrach's "Éternelle Enigme"; Armand Charpentier's "Le Roman d'un Singe"; and F. Sorey's "Grandeur et Décadence de Minon-Minette." Poetry has also been abundant, as always. Henri Barbusse's "Pleureuses" achieved immediate recognition by its good qualities, simple form, and chaste diction; "Aréthuse" is a little volume of verse by Henri de Regnier, a rising genius, inclining to classicism; "Noëls" is a charming production by Maurice Bouchor; Catulle Mendès's "La Grive des Vignes" is, we are told, somewhat affected; the naturalistic song writer Aristide Bruant and the American Parisian Francis Viéla-Griffin (son of Gen. Egbert Viele) are also named with approval; "Dernières Poèmes," by Leconte de Lisle, has appeared. Coppée's tragedy "Pour la Couronne" has had an enthusiastic reception. Paul Hervieu's "Les Tenaïles" ("a study of a tragedy of connubial incompatibility") has also been successful. The same theme is treated in Thalasso's "La Vie," of greater dramatic value than the preceding but weaker psychologically. Other plays of the season were Maurice Bouchor's "Conte de Noël" (a charming sort of fairy dream in one act), in verse; Pierre



Wolff's "Fidèle" (one act); Lefèvre's "Le Faune" (one act); Jacques Normand's "L'Amiral" (a two-act comedy); Henri Lavedan's "Viveurs," a satire aimed at the rich middle classes (as his "Prinee d'Auree" was directed against the nobility); Maurice Donnay's "Amants"; Henri de Bornier's romantic "Le Fils de l'Arétin"; Émile Fabée's "Argent," a poor play, not without promise, by a new man; Meilhac and St. Albin's spectacular "Panurge"; "Messire du Gueselin," a rather bombastic production by the chauvinistic Paul Deroulède; Berre de Turique's "Crise conjugale"; young Edmond Rostand's drama "La Princesse Lointaine," produced by Sarah Bernhardt, and praised for its "smooth, melodious verse" and "pure tone and sentiment"; Lemaître's "L'Age difficile"; and "La Peur des Coups," by G. Courteline, "one of the few real humorists in France." Vol. XX of Noël and Stoullig's "Annales der Théâtres" has appeared. Antony Réal fils has issued a *brochure* on "Le Théâtre antique d'Orange et ses Représentations modernes," that noble Roman stage restored through the efforts of Auguste Carestie and Michel père. And this calls attention to the poets of Provence, the "Félibres"—with their journal "L'Aioli" and their two Parisian societies, the "Félibrige" and the "Cigaliers"—men like Frédéric Mistral, Antony Réal fils (son of Fernand Michel), Alexis Mouzin, Batiste Bonnet (who found a translator for his autobiography in A. Daudet), the late Anselme Mathieu ("l'ou Félibre di Poutoun") Count Foléo de Baronecelli, etc., whose work, full of local color, gives force to the Provençal renaissance of today, the genesis of which is told in the Félibre Paul Mariéton's "Histoire d'une Renaissance."

**Germany.**—In the well-cultivated field of history, local history receives a very generous share of attention. Individual works like O. Bähr's "Das frühere Kurhessen," F. Münsehn's "Geschichte von Hessen," G. Wustmann's "Quellen zur Geschichte Leipzigs," R. Holtzapfel's "Das Königreich Westfalen," Richard Graf du Moulin Eckart's noteworthy "Bayern und das Ministerium Montgelas, 1799–1817," Jos. v. Zalin's "Steiermark im Kartenbilde der Zeiten," W. Heyd's "Bibliographie der württembergischen Geschichte," and Von Scharfenort's "Die Pagen am brandenburgisch-preussischen Hofe, 1415–1895"; and serial publications, such as "Forschungen zur deutschen Landes- und Volkskunde"; "Die Chroniken der deutschen Städte"; "Forschungen zur brandenburgischen und preussischen Geschichte" (Verein für Geschichte der Mark Brandenburg); "Bau- und Kunstdenkmäler der Provinz Westpreussen"; "Abhandlungen zur Landeskunde der Provinz Westpreussen"; "Mecklenburgisches Urkundenbuch," hrsg. von dem Verein für mecklenburgische Geschichte und Alterthumskunde"; "Dortmunder Urkundenbuch"; P. Clemens's "Die Kunstdenkmäler der Rheinprovinz"; "Publikationen der Gesellschaft für rheinische Geschichtskunde"; "Regesten der Pfalzgrafen am Rhein," "Regesten der Markgrafen von Baden und Hachberg, 1050–1515," "Oberbairisches Geschlechterbuch," and Alb. Krieger's "Topographisches Wörterbuch des Grossherzogthums Baden," all four issued by the Badische Historische Kommission; "Die westfälischen Siegel des Mittelalters," and "Westfälisches Urkundenbuch," both issued by the Verein für Geschichte und Alterthumskunde Westfalens; "Statistik des Hamburgischen Staates"; "Hansische Geschichtsquellen," hrsg. vom Verein für hansische Geschichte"; "Württembergisches Urkundenbuch"; "Urkunden und Akten der Stadt Strassburg"; "Regesta diplomatiea neenon Epistolaria Historiæ Thuringiæ" (Verein für thüringische Geschichte und Alterthumskunde); "Bau- und Kunstdenkmäler Thüringens"; "Thüringisch-sächsische Geschichtsbibliothek"; "Codex diplomaticus Saxoniarum Regiæ"; "Beiträge zur sächsischen Kirchengeschichte"; "Beschreibende Darstellung der älteren Bau- und Kunstdenkmäler der Provinz Sachsen und angrenzender Gebiete," hrsg. von der historischen Kommission der Provinz Sachsen";

"Die Kunstdenkmale des Königreichs Bayern, 11.–18. Jahrh.," "Forschungen zur Kultur- und Literaturgeschichte Bayerns," hrsg. von K. v. Reinhardtstöttner"; "Quellenschriften und Abhandlungen zur Staats-, Kultur-, und Kunstgeschichte der Reichsstadt Nürnberg"; and "Quellen zur Geschichte der Stadt Hof"—all, apart from their merits or demerits, attest to the active spirit of historical research in various parts of the empire. Nor are family histories wanting. Austrian history is contributed to in II. v. Zeissberg's life of "Erzherzog Carl von Oesterreich," whose "Aphorismen" have been followed by his "Ausgewählte Schriften" ("remarkable for their stern self-criticism"); the voluminous "Österreichische Statistik"; "Fontes Rerum austriacarum"; Gst. Strakosch-Grassmann's "Geschichte der Deutschen in Österreich-Ungarn" (good, but somewhat prolix); "Quellen zur Geschichte der Stadt Wien" (Vol. I); and W. Porth's "Denkwürdigkeiten aus dem Leben des k. und k. Feldmarschall-Lieutenant Ludwig Freiherr v. Kudriaffsky." Vol. VII of F. Dahn's "Könige der Germanen" has appeared, as has also the third and last volume of "Kulturgeschichte der Deutschen im Mittelalter," by the late Franz v. Löher, who, in his learned and thorough "Das Kanarienvuch," again supports his theory that the aboriginal inhabitants of the Canary Islands were of Germanic extraction. There have been numerous additions to the voluminous literature on the Franco-German War, to which the celebrations of the twenty-fifth anniversary of that event have given a special increase. Much of a popular character has seen the light—H. v. Selbitz's "Aus grosser Zeit: kleine Erinnerungen," Kunz's "Die deutsche Reiterei," Th. Lindner's "Der Krieg gegen Frankreich," etc. In the deluge of personal reminiscences, such as those of Gen. Verdy du Vernois (published in the "Deutsche Rundschau"), called forth by this renewed interest in the war, various generally accepted historical accounts were considerably modified. The "Einsiedler vom Sachsenwald" holds an important place in the literature of the year, there having been a swarm of additions to Bismarck literature. II. v. Poschinger has published the ex-Chancellor's "Ansprechen" and "Neue Tischgespräche und Interviews"; Horst Kohl, having issued his "Politische Reden" in 12 volumes, has begun a "Bismarck Jahrbuch." "Bismarck-Literatur," by P. Schulze and O. Koller, is a bibliography of 70 pages; and "Unser Bismarck" is a collection of drawings by the well-known C. W. Allers (whose biography—"Freund Allers"—has been written by A. Ohlnda). Bismarck naturally forms also an important figure in Vols. VI and VII of the late Heinrich von Sybel's "Die Begründung des deutschen Reiches durch Wilhelm I." Among the very large number of biographical monographs are Ernst Haffter's life of Georg Jenatsh, general of the Grisons; E. zu Putlitz's "Gustav zu Putlitz"; R. Koser's "König Friedrich der Grosse"; "Erinnerungen aus dem Leben von Hans Viktor v. Unruh, 1806–86," hrsg. von H. v. Poschinger, an "opportune and instructive biography"; Rudolf Thiele's "Ernst Moritz Arndt: sein Leben und Arbeiten für Deutschlands Freiheit, Ehre, Einheit und Grösse"; and "Aus dem Leben des Königs Carl von Rumänien: Aufzeichnungen eines Augenzeugen." Other historical works are C. Waechsmuth's "Einleitung in das Studium der alten Geschichte"; G. Diereks's fair "Geschichte Spaniens"; M. Philippon's "Ein Ministerium unter Philipp II: Kardinal Granvella am spanischen Hofe, 1579–86"; and Alfred Stern's "Geschichte Europas seit den Verträgen von 1815 bis . . . 1871" (criticised as too detailed and too sketchy). The late Rud. v. Ihering's "Vorgeschichte der Indoeuropäer" is a noteworthy effort of a specialist in another field to deal with the problems of *Culturgeschichte*. The art writer H. Thode's charming "Der Ring des Frangipani" (fact or fiction?) is a bit of theorizing to prove that the ring in question is the one that was given by Apollonia Lang to her husband, Christopher, Count Frangipani, in 1513. Among the additions to the ever-



increasing number of books chronicling German explorations and colonization, especially in Africa, are R. Schmidt's "Deutschlands Kolonien," Karl Peters's "Das Deutsch-Ostafrikanische Schutzgebiet," Eug. Zintgraff's "Nord Kamerun," Cr. Weidman's "Deutsche Männer in Afrika: Lexicon der hervorragendsten deutschen Afrika-Forscher, Missionäre, etc.," and Alfred Zimmermann's "Kolonialgeschichtliche Studien." Ernst v. Hesse-Wartegg describes a summer voyage to "Korea." Two interesting contributions to scientific biography are Max Laue's "Christian Gottfried Ehrenberg, ein Vertreter deutscher Naturforschung im 19. Jahrh., 1795-1876," and the late Jakob Moleschott's "Für meine Freunde: Lebenserinnerungen." W. His, the famous anatomist, in "Johann Sebastian Bach: Forschungen über dessen Grabstätte, Gebeine und Antlitz," pronounces the recently discovered skull of the musician authentic. Art in various phases is treated of in Jakob v. Falke's "Aus alter und neuer Zeit: neue Studien zur Kultur und Kunst"; Gust. Ebe's "Abriss der Kunstgeschichte des Alterthums"; Jul. Allgeyer's "Anselm Feuerbach"; and Johannes Volkelt's excellent "Ästhetische Zeitfragen" (combating "the excesses of realism in art"). Laurenz Müllner, author of "Literatur- und kunstkritische Studien," is described as "a rare example of a combination of extensive knowledge and independent judgment with religious warmth and clerical orthodoxy." The enthusiastic idealism of the eloquent aestheticist Moritz Carrière again finds vent in his posthumous works "Christus," "Das Wachstum der Energie," and "Fichte's Geistesentwicklung," and a kindred spirit breathes throughout Hektor v. Arneth's "Das classische Heidenthum und die christliche Religion" (with its conception of "human religion free from all sectarian coloring"). In the interesting "Schopenhauer: ein Beitrag zur Psychologie der Metaphysik" Rud. Lehmann strives to trace the pessimist's philosophy psychologically and historically, while Ludw. Sehearn has edited "Karl Bähr, Gespräche und Briefwechsel mit Arthur Schopenhauer." The personal note in Friedr. Nietzsche's philosophy is so predominant that his biography, by his sister, Frau Elisabeth Förster-Nietzsche, will be greeted with interest. Hieronymus Lorm has given his views concerning Nietzsche in "Der grundlose Optimismus." Richard Wahle, with keen but somewhat hairsplitting criticism, deals in an agnostic spirit with "Das Ganze der Philosophie und ihr Ende," and Paul Deussen traces the "Allgemeine Geschichte der Philosophie, mit besonderer Berücksichtigung der Religionen." In literary history, monographs of more or less interest are H. Düntzer's "Goethe's Stammbäume"; Richard Mayr's essays on Goethe; R. Weissenfels's "Goethe im Sturm und Drang"; Karl Heinemann's "Goethe"; J. Wyckgram's "Schiller, dem deutschen Volke dargestellt" (profusely illustrated); H. Voss's "Goethe und Schiller im persönlichen Verhältniss"; Louis P. Betz's "Heine in Frankreich"; E. Kühnemann's thorough "Herder's Leben" (finely conceived, despite some faults of execution); E. Wolff's "Gottscheds Stellung im deutschen Bildungsleben"; G. Ellinger's "E. T. A. Hoffmann"; H. E. v. Berlepsch's "Gottfried Keller als Maler"; and A. Römer's "Fritz Reuter in seinem Leben und Schaffen." Gustav Könnecke has issued a "Bilderatlas zur Geschichte der deutschen Nationalliteratur," and Mich. Bernays "Schriften zur Kritik und Literaturgeschichte." R. Wolkan's "Geschichte der deutschen Litteratur in Böhmen bis zum Ausgange des 16. Jahrhunderts" is the work of an authority; and Adolf Stern deals with 19 contemporary writers of various nationalities in "Studien zur Litteratur der Gegenwart." Berthold Litzmann has studied the influence of the new political situation on literature, and comes to this rather depressing conclusion: "The literature of United Germany is neither hot nor cold, but dreadfully commonplace and destitute of individuality." The elevation of public taste is the aim of a new and artistically presented periodical, "Pan," issued by the "Genossenschaft Pan," which publishes also

the editor, O. J. Bierbaum's, "Lobentanz: ein Singspiel."

Novels and stories by noted older authors are: F. Spielhagen's "Stumme des Himmels" (directed against aristocratic prejudices) and "Susi"; A. Wilbrandt's "Die Osterinsel" and "Die Rothenburger" (best in its descriptive passages), both "below his usual level"; G. Ebers's "Im Schmiedefeuer: Roman aus dem alten Nürnberg" and "Im blauen Hecht"; O. Roquette's "Sonderlinge" (short stories); W. Jensen's "Die Katze" and "Jenseits der Alpen: Novellen"; and Paul Heyse's "In der Geisterstunde" (effective short stories). The subject of Rud. v. Gottschall's "Im Bann des schwarzen Adlars" is taken from Prussian history, as is also that of "Wider den Kurfürsten," by Hans Hoffmann, whose "Novellen ausinterpommern" form excellent pictures of the life of his native land, while a breath of bracing mountain air blows through Ludwig Ganghofer's "Die Martinsklause." A. Schnitzler's "Sterben" describes the cruel sufferings of a consumptive with extreme modern realism. Leopold Andrian's "Garten der Erkenntnis" has been classed as impressionistic. Grouping the women by themselves, we have Ilse Frapan's "Old Hamburg" and "Zu Wasser und zu Lande"; S. Jungbaus's "Geschieden"; "Die Todtenwacht" and "Das Schädliche" (short stories) and "Margarete," by M. v. Ebner-Eschenbach; Ida Boy-Ed's "Die Schwestern"; Marie von Bunsen's Berlin stories (such as "Ihr Mann" and "Udo in England," published in the "Deutsche Rundschau"); N. v. Eschstruth's "Johannisfeuer" (short stories); and W. Heimbürg's "Um fremde Schuld." Further titles in the lengthy list of prose fiction are: E. Eckstein's "Familie Hartwig" and "Nora: Novelle"; H. Heiberg's "Zwischen drei Feuern," "Graf Jarl," and "Fieberndes Blut"; E. v. Wolzogen's humorous "Die Erbschleicherinnen"; W. Raabe's "Gesammelte Erzählungen"; E. Wichert's "Blinde Liebe" and "Die verlorene Tochter"; H. Hopfen's "Im Schlaf geschenkt"; M. Kretzer's "Im Rieseunest"; H. v. Zobeltitz's "Die Kronprinzenpassage"; Rich. Skowronck's "Mein Vetter Josua"; Rhld. Ortmann's "Casamicciola"; Arthur Zapp's "Der tolle Schmettwitz," "Martha und Maria," "Moderne Frauen," and "Der neue Don Quixote"; F. v. Zobeltitz's "Die Johanniter" and "Bis in die Wüste"; and Felix Holländer's sensational "Sturmwind im Westen: ein Berliner Roman" (a minutely accurate account of a notorious Berlin scandal). The epic does not flourish in this age, but a noteworthy example of this form of poetry is "Robespierre," by the young Hungarian Marie Eugénie delle Grazie, impressive and effective, although marred at times, we are told, by unpleasantly extreme naturalism. Hermann Hango's "Faust und Prometheus," marked by deep thought, is a "didactic and scientific poem," dealing with the science of to-day, and opposing the attendant lawlessness and pessimism. These two works quite overshadow the other narrative poems of the year, such as Held's strongly erotic "Tannhäuser Recidivus" and Johannes Trojan's humorous "Das Wustrower Königsschiessen" ("fragrant of the tavern"). Young Hans Falke, who, like that other Austrian, E. Marriot, writes so understandingly of the spiritual life of the priesthood, has followed up the success of his tragic-comic idyls "Der Stiftsuoviz von Kremsmünster" and "Pfarrer Habermann" in a new one, "Fiat Lux." Numerous collections of lyrical poetry have again seen the light—works by individual authors such as the eloquent Alberta v. Puttkammer ("Offenbarungen") and the celebrated Viennese Betty Paoli (posthumous poems, smooth in style, marked by deep and warm feeling), and anthologies, such as the "Cotta'scher Musenalmanach." Albrecht, Graf Wickenburg, sings with warm feeling and kindly humor of "Mein Wien." The note of passion in Carl Busse's poems is accentuated to excess in the erotic "Neurotika" of Felix Dörmann (a strong and modernly nervous genius), and even more so in Paul Fischer's "Hallucinationen." The poems of



Johanna Ambrosius (Frau Voigt), a simple peasant woman of East Prussia, ran through 4 editions within three months. Written in poverty and illness, these verses, tinged with sadness, are noteworthy examples of popular poetry. On the stage, the social drama, dealing with social and sexual problems, presented with crass, sometimes strained realism and studied commonplace, is having its day. A. Wilbrandt's "Viola"; Fulda's comedy "Die Kameraden"; F. Philippi's "Der Dornenweg"; Max Dreyer's "Drei" (a piece of psychological analysis artistically presented by a new man); H. Sudermann's "Glück im Winkel" (skillfully constructed, but not without faults and weaknesses); Robert Misch's comedy "Nachruhm" and his drama "Liebe von Heut" (conventional in action, but marked by a striving for naturalness); "Ohne Geläut," the promising maiden effort of F. v. Zobeltitz; "Der Hexenkessel," the first play of Georg Engel, known as the author of some pronouncedly realistic novels; the *Kultur drama* "Des Sonnenreiches Untergang" (dealing with the conquest of the land of the Incas) and "Gordon Pascha," a 5-act drama, by Wolfg. Kirchbach; the farcical "Zwei Wappen," by Blunenthal and Kadelburg; Moser and Trotha's comedy "Der Militärstaat" (G. v. Moser's one hundredth play); the farce "Der grosse Komet," by Laufs and Jacoby; "Die Ueberzähligen," by Richard Nordmann (Frau Agnes Langkammer), have all been produced with success. Other new plays are Arthur Schnitzler's "Das Märchen" (the old problem of the fallen woman) and Max Nordau's "Die Kugel" (which has not the tragic effect intended by the author). Paul Lindau has issued dramaturgic essays, "Vorspiele auf dem Theater"; and 2 books by actors are Ad. Matkowsky's "Eigenes, Fremdes" and Emil Thomas's "40 Jahre Schauspieler."

**Greece.**—Valuable and interesting historical publications are Paul Calligas's important "Studies of Byzantine History from the First to the Final Conquest of Constantinople"; the posthumous "History of the Despots of Epirus," by J. Romanos, "the best Corfiote historian"; a readable compendium on the history of Corfu by A. Hidromenos; F. Albana's valuable pamphlet on "The Titles of Nobility in Corfu and the Feudal System"; and a "History of the Old Asiatic Peoples," by P. Carolides. E. Stamatiades has written the first biography of Jacob Basiliscus, a Samian adventurer who sat on the throne of Moldavia during 1561-63, and "Demetrius Phalereus and Athens" is the subject of a monograph by C. Papazis. Archaeological publications include pamphlets by A. Skias ("Contributions to the Topography of Athens") and C. Lambros ("The Cupping Glasses and Cuppers of the Ancients") and the lists, by P. Castriotis and B. Leonardos, of the antiquities in the museum of the Acropolis and at Olympia, respectively. N. Politis writes with knowledge of "Popular Cosmographic Myths"; M. Gedeon, of "Education and Poverty in the Last Ten Years"; and J. Mesoloras, of the "Confessions of Faith" of the Greek Catholic Church. Sp. Lambros has compiled a "Catalogue of the Greek Manuscripts on Mount Athos." An admirable, learned treatise on "Greek Meters," by D. Semitelos, the "Philological Adversaria" of C. Contos, and a "History of Greek Literature," by G. Mistriotis contribute to our knowledge of ancient Greece. In the domain of *belles-lettres*, less than ever of the material appearing in periodicals has found its way into book form. Prominent new books in this field are "Island Stories," by A. Ephtaliotis, "a master of the popular dialect"; the "First Fairy Tales," also written in the popular tongue, of C. Passajannis (a new man, of much promise despite his idiotisms); and D. Bernardakis's successful tragedy, "Fausta."

**Holland.**—There is again much activity to report in the department of history, and the serial "Oud-Holland" is the medium through which many important researches are brought before the public. The late Prof. Jorissen's valuable historical studies have been reprinted; Van Arkel and Weissmann have written an illustrated description of the an-

tiquities of the northwestern part of Holland; Dr. Knuttel is issuing an elaborate study of "De Toestand der Nederlandsche Katholieken ten Tijde der Republiek"; and Dr. van Deventer proceeds with his history of the Dutch in Java. Books dealing with the Dutch East Indies are: "Encyclopaedie van Nederlandsch-Indië," by P. A. van der Lith and A. J. Spaan; P. J. F. Louw's "De Java-Oorlog van 1825-'30"; A. Hartmann's "Repertorium op de Literatuur betreffende de nederlandsche Koloniën, voor zoover zij verspreid is in Tijdschriften en Mengelwerken"; J. F. van Benmelen's "Uit Indië: Reisindrukken en Herinneringen uit onzen Archipel"; and W. F. H. Wunderlich's "Insulinde: Land en Volk van Nederlandsch-Indië." S. Kalf's "Japansehe Schetsen," H. C. M. van Wickevoort Crommelin's "Een herlevend Volk: Schets van de Japanners en hun Land," and G. O. Van Wijk's "Naar Atjeh en terug" also describe Eastern lands. Vol. II. of C. Snouk Hurgronje's "De Atjehers" has been published after all. L. Legrand is the author of a "Geschiedenis der Bataafsche Republiek." L. van Deysel (K. J. L. Alherdingk Thijm) has issued "Verzamelde Opstellen." Works of note in literary history are: W. G. C. Byvanck's learned "Hoofdstukken onzer Geschiedenis. De Jeugd van Isaäc da Costa"; S. A. Naber's brochure "Vier Tijdgenooten," dealing with Cd. Busken Huet, E. J. Kiehl, J. T. Buys, and C. G. Cobet, the essays being described as personal recollections rather than scholarly monographs; H. J. A. M. Schaepman's "Menschen en Boeken," interesting reminiscences and literary opinions; W. G. van Nouhuys's "Walt Whitman"; the interesting letters of the wife of Multatuli (the late E. Douwes Dekker), edited by Julius Péé, one of the most important of the many books dealing with that writer; and the finely illustrated "Geschiedenis der Nederlandsche Letterkunde" Jan Ten Brink.

We are told that although less prose fiction has appeared, the proportion of promising works is greater. However, the turbulent movement of the young element, which began about fifteen years ago, has not been so very extraordinary in results. Mrs. Zwaardemaker-Visseher's "Sterk in Leed," a novel on the old lines, is praised as a serious work, careful in characterization. Mrs. Hamaker-Brooshooft's "De Van Esperens" has been commended as a "homely and really Dutch" product. More modern in tone are "Om het Geluk," by Mrs. Knuttel-Fabius, and the work of Van Nievelt, while a link between old and new has been found in Mrs. Therese Hoven (a pseudonym), who is becoming more modern in taste and style and who has published two short novels ("Uit vrije Beweging" and "Zonder Illusie") and a volume of tales. A. Werumens Buning, author of "Binnen en buiten Boord," has earned a well-deserved reputation as an artistic writer of sea stories, while Miss Cath. Alberdingk Thijm, who has written "Gouden Ketenen" and "Boven den Afgrond," appears, like Louise Stratenus ("Tegengift"), to have a propensity for utilizing sensational occurrences in high life as topics for her novels. Marcellus Emants, perhaps the oldest of the moderns, is a careful artist, but his "Een nagelaten Bekentenis" is described as too thrilling in its minute analysis of agonizing mental processes; Louis Couperus (whose "Wereldvrede" continues "Majesteit") has not enjoyed his usual success with his impressions of a tour through Italy; and "My Lady Nobody" (New York), by Maarten Maartens, though not, perhaps, offering the same opportunity for a display of thrilling power and a deft use of the uncanny and unusual as his former works, depicts social life in Holland as cleverly as these, albeit with a touch of pessimism. Two promising young writers deserve mention: the author of "Bertha," a little military story, and J. Morgan de Groot (Karl Ridoro), who made a stir with "Dai," which he surpassed in "Bouton de Rose." The latter author's fault seems to lie in an undue straining after new expressions and an overdone style. C. Huygens's "Zomer," Johanna van Woude's "Van de Muziek des Levens,"



F. A. Buis's "Binnenskamers en Buitenhuid," and L. H. J. Lamberts Hurrelbrinck's "In Limburg en dar-buiten" also appear on the year's lists. Some of the older poets are being revised in reprints; the younger generation is doing little. Dr. A. Worp is issuing an important edition of Constantyn Huygeus's complete poems, while J. N. van Hall, in "Dichters van onzen Tijd," has collected the best and most characteristic examples of the art of *les jeunes*. Books by men of the new school are "De Gebroeders," by Frederik van Eden (a psychological analysis of the human mind as agitated by good and evil), and "Verzen," by W. Kloos ("the most boisterous of our young writers"), of which "scarcely any word is fit for reproduction in good company." Louis Couperus has issued "Williswinde: een nieuwe Bundel Gedichten." Of dramatic works there is little to say. Justus van Maurik's "Anarchisten" is loosely constructed and poor in characterization. There are excellent actors in Holland, but hard times close up the theaters, with a consequent reaction upon playwrights.

**Hungary.**—The publication of a grand and voluminous "Millennial National History of Hungary" (written by Marczali and other eminent historians, well edited by S. Szilágyi, and finely illustrated) has been begun, in anticipation of the millennial celebration of 1896, by the Hungarian Athenæum Society, which body issues also a biographical "Illustrated History of Literature," a similarly monumental product of literary co-operation. G. Sebestyén has written a "History of the Arpads"; J. Ferenczy, a "Life of Ferencz Pulszky," the politician; G. Balas, "Austro-Prussian War of 1866"; P. Hunfalvy, a "History of the Wallachs"; and A. Vambéry, "Origin and Growth of the Hungarian State." The celebrated István Széchenyi's voluminous "Journalistic Articles," edited by A. Zichy under the auspices of the Academy, form valuable material for the history of Hungarian politics and culture. Adolf Agai gives delightful sketches of travel "On Water and Land." Alexander Matkovits's valuable "History of the Hungarian Budget, 1867-93." Vol. II of Földes's "Social Economy," and David Kohn's "History of the Italian Currency" (which won an Academy prize) are important new works in political economy. The publication of a "Zeitschrift für ungarisches öffentliches und Privat-recht" was begun in January, 1895, and attention has been called also to the "Budapesti Szemle" ("Budapest Review"), edited by Paul Gyulai, the main object of which is "to acquaint the Hungarian public with the ruling ideas of the civilized world." Béla Tóth's useful "From Mouth to Mouth" is the first Hungarian collection of quotations. V. Kecsei's "Mythological Monuments of Ancient Pannonia" and G. Zolnai's "Hungarian Linguistic Monuments to the Time of the Art of Printing" are of national interest. "Creators of Hungarian Literature, Zsolt Beöthy (author also of "Nights at the Play"), traces and analyzes the development of the nation's literature.

It appears that in *belles-lettres* less than usual has been published; however, there are some works of note. In the collected edition, in 12 volumes, of Sándor Bródy's novels and stories, as well as in his novel-ette "Snowwhite" ("Hófehérke"), this gifted *déca-dent's* predilection for strange and morbid subjects, analyzing, disdain of plots, and subjectivity are made apparent. Robert Tábori's "The Key of the Temple" (a "story of religious politics in the time of Maria Theresa") again shows this prolific writer's strength to lie in pure and simple narration, interesting and thrilling, without any admixture of psychology or "problems." In his prize novel "Katalin," Miksa Márkus, usually so satirical, tells a refreshingly pleasant and heartfelt story, and Géza Gárdonyi, a rising young author, has written a captivating peasant story, "The Life of the Pöyhölys." Zoltán Ambrus, who some critics place at the head of contemporary Hungarian prose writers, and who is noted for his pure and rich language and delicate irony, has been very successful with "The Destruction of Nineveh, and Other Stories" and the novel "King Midas"

(published as a serial in a newspaper). Ferencz Herezeg continues his success in the charming "Occidental Tales" (including the striking story "Sirius"; Tamás Kóbor's "Frost" shows a preference for treating pathological conditions; István Bárony, the noted delineator of nature, is at his best in "In Private" (a collection of tales); Géza Malonyay shows improvement in "Struggles" (novelettes, giving evidence of "an interesting, warm-hearted individuality"); and Béla Agai, the young nephew of Adolf, began well with "Feuilleton Novelettes." Another very young writer, Ignotus (Hugo Veigelsberg), sustains his reputation in "Confessions" and "Verses," both marked by glowing and vigorous language. Odön Jakab's "Prince Argirus," a "fairy tale in four songs," has won an Academy prize; Bishop Gerő Szász's new "Poems" unite "spiritual pathos" with philosophic humor; "Parterre," by István Móra, a youthful poet, though not without faults, is promising; and Helen Békassy's new "Poems," while faulty in versification, are noteworthy for their charmingly sweet simplicity. Finally, a complete collection of the revolutionary poetry of 1848-49 is offered in Lajos Hentaller's interesting "Songs of the War for Liberty." Antal Várady's important prize tragedy "Charitas," romantic in style, has found favor; József Bokor's "In Winter" (a prize *vau-de-ville*) shows close observation of character; and Béla Budai's "The King" (one-act comedy) is pleasant and harmless, though not strikingly meritorious. The publication of A. Silberstein's "Dramaturgie Works" has been begun.

**Italy.**—Once more comes the complaint that although historical works have been published in abundance, there are hardly any of high literary merit or scientific import. Carlo Cipolla's "Per la Storia d'Italia e de' suoi Conquistatori nel Medio Evo più antico" is a noteworthy work of research; Aug. Vit. Vecchi has well told "La Storia generale della Marina militare"; and Raffaello Barbiera's "Il Salotto della Contessa Clara Maffei" presents a striking picture of both literary and political interest. De Cesare's "Vita della venerabile Maria Cristina di Savoia, Regina delle due Sicilie," E. Masi's "La Monarchia di Savoia," G. Andre's "Nizza, 1892-1814," C. Trevisani's "Storia di Roma nel Medio Evo," and L. Chiala's "Politica segreta di Napoleone III e di Cavour in Italia e in Ungheria (1858-61)" also illustrate various aspects of national history. French affairs are dealt with in U. Silvagni's "Napoleone Bonaparte e i suoi Tempi" and E. Bonacini's "Guerra franco-germanica del 1870-71," and A. Professione recounts "Storia moderna e contemporanea, dalla Pace d'Aquisgrana ai Giorni nostri." Nor should R. Lanciani's "Forma urbis Romae consilio et auctoritate Regiae Academiae Linceorum dimensus et ad modulum 1:1,000 delineavit" be omitted here. "Nuove Lettere inedite," of C. Cavour, have been edited by Edm. Mayor; a new, short "Vita di Vittorio Emanuele II," by O. Pio, has appeared; and Col. Severino Zanelli's "Uomini di Guerra dei Tempi nostri: Moltke" is described as a sympathetic psychological study of the great strategist. E. Costi's "Storia del Passaggio di Nord-Est," G. Baggiani's "Viaggi di un Artista nell'America meridionale," and R. Fava's "Ricordi rumeni: Note di un Viaggio in Transilvania e Romania" swell the list headed voyages and travels. A great social question is discussed by P. Ricciotti ("Ideali del Socialismo"), R. Garofalo ("La Superstizione socialista"), and L. Fiorentini ("Socialismo ed Anarchia"). C. Lombroso writes of "Gli Anarchi" and Vit. Donati of "Anarchia," and A. Loria has collected his lectures on "Problemi sociali contemporanei." The "Riforma Sociale," edited by F. S. Nitti, continues "to possess more vital energy and more actuality than any other Italian magazine." Bibliographical works of interest are G. Ottino and G. Fumagalli's "Biblioteca bibliographica italiana," and Gi. and C. Salvio-li's "Bibliografia universale del Teatro drammatico italiano." The terecentenary anniversary of Tasso's



death was celebrated by solemn and imposing public ceremonies, and unofficially by the publication of a number of books dealing with the poet. Angelo Solerti's 3-volume "Vita di Torquato Tasso," the result of conscientious and impartial research, strips the veil of romance from much in Tasso's life, such as his love for the sister of Duke Alfonso. We are told that some of the critics still find it difficult to believe in Tasso's madness, and give most unlikely reasons for his disgrace. Solerti is also issuing an edition of Tasso's minor works in 10 volumes. Further books concerned with Tasso are V. Prinzivalli's "Torquato Tasso a Roma" and "Torquato Tasso nella Vita e nelle Opere," ("fairly successful pieces of biography, but indifferently written"); F. Vismara's "L'Animo di Torquato Tasso rispecchiato nei suoi Scritti"; P. D. Pasolini's "I Genitori di Torquato Tasso"; Enrico Proto's "Rinaldo"; Belloni's "Epigoni della Gerusalemme liberata"; and books on "Aminta," by Guido Fortebracci and Charlotte Banti. Other contributions to literary history and criticism are: A. d'Ancona and O. Baeci's "Manuale della Letteratura italiana" (fifth and last volume); B. Zumbini's "Studi sul Petrarca"; Crescini's "Contributi agli Studi sul Boecaccio"; Fabbris's "Studi Alfieriani"; L. L. Boecomino's "La Poesia esplicita nei principali Poeti italiani"; G. H. Cesareo's "La Poesia siciliana sotto gli Svevi"; Martini's "Il Teatro"; Novati Flamini's "Studi critici"; a volume of literary criticisms by Croce, which has aroused unusual interest and elicited some acrimonious replies; F. Flamini's "Studi di Storia letteraria italiana e straniera"; E. Portal's "Scritti vari di Letteratura provenzale"; P. Toldo's "Contributo allo Studio della Novella francese del XV. e XVI. Secolo"; Giae. Barzellotti's "Ippolito Taine"; A. Foà's "Studi di Letteratura tedesca"; and G. M. Sealinger's "Ibsen."

Novels are as usual exceedingly numerous, and noteworthy ones very much less so. Gabriele d'Annunzio, whose style one Italian critic finds labored and affected, is in vogue just now. His novel "Le Vergini delle Rocce" (first published in "Il Convento," the dainty organ of "Young Italy") is the first of the "Romanzi del Giglio." D'Annunzio appears to have a decided preference for French critics and readers, in which connection we are reminded that there is much imitating of the French among Italian novelists, and that French books are much read in Italy. Giuseppe Ericeo publishes four sad but cleverly written stories of poverty and sorrow under the title "Piccoli Schiavi bianchi." Further new fiction, named without comment: La Marchesa Colombi's "Cara Speranza"; E. Ruta's "Il Gusta d'amare"; A. G. Barrili's "Fior d'Oro"; E. Castelnovo's "L'onorevole Polo Leonforte"; and L. Arbib's "Catena." Of poetry, there is even less to say. Carducci's "Ode to the City of Ferrara," written in honor of the Tasso commemoration, is criticised as obscure, like much of his recent work. Giovanni Pascoli, hailed as a new poet, has issued "Myrica" (third edition). His poetry, though somewhat labored and obscure in language, is chaste and simple in tone and thought, and shares the melancholy which, we are told, characterizes all modern Italian poetry. The drama "La Soltara," by G. Sinovoli, a schoolmaster, treating of the lamentable condition of the workmen in the sulphur pits of Sicily, enjoyed a triumphant success in that island—a success attributable to any but artistic causes, for in Italy the play was criticised for its awkward technique and clumsy dialogue.

Norway.—O. A. Overland has completed his scholarly history of Norway to 1814. D. Schnitler offers "Blade af Norges Krigshistorie," and A. C. Bang relates "Den Norske Kirkes Historie i det 16. Aarhundrede." An admirable monograph on the "father of Norwegian painting," "Professor [Johan Christian] Dahl: et Stykke af Aarhundredets Kunst- og Kulturhistorie," is by the art critic Andreas Aubert, and K. Dahle tells of "Røros Kobberværk, 1044-1894." S. Bugge offers a "Bidrag til den ældste Skaldedigtningens Historie"; Erik Lie, a son of Jonas, has written

a volume on Balzac; and Carl Nærup, a newcomer among literary critics, has shown considerable power in his clever essays on contemporary writers. Chr. Collin, in "Kunsten og Moralen: Bidrag til Kritik af Realismens Digtere og Kritikere" (meritorious, though faulty in style), makes a plea for morality in art, attacking naturalism, and has aroused warm discussion. Hegelianism has again found a support in the well-written "Rummet og Sjælen" of the young philosopher H. C. Hansen.

It is perhaps in the field of *belles-lettres* that some of the most noteworthy publications have appeared. Jonas Lie has given rein to his fancy in "Troid," two volumes of peculiar *eventyr*, some of which have been pronounced veritable masterpieces of sublime simplicity. Arne Garborg's qualities—mastery of language, both the literary tongue and dialects, brilliancy, introspection rather than creative ability—are apparent in "Fred" and "Haugtussa" (in verse, so naively gentle that his "morbidly reflective mind" seems hardly to have had part in its production). Knut Hamsun, noted for his captivating style and audacious, though somewhat superficial manner, has in "Pan: af Løjtnant Thomas Glahns Papirer" given some daring love scenes and intensely enthusiastic and deeply poetical descriptions of Nature. This same deep love for Nature is felt in the pictures of coast life by Thomas P. Krag (author of "Mulm"). Jens Tvedt, who has drawn such realistic and faithful pictures of Norwegian peasant life, appears to have adopted symbolism in "Velaug," a "hymn of love," rather stiff despite its gorgeousness. He writes in the popular dialect, as does also Rasmus Løland, the peasant poet, to whom some ascribe finer gifts, and who has promised much in "Skuld," "Skattegraveren," etc. Hans E. Kineke, who uses the local dialect in a masterly style, again deals with life on the beautiful Hardanger Fiord in his poetical "Flaggermus-Vinger." Hans Aanrud, Jacob Hilditch, Hans Seland, and the sculptor Matthias Skeibrok also describe peasant life in various parts of the kingdom, in stories and sketches more or less humorous in character, while Rosenkrantz Johnsen's "Kaptein Appenes' Datter" deals with the life of fishermen. Gloomy pictures of Bergen life are furnished in Theodor Madsen's graphic "I Drift" and in "Professor Hieronymus," by Mrs. Amalie Skram, an audacious naturalist. Joyless and gloomy themes are also preferred by the energetic and daring naturalist Gabriel Finne, who has published "Dr. Wangs Börn," "Unge Syndere" (short stories), "To Damer," and the somewhat less unpleasant "Rachel"; and by Mons Lie (son of Jonas), discreet in method, in "Remeni" (novel) and "Streif" (collection of sketches). On the other hand, a joyful view of life is expressed in the works of Hans Aagård and of Bernt Lie (cousin of Mons), whose richly colored word painting is again in evidence in "Justus Hjelm." Ole Bang's "Indfald" is described as incoherent, yet having both merit and humor. Flirtation is again the theme of Hjalmar Christensen, in "Mat Blod"; the "new woman" is portrayed with some originality in Al-vilde Prydz's "Mennesker" and "Drøm"; the rights of woman are advocated in Helene Diekmars "Ud i Livet" and "Ellen," and in the novels and plays of Anna Munch, whose keenly psychological "To Hus-truer" is the work of a sympathetic artist. Further new fiction includes J. Vibe's "Om tusend Aar," O. Hansson's "Reisen hjem," and J. Paulsen's "Kunstnervaturer." Lyrical poetry is being cultivated by a number of very talented young writers. Nils Collett Vogt (author of the romance "Familiens Sorg") sings the praise of a passionate delight in love and life; Sigbjørn Obstfelder, a "gentle visionary" of deep feeling, is perhaps not as intelligible to the general public in his tender and peculiarly individual poetry as in his melancholy novel "Liv"; and Vil-helm Krag (author of the prose poems "Nat") expresses the rich variety and color of his fancies in tender, melodious verse. Otto Sinding, the painter, has issued a collection of gloomy and strangely ro-



mantic poems, and Sven Nilssen's "Skygger" (prose poems) give proof of a vivid imagination and a brilliant style. Of dramatists, Gunnar Heiberg, whose great talent, we are told, is not yet fully appreciated in Norway, is as original, ingenious, unconventional as ever in "Det store Lod." Fru Hulda Garborg's "Mödre" (a peasant subject) is gloomy in tone; Vetle Vislie's "Fru Gerde" is a sympathetic depiction of sorrow; T. Madsen's "Marionetter" achieved a "scenic success"; Jacob B. Bull, in "Uden Ansvar" and "Alvorsmænd," makes fanatical attacks on the naturalistic school, although, it is said, he is in his ardor guilty of the same excesses which he condemns; V. Krag's charming "De Gamles Juleaften" affected one critic like "a blithe sonata"; G. Finne handles complicated psychological problems well in "Uglen" and "För Afskeden"; H. Christensen (author also of "Unge Nordmænd," a volume of clever critical essays) analyzes the flirt in "En Seirherre" and "Folkets Tjener," as in his novels; Jonas Lie's "Lystige Koner," despite its sparkling dialogue, has not made a strong impression; Knut Hamsun's "Ved Rigets Port" is weak and rather commonplace; and Thomas P. Krag's peculiar "Kong Aagon" is likewise not faultless.

**Poland.**—National history has been contributed to in N. W. Berg's "Memoirs of Polish Conspiracies and Rebellions, 1831-'62"; St. Poplowski's "Revolt of Kosciuszko"; K. Górski's "History of the Polish Cavalry"; N. Konie's "A Page from the History of Civilization in Poland"; S. Komornicki's "Poland in the West in the Light of Figures and Events; Part I: The German Colonization"; Fr. Papée's "History of Lemberg"; Ig. Pradzyński's "Historico-military Memoirs of the Polish-Russian War in 1831"; A. Kraushar's "Frank and the Frankists, 1726-1816," an account of the "adventurous reformer of the Polish Jews"; Z. Kaczkowski's "Woman in Poland"; and L. Finkel's "Bibliography of Polish History." A. Reman's "The Tatra Mountains: A Physico-geographical Study"; and M. E. Trepka's sympathetic "England and the English" are worthy of mention. "The Book of Polish Proverbs" is by S. Adalberg. L. Finkel and S. Starzyński's "History of the University of Lemberg" is good, though somewhat nationalistic in tone. J. B. Antoniewicz has issued an "Illustrated Catalogue of Polish Art from 1764 to 1886: Exhibition at Lemberg, 1894." W. Spasowicz has written of "Schiller and Goethe: Their Ten Years' Friendship," and in Polish literary history we have the fourth and last volume of the "Life of Adam Mickiewicz," by a son of the famous poet; S. I. Czarnowski's "Slavic and Polish Journalism" and "Periodical Literature and its Development"; and a second series of "Our Novelists," by the noted critic P. Chmielewski, who in "The Polish Poets of the Day" deals with younger men such as Z. Przesmycki, K. Tetmajer, J. Kasprowiez, S. Rossowski, A. Oppman, and A. Niemojewski.

H. Sienkiewicz's "The Polonicki Family" is the most important novel of the year. The veteran J. Zacharyasiewicz sustains his reputation in "Bread" (dealing with the political situation in Prussian Poland), "Under Three Governments," and "Orion and Chrysanthema" (a stinging satire on modern naturalism); B. Prus has published a collection of very good novelettes; the Polish Jew is again portrayed in "The Dark Cot" and "Life and Deeds of Monsieur Boruch Kaltkugel," by C. Junosza, author also of "Village Photographs" and "The Villa of the Regent"; and T. T. Jez describes Galician affairs in his satirical romance "Elizabeth." The list of fiction includes also M. Gawalewicz's "Begun in the Morning" "Parting Souls," and "A Strange Fellow"; "The Golden Chains," the first longer work by W. Gomulicki, a noted poet and short-story writer; Ostoja's "The Pupil"; Mlle. M. Rodziewicz's "On the Path of the Swallows" and short stories, especially "The Soldier's Stock"; Mme. Hajota's somewhat naturalistic "Her Son"; Mme. A. Krzyzanowski's even more drastic "For Others' Faults"; "Cotton,"

a description of life in a manufacturing town, by W. Kosiakiewicz; Abgar-Soltan's "From a Country House" (warm-hearted tales of the minor nobility); the prolific A. Krechowicki's "The Limit"; "Jan-ka" and "Limbo," by Mme. G. Zapolska, a prominent exponent of naturalism and eroticism; A. Konar's "The Malinowski Sisters"; "High-life Doctor," "The Countess," "The Actress" (all three with subtitle "The Nemesis of Life"), and "Nera Polacca," by W. Loś; Esteja's "Foggy Weather"; K. Gliński's "The Architects of Fortune"; S. Baryczka's "Stories and Novelettes"; T. I. Choński's "Without Choice: Stories"; and Fr. Hoesick's "Solitude: Pictures and Stories." The poetry of the year includes a second volume of poems by K. Tetmajer and "Love," a collection of lyrics by the gifted J. Kasprowiez, both somewhat marked by doubt and skepticism. A more healthy tone is found in the poems of J. Wierzbicki. Deotyma, a very talented woman, has attempted a heroic poem in "Sobieski before Vienna," and K. Kaszewski has issued a very satisfactory version of the tragedies of Æschylus. There were no startling successes on the stage, but K. Zalewski's "The Woman Cheat"; Z. Sarnecki's "Proud Souls," adapted from Mme. Orzeszko's novel "Bene Nati"; and M. Wolowski's "Towarzysz Pau-cerny," a historical comedy, were well received. "The Rich Widow," by M. Balucki, and "The Straggler," by S. Graybner, have added nothing to the reputation of those popular writers of comedy.

**Portugal.**—The very infrequent appearance of Portugal in these annual summaries is in part explained by the published results of the census of 1890, which, it is reported, show that of the 5,000,000 inhabitants of the little country, 4,000,000 are analphabets.

**Russia.**—A "Russian History," by Belov, an old pedagogic; Evarnitski's "History of the Zaporozhski Cossacks" (Vol. II.); Philipoff's "History of the Senate, 1725-'30"; and Brueckner's "The Rasumovski Family" (Vol. V of his collection), illustrate various phases and periods of Russian history, as do also Count Leliva's "Russo-Polish Relations"; N. Notovitch's "L'Empereur Nicolas II et la Politique russe" (Paris); V. Vereshchagin's "In War in Asia and Europe"; and M. G. Volkhovski's "Russian History in Biography: Nineteenth Century." Discussion of "the economical aspect of the social programme" has been animated, as always. The "Marxites"—such as N. Beltov (pseudonym), in "On the Question of the Development of the Monistic View of History: A Reply to Messrs. Mikhailovski, Karéef & Co.," and P. Struve, author of "Critical Notes on the Question of the Economic Development of Russia," who receives support from Skvortzov (in "Economic Studies") and Golovin—are determinedly attacking the doctrines of the "Populists" as well as of the influential circle of writers on the staff of the "Russkoyé Bogatstvo" ("Russian Treasury"), who take an intermediate position in the dispute. The "subjective method in sociology," upon which this latter critical school was founded, is again put forward in Karéef's "Juridico-Philosophical and Sociological Studies." However, we are told that the replies to Struve's book, by Mikhailovski, the "Populist" Vorontzov (whose "Outlines of Theoretical Political Economy" has appeared), the economist Karushof, Krivenko, N—on (Danielsson, author of "Outlines of Agriculture after the Reform"), Yujakof, and others less notable, only serve to show that a more thorough and unbiased study of the economic condition of Russia is necessary before a final settlement of the question can be thought of. Interesting problems in political and social science are dealt with in M. Kovalevski's great work on "The Origins of Contemporary Democracy"; Manuilov's thorough study of "The Irish Land System"; L. Yanjul's "Commercial and Industrial Syndicates," material for which he collected in America; and A. Miklashevski's "Money: An Attempt to Study the Fundamental Postulates of the Theory of the Classical School in Connection with the History of the Mone-



tary Question." The Franco-Russian J. Novicov, in "Les Gaspillages de la Société moderne" (Paris), reduces to figures the time and money lost through militarism, bureaucratic red tape, lawsuits, tariffs, etc. I. Ivanof has made interesting researches concerning "The Political rôle of the French Theater in Connection with the Philosophy of the Eighteenth Century," and the Psychological Society of Moscow assiduously pursues the study of its specialty. The growing interest in reading and self-culture is voiced by Prugavin's "On the Demands of the People and the Duties of the Intellectual Classes with Reference to Education and Culture" (second edition) and Rubakin's "Study of the Russian Reading Public," and finds expression in the activity of the "Committees of Education" of Moscow and St. Petersburg and the Moscow Commission for the Organization of Home Reading, whose traveling lectures are furthering the cause of university extension. The importance of this movement is pointed out by a Russian writer, who states tersely that misrule and ignorance "are the principal plagues of contemporary Russia." In this connection we note the increase in popular scientific works, many of them translations. V. S. Baskin, in "Russian Composers," deals with P. I. Tchaikovski. In literary history, the most important publications are Vengerof's "Russian Poetry" (works of poets of the eighteenth and early nineteenth centuries); I. Zhdanof's "The Russian Heroic Epos," the work of an authority on ancient Russian literature; and V. Goltzef's "Literary Sketches."

No especially important work of fiction has seen the light. D. Mamin-Sibirski describes life in the Ural territory in "Siberian Tales," gives a sympathetic and humorous picture of literary Bohemianism in St. Petersburg in "Sketches from the Life of Pepko," and unfolds "an entire epos of local life at the time of the economic revolution" following the emancipation of the peasantry in "Bread." Boborukin, though always showing literary skill, is, we are told, more successful when he can seize upon some momentary social fad as a subject for his novels than when he is compelled to draw upon his imagination. Thus he has had alternately success and failure with "On the Wane," "Basil Terkin," "Crossing the Top," and "The Pleader." Garin continues his "Childhood of Tema" and "Gymnasiasts" in a truthful picture of the life of "The Students"; Count Leo Tolstoi's "Master and Workman" met with great success; Stanyukovich has written "New Naval Stories"; Korolenko's visits to England and America have inspired "A Free Fight in the House"—i. e., the House of Commons—and "Without a Tongue" (relating a touching experience of some Russian emigrants in New York); and Mine. Lukhinof, a new writer, has published "recollections of her school days and a picture of Siberian life." It was reported that Count Leo Tolstoi's 5-act play "The Might of Darkness," hitherto prohibited by the censor, had been performed with immense success.

**Spain.**—Historical works are, as ever, plentiful; and if, as one American critic has written, "the new spirit in historiography is but slowly penetrating the intellectual gloom," yet Spanish critics hopefully see improvement. Spanish historians are industrious, and Rafael Altamira, author of "La Enseñanza de la Historia," is doing much to prepare the way for new methods. Of the voluminous "Historia general de España, escrita por Individuos de Número de la Real Academia de la Historia bajo la Dirección de Ant. Cánovas del Castillo." Cuad. 1-229 have been issued, one of the newest volumes being C. Fernández Duro's "La Marina de Castillo"; and "España: sus Monumentos y Artes, su Naturaleza é Historia," reached Cuad. 268 in 1894. C. de Casa Valencia has issued "Estudios históricos." Many contributions to local history have again appeared, though but few give evidence of original research, among such being F. Candau y Pizarro's "Prehistoria de la Provincia de Sevilla"; C. Cañal's "Yacimientos prehistóricos de la Provincia de Sevilla"; E. J. de Labayru y Goicoe-

chea's "Historia general del Señorío de Bizcaya"; Sancho's "Mallorca en 1612 y los Libros de la Tabla numularia"; R. Alvarez de la Braña's "Galicia, León y Asturias"; "Tarragona antigua y moderna"; "Apuntes históricos sobre la Villa de Torrijos"; and M. Bonet's "Rebellión de Menorca en 1463." Much attention is also paid to Spanish-American history, to the study of which the Columbus quartercentenary gave a decided impetus. Vol. XIII of Father Cappa's "Estudios críticos acerca de la Dominación española en América" and Vol. XI of the collection of "Libros raros que tratan de América" have appeared; J. Coroleu died when two volumes of his "América: Historia de su Colonización, Dominación, é Independencia" had been issued; J. T. Medina has edited "Descubrimiento del Río de las Amazonas, según la Relación hasta ahora inédita de Fr. Gaspar de Carvajal." Cuban affairs have inspired numerous pamphlets and books, dealing mainly with politics and the question of home rule, among them being "La Guerra de Cuba," by E. A. Flores. The Philippine Islands form the topic of Montero y Vidal's "Historia general de las Islas Filipinas"; Belloc's "Misiones de Filipinas"; "Biblioteca histórica Filipina" (Vol. IV); R. Comenge's "Cuestiones filipinas; 1ª Parte: Los Chinos"; and L. Comenge's "Recuerdos de Filipinas." The "Historia general de las Islas Canarias," by A. Millares, is completed with Vol. X. The diplomatist E. Dupuy de Lôme, in "Estudios sobre el Japon," gives the fruit of experience in Yokohama, and explains why Spanish influence in the East has declined. C. Gimeno de Flaquer's "Madres de Hombres célebres" is marked by "magic of style, profundity of thought." In the broad division geography we have "Pericia geográfica," a series of lectures on colonization in the East; R. Torres Campos's "Estudios geográficos"; and Soriano y Rodrigo's "Moros y Cristianos," notes of a journey to Melilla. The taste for archaeological studies appears to have greatly increased, resulting in the publication of new works on the art and antiquities of Spain, among which are: Cano y Cuestas's "Prehistoria y Tradiciones de Sevilla"; Vives's "Sepulcros prehistóricos de Ciempozuelos"; Saralegui y Medina's "Estudios sobre la Época edicta en Galicia"; "Viaje á Asturias pasando por León"; La Braña's "Galicia y Asturias"; and Perez Galdós's "Cuarenta Leguas por Cantabria." Several books on bull fighting have appeared, including one by Candela, a self-styled adept in "Tauromaquia." Eduardo Verdegay y Fiscowich's "Historia del Corréo" has been praised. An important bibliographical work is the catalogue of the library of the collegiate church of Xerez de la Frontera. The voluminous literature on Cervantes has been added to in Julian Apraiz y Sainz del Burgo's learned "Cervantes vascófilo, ó Cervantes vindicado de Antivizcaínismo." F. Martínez Ruiz writes of "Anarquistas literarios: Notas sobre la Literatura española."

Novels are numerous as ever, the successful ones including José María Pereda's "Peñas arriba"; Juan Valera's "La buena Fama"; Enrique Sepúlveda's "Cuentos"; Altamira's "Cuentos de Levante"; "Narraciones vulgares," by Juan Guillen y Sotelo, a young writer of promise; and the prolific Perez Galdós's "Torquemada y San Pedro" and "Torquemada en el Purgatorio." Father Coloma, S. J., has again caused a stir with "Retratos de Antaño," aimed, like his "Pequeñeces," against the vices attributed to the upper classes, and dealing with historical characters. Further prose fiction includes J. K. Mélida's "Don Juan decadente"; "Viajes, Hazañas y Aventuras de un Héroe del Siglo XIII," a historical novel of merit by A. M. del Valle y Serrano, Marqués de Villa Huerta; and M. Hernández Villaseca's "Jurar en vano." "Poetry, both lyrical and dramatic, is," we are told, "visibly on the wane," although there are numerous young versifiers "still adhering either to the semiclassical school of Cienfuegos, Melendez Valdés, and Quintana . . . , or to the romantic of Espronceda and Zorilla," and Menéndez y Pelayo



continues to issue his "Antología de Poetas líricos castellanos" (Vol. V). Among those who have issued volumes of poetry during the year are N. Díaz de Escobar, J. Pérez Zuñiga, R. de los Reyes, J. Guerra Ojida, M. Reina, A. Sánchez Pérez, and Manuel del Palacio, who ranks with Campoamor and Nuñez de Arce. Jesus Rodriguez Lopez ("Cousas das Mulleres") is prominent among those Gallegan poets who write in the local idiom, which, "both as to prosody and orthography, is in an anarchical state." H. Pérez Placer's "Contos da Terraña" (No. 38 of the "Biblioteca Gallega") is praised for interesting local color. We are likewise informed that "the classical comedy is losing ground and being replaced by short pieces in one or two acts, frequently in prose." The number of plays performed and published every year is very large. Echegaray's "La Monja descalza" and "Mancha que limpia" have been well received, while "Teresa," by Leopoldo Alas (*Clarín*), and Perez Galdós's dramatization of his popular novel "Torquemada y San Pedro" were failures. Bustamante's "El Nido ageno" (comedy in prose); "El Duque de Gandia"; Gonzalez de Alora's "El Mojon de San Francisco" and "La Coloma"; "Nada," by Muñez; Ferrer y Codina's "Un Concert de Bofetadas"; and "Miel de la Alcarria" were produced with more or less success. J. Jackson Veyán, A. J. Afán de Ribera, M. Echegaray, J. Abate, C. Arniches, J. Dicenta Luciano, C. Gumiá, C. Navarro, J. de Velilla, F. Milgares, F. Pérez y González, J. Salcedo, and E. Navarro Gonzalvo have written plays, many of which are one-act comedies.

**Sweden.**—New contributions to national history are: G. Lindström's "Anteckningar om Gotlands Medeltid" (Vol. II); a new and in part rewritten edition of C. G. Malmström's excellent "Sveriges politiska Historia från Carl XI's Död till Statshöfvingen, 1772"; and a continuation of H. Hildebrand's interesting and full "Kulturhistoriska Teckning af Sveriges Medeltid." The commemoration of Gustavus Adolphus, celebrated with great enthusiasm, occasioned much new writing in honor of the great hero king. "Tal vid åtskilliga Tillfällen" is by Oscar Fredrik (King Oscar II), whose speeches are praised as specimens of peculiarly national literature. O. H. Dumrath has written of "Furst Otto von Bismarck, Tyska Rikets Grundläggare i hans Anföranden, Bref och Samtal." The Swedish Academy has begun the publication of a voluminous "Ordbok öfver Svenska Språket." B. Lundstedt recounts the history of "Sveriges periodiska Litteratur"; O. Levertin deals with "Gustaf III som dramatisk Författare"; P. G. Lyth makes a study of "Tegnér och Fritiofssaga"; G. Ljunggren continues his "Svenska Vitterhetens Häfder efter Gustaf III's Död," a work of extensive research; and J. F. Stenborgska has written "Skådebanorna; Bidrag till Stockholms Theaterhistoria." The centenary of the death of Karl Mikael Bellman, the famous poet and humorist, gave rise to a quite extensive literature dealing with this most popular poet of Sweden, who created types of universal interest. V. Rydberg (author also of "Singoalla") attacks modern materialism with youthful enthusiasm in "Varia: Tankar och Bilder."

Here, as elsewhere, realism is being succeeded by romanticism and symbolism. A "subdued romantic coloring" pervades "Purpur," a series of sketches by P. Hallström, whose "Vildna Faglar" had proved him to be a poet of merit and a keen and sympathetic observer of human nature. "En Roman om Förste Konsuln" (published anonymously by Fru Malling, *née* Kruse), which enjoyed a great success, gives excellent portraits of numerous historic characters—Napoleon himself, however, being treated too romantically. New contributions to prose fiction by G. Nordensvan, Turdus Merula ("En Roman på Landsbygden"), A. Noreen ("Spridda Studier"), G. Schröder ("Gamla Minnen"), and Sigurd ("Patron Jönssons Memoirer") have also appeared. The essentially lyric character of the Swedish poetical temperament is again exemplified in noteworthy verse by well-known poets such as W. V. Heidenstamm, G. Fröding, and O. Levertin, as well as younger men—among them

marked individualities like A. V. Klinckowström, who has treated themes in Scandinavian mythology.

Some interesting books have been published in Helsingfors. The fine work "Finland in the Nineteenth Century," described by Finnish authors and artists, an excellent picture of the astonishing material and intellectual development of Finland, was issued in Swedish, Finnish, German, Russian, French, and English editions during 1893-'95. Edv. Bergh tells the story of "Finland under det första årtiondet af Kejsar Alexander III's Regering" and Gust. Grotenfeld has compiled "Katalog der Bibliothek der finnischen Literaturgesellschaft. Literatur über finnische Sprachen und Völker." "George Eliot och den engelska naturalistiska Romanen" is the theme of H. Westermarck. Reference should be made to the "Finsk Tidskrift," an admirably conducted magazine, the "Skrifter utgifna af Svenska Literatursällskapet i Finland," and the "Acta Societatis Scientiarum Fennicae."

**Switzerland** (see also report for 1893).—Although all books in German are grouped under Germany (*q. v.*), an exception is again made in favor of Swiss works which have a distinctly national or local interest. Important serials and periodicals are "Bibliographie der schweizerischen Landeskunde," published by the "Centralkommission für schweizerische Landeskunde"; "Schweizerische Statistik" (to which subject the "Zeitschrift für schweizerische Statistik" and the "Statistisches Jahrbuch der Schweiz" are also devoted); "Schweizerische Rundschau"; "Jahrbuch für schweizerische Geschichte"; "Anzeiger für schweizerische Geschichte"; "Anzeiger für schweizerische Alterthumskunde"; "Mittheilungen der Antiquarischen Gesellschaft in Zürich"; and "Quellen zur Schweizer Geschichte," published by the "Allgemeine geschichtsforschende Gesellschaft der Schweiz," as is also G. v. Wyss's "Geschichte der Historiographie in der Schweiz." New biographical monographs are Rud. Stachelin's noteworthy "Huldreich Zwingli" and W. Kayser's "Pestalozzi." Jacob Baechtold has edited "Schweizerische Schauspiele des 16. Jahrhunderts"; and a "Schweizer Dichtermappe" contains contributions by the late Gottfried Keller, Karl Henckell, Josef Joachim, Mathieu Schwann, Friedr. Wrubel, Elie Tomarkin, Leopold Jacoby, Adolf Frey, etc. P. Godet's "Histoire littéraire de la Suisse Française," crowned by the French Academy, has appeared at Paris in a second edition. The publication of a "Bulletin bibliographique de la Suisse française" was begun in November, 1895.

**LOUISIANA.** a Southern State, admitted to the Union April 30, 1812; area, 48,720 square miles. The population, according to each decennial census since admission, was 152,923 in 1820; 215,739 in 1830; 352,411 in 1840; 517,726 in 1850; 708,802 in 1860; 726,915 in 1870; 939,946 in 1880; and 1,118,587 in 1890. Capital, Baton Rouge.

**Government.**—The following were the State officers during the year: Governor, Murphy J. Foster; there was a vacancy in the office of Lieutenant Governor; Hiram R. Lott, who had been Acting Lieutenant Governor, resigned to become consul at Managua, and died there, June 6; Secretary of State, T. S. Adams; Treasurer, John Pickett; Auditor, W. W. Heard; Adjutant General, T. F. Bell; Superintendent of Education, A. D. Lafargue; Commissioner of Agriculture, A. V. Carter; Commissioner of Insurance, Simcon Toby; Attorney-General, Milton J. Cunningham; Chief Justice of the Supreme Court, Francis T. Nicholls; Associates, S. D. McEnery, Lynn B. Watkins, Joseph A. Breaux, Henry C. Miller—all Democrats.

**Finances.**—The State bonds have risen in value since the decision to begin buying them up with the surplus of the interest funds in the treasury. The Board of Liquidation advertised

for bids on them, and when the bids were opened, in November, it was found that bonds aggregating \$1,122,000 were offered, more than half at par and above. The Board of Liquidation purchased \$200,300 at an average price of 99 $\frac{3}{4}$ .

The levee bonds are also in favor, as shown by the fact that the Pontchartrain Levee Board redeemed \$22,000 of its first issue at par, in June.

**Judicial Decision.**—A case that had been in the courts for years was settled in August. The First National Bank of Shreveport refused to pay its taxes of 1890, on the ground that the assessment was illegal and excessive; that the police jury sitting as a board of reviewers had assessed the stock of the bank, which was in United States bonds, exempt from taxation; and that the assessing of the stock of the bank at a higher rate than the tax of individuals was in violation of the Constitution of the United States. A rule to compel the bank to settle or produce its stock for seizure and sale was tried and sustained and made absolute.

**Education.**—The latest report of the public schools available is that for 1894, made to the State Board of Education, Oct. 31, 1895, by the State Superintendent. The enrollment was 155,926, and the average attendance 109,435. The total number of public schools was 2,746, an increase of 101 over 1893. The white schools numbered 1,921, and the colored 825; 3,421 teachers were employed, of whom 2,506 were white and 915 colored, one third of the force of white teachers being men.

The average annual expenditure for a pupil is \$4.89 for tuition; including the whole cost of the system, it is \$6.91. The average length of school sessions in months is: White, 5.69; colored, 4.66. The total receipts of the year 1894 amounted to \$1,166,995.01, against \$982,119.71 in 1893 and \$1,114,915.52 in 1892.

The most prominent increases in revenue are noticeable in the gains of current school funds accruing from the State tax, amounting in 1894 to \$213,549.62; but there was a slight decrease of revenue from the poll tax, which yielded \$95,028.25. The amount realized from jury taxes has gained steadily, showing in 1894 a gain of 4 per cent., being \$143,364.58.

Another large source of revenue for 1894 was the corporation or municipal tax, though most of the \$343,681.01 reported was levied by the city of New Orleans. The interest from the sales of sixteenth sections has increased perceptibly. The amount paid to the school boards in 1894 was \$44,273.88. Other receipts are from rent of school lands and such miscellaneous sources as fines, donations, sale of ferries, etc., and in a few cases loans. The aggregate of these in 1894 was \$281,349.38.

The expenditures amounted to \$732,388.37, and the total for the last five years, 1890-'94 inclusive, \$3,134,267.75. The late Legislature appropriated \$1,500 to aid the work of teachers' institutes, of which 14 of one week each were held in 1894-'95.

The State Normal School in ten years has sent out 167 graduates.

Louisiana has a Chautauqua—at Ruston, on the Vicksburg, Shreveport and Pacific Railroad. The grounds occupy 15 acres and the auditorium seats 2,000. There is a large hotel, a natatorium,

and a bath house supplied from the mineral springs. It has been in operation four years, and had 103 pupils enrolled in 1895.

**Products.**—A new process for mining sulphur, the Frasch method, has been put in operation in Calcasieu Parish, at Sulphur City. This is the first time that sulphur has been liquefied in the earth and removed in a molten state, and as an engineering feat it is one of the most novel. The peculiarity of the sulphur deposits here, on account of the quicksands overlying them, and the enormous quantities of *contaminia* in the sulphur-bearing rock itself, made all attempts at mining this sulphur by ordinary means impossible. A bore hole was sunk, such as is used in pumping oil. Superheated water was introduced under pressure, and the sulphur liquefied and removed by pumps, like oil.

The cotton crop for the year ending Aug. 31 showed a large increase over that of the preceding year, the Gulf States showing a gain of 784,587 bales; but the prices were lower, the average at New Orleans being 5.92 cents. The crop of Louisiana alone was placed at 600,000 bales.

The consumption in all the mills in the South was 144,323 bales more than in the previous year; in Louisiana the gain was 3,123 bales.

The Cotton Growers' Convention, held at Shreveport in January, strongly advised reduction of the cotton acreage, diversification of crops, and establishment of mills and factories, and resolved further "that it is the sense of this convention that the legislatures of the cotton-growing States make appropriations with a view of creating a fund to be paid to the successful inventor of a plantation cotton-seed-oil mill." The Cotton Bale Convention adopted measures looking to uniform and improved baling.

The outcome of the rice crop this year was discouraging. The extreme high rate of freight which the Southern Pacific Railway is charging on rough rice is eating up from 25 to 50 per cent. of the value of rice. It appears that the Calcasieu rice is greatly injured in the sale by the presence of red grains in large numbers, which is due to failure to renew the seed.

According to the annual sugar book of Mr. Bouchereau, which is the recognized authority on the sugar crop of the State, the yield of 1894-'95 was 355,384 short tons, which is by far the largest sugar production in the history of the State. Last season's crop was made in 449 sugar houses, as against 906 houses in operation ten years ago. Each of the sugar houses in operation last season, however, averaged a production of 220 long tons.

The sugar-planters have been kept in suspense this year by the varying prospects for payment of the bounty on the crop of 1894. First, in January came the decision in the Miles Planting Company's case adverse to their claim; the Court of Appeals of the District of Columbia decided not only that the law authorizing the payment of a bounty on sugar has been wholly repealed, but that, in addition, the paying of bounties and subsidies by act of Congress is not only wrong in principle, but finds no warrant in the Constitution. In March the amendment to the sundry civil appropriation bill, appropriating \$5,000,000 for payment for the unpaid bounty claims of 1893 and eight tenths of a cent



per pound on the crop of 1894, finally passed Congress, and it seemed that the matter was settled satisfactorily to the planters, though, as the claims somewhat exceeded the appropriation, it was inferred that a *pro rata* distribution would be made and the claimants would be obliged to wait for a further appropriation. Then came the decision of the Comptroller of the Treasury, July 17, not to pay the bounty until he should be convinced of the constitutionality of the act, or till it should have been established in the courts. His decision, given two months after the date, July 1, at which it was expected that the appropriation would be available, was adverse to its constitutionality, and he directed, Sept. 5, that the papers in the case before him be sent to the Court of Claims for the establishment of a precedent. Secretary Carlisle granted an appeal from the Comptroller's decision, Sept. 10. In November suits were filed as test cases in the United States Circuit Court by the Realty Company, Andrew H. Gay, and others to compel the payment. The answer of the Government, Dec. 12, asked that the bounty law be declared unconstitutional. Judge Pardee held the bounty act constitutional, and that it must be enforced; that an act of Congress for the expenditure of money can not be revised by court or official. The District Attorney was instructed, Dec. 30, to take an appeal to the United States Supreme Court.

**Public Lands.**—The report of the register and receiver for the New Orleans land district, which comprises 52 parishes, shows that 870 homestead entries were allowed by the Land Office, covering 97,723.53 acres; 582 final certificates and receiver's receipts were passed, covering 74,604.54 acres. There were 12 timber-culture entries passed, covering 1,563.97 acres. Of the 401 homestead entries canceled, 46,016 acres were thrown open to the public. During the fiscal year 20,746 acres were relinquished.

**Water Ways.**—The beginning of work on the locks of Plaquemine Bayou was celebrated at Plaquemine Sept. 3, and was attended by more than 3,000 persons from adjoining parishes. This work, which can be completed, it is estimated, in five years, if Congress keeps up the appropriations, is to connect the waters of the western part of the State with the Mississippi.

**Changes in the Land Level.**—Major Quinn, in charge of the lighthouse district, has recently made a close inspection of the alleged increase in the height of the tides. He placed tide gauges in deep water, and from the "continuous record kept on these tide observations discovered that since 1875, when the levels were made, the delta had subsided exactly 1 foot. These gauges and tide levels were placed in position in 1875 and verified in 1877. Between that date and 1889 the level went down 1 foot, but within the past five years the tides have been stationary or nearly so." The city of New Orleans is about 16 feet above the level of the Gulf.

**Prize Fighting.**—In a suit brought by the State against the Olympic Club, for an injunction to restrain it from giving prize fights, a verdict in favor of the club was given by a jury in the district court, March 11. The State appealed to the Supreme Court, which remanded the case to the district court on the ground that expert testi-

mony should not have been admitted. On this trial the jury was waived and the judge gave judgment for the club. He said the statute forbids prize fighting and permits glove contests without defining them; he found that a prize fight is a glove contest and a glove contest is a prize fight, and that the act is "a piece of legislative fraud and mendacity," neither defining the crime of prize fighting nor providing "any penalty which can not be evaded by the mockery of covering with gloves the hands of the gladiators"; therefore, he found that "prize fighting is now what it never was before the enactment of statute No. 25 of 1890, a legitimate business and domestic industry, under the special protection of the law, while before the passage of that statute it would constitute the crime of assault and battery, and in some cases of manslaughter." A second appeal was taken by the State, and the Supreme Court reversed the decision and granted the injunction defining the meaning of glove contests in the law: "We conclude that the glove contests in athletic clubs, or elsewhere, when the object is only for a display of the art of boxing, as generally understood and practiced, without the prerequisites of challenge and training and the attendant circumstances of a prize fight, are not what is commonly known as prize fights, and therefore the proviso has no relation to, or connection with the offense denounced by the statute."

**Aid for Nebraska.**—In response to a call from the Governor, 20 cars were loaded with supplies for the destitute people of Nebraska and sent off Jan. 6. Among other goods they contained 586 barrels of molasses and 93 barrels of sugar, 145 barrels of corn, and 100 barrels and sacks of rice; flour, cornmeal and grits, potatoes, beans, coffee, tea, and many other articles of food, besides dry goods, clothing, and other necessities; also a car load of salt from the mines of Avery's Island, and a car load of dressed lumber of great value.

**Labor Troubles.**—The trouble on the wharves between white and colored laborers which began in October, 1894 (see "Annual Cyclopædia" for 1894, page 443), continued and broke out in a riot March 11 and 12. Four men were killed, and 8 were badly wounded.

The business of loading cotton has been monopolized by the white crew, who screw or load the cotton bales into the holds of vessels. They constitute one of the strongest labor unions in the country. They have an annual income of \$50,000, and have \$160,000 in bank. They have dictated terms on the levee, commanding wages of \$5 or \$6 a day. At the beginning of the last season, the white laborers, considering that there was not enough business for them and the negroes, concluded to drive the latter from their work. The ship agents, under orders from the shipowners abroad, who are mainly English, stuck to the negroes, and the result was a running warfare, in which a number of levees were sacrificed and some property destroyed. The war began with incendiary fires, which destroyed the wharves of the West Indian Steamship Company, with \$250,000 loss; the wharves of the Texas and Pacific, with 25,000 bales of cotton; loss, \$500,000.

Gov. Foster issued a proclamation calling out

the militia, and the negroes resumed work the afternoon of March 14 under protection.

The State Legislature passed an act in 1880 declaring that "no sailor or portion of the crew of any foreign seagoing vessel shall engage in working on the wharves or levee of the city of New Orleans, beyond the end of the vessel's tackle" under penalty of imprisonment for ten days. Recently the Cuban Steamship Company, during a period of trouble on the levee, when men could not be got to work, attempted to use their own sailors to load one of their ships lying in this port. The men were arrested under the State law and operations were stopped in the handling of cargo. The agents of the ship applied to the United States Court for relief, and Judge Parlange, in the circuit court, issued an order prohibiting the Mayor and other authorities from interfering with the foreign sailors.

**Care of Lepers.**—A home for lepers has been secured in Iberville parish, according to an act of the last Legislature. An old plantation was bought, and cottages were fitted up for the use of the patients. The board will receive applications for admission, and if the whereabouts of other lepers not applying are learned, the services of the law will be used to bring them in. Hereafter they will be in charge of the Sisters of Charity. It is believed that the disease can be wiped out within fifty years.

**Political.**—A largely attended Free-silver Convention was held in New Orleans, June 10, and resolutions calling for the free coinage of silver were adopted.

The Ballot Reform League called a convention to meet at New Orleans, July 20, and another at Shreveport, Dec. 17, with the object of influencing the Democratic State Convention to pass a resolution in favor of the proposed amendment to the Constitution limiting the suffrage to citizens who are able to read the Constitution in the mother tongue or are owners of taxable property to the amount of \$200; "and also to commit the party to a thorough revision of our laws for the registration of voters and the enactment of an Australian ballot law, so as to prevent false and fraudulent registration and to secure a free ballot and an honest count of the votes of voters legally qualified under the amended Constitution as actually cast."

The Democratic State Convention met at Shreveport, Dec. 18. The ticket nominated was: For Governor, Murphy J. Foster; Lieutenant Governor, Robert H. Snyder, Jr.; Auditor, W. W. Heard; Treasurer, A. V. Fournet; Secretary of State, John T. Michel; Attorney-General, Milton J. Cunningham; Superintendent of Education, J. V. Calhoun.

**LUTHERANS.** The reported statistics (not always complete) of the Lutheran Church in the United States and Canada for the year 1895 are as follow: There are 4 general bodies, 61 district synods, 5,725 ministers, 9,573 congregations, and 1,402,189 communicant members, with a total population of about 6,000,000. There are 3,103 parochial schools, 3,026 teachers, and 188,529 pupils; 4,958 Sunday schools, 49,329 officers and teachers, and 424,188 pupils. The benevolent contributions for the year 1894-'95 (7 synods not reporting) amounted to \$906,240.50. This does not include the contributions for edu-

cational work by individuals and congregations, nor the contributions from similar sources toward benevolent operations not under synodical control, nor the large sums sent directly to missionary and other benevolent societies in Europe.

The educational institutions of the Church number 122, of which 26 are theological seminaries, 42 colleges, 41 academies, and 13 ladies' seminaries, aggregating property valued at \$4,530,350 and endowment amounting to \$1,373,157, having 257,462 volumes in their libraries, employing 679 professors and instructors, and having 11,821 students, 2,833 of whom have the ministry in view. There are 92 benevolent institutions, which report property valued at \$2,643,620, endowment amounting to \$196,874, and 32,164 inmates.

Of the four general bodies, three held conventions during the year.

**General Synod.**—The thirty-seventh biennial convention of this general body, which is composed chiefly of English synods, was held in Hagerstown, Md., June 5-13, 1895. Delegates were present from the 25 district synods. The following officers were elected: The Rev. Prof. H. Louis Baugher, D. D., Gettysburg, Pa., president; the Rev. William S. Freas, D. D., York, Pa., secretary; and Louis Manss, Cincinnati, Ohio, treasurer.

The Committee on Common Service reported an abridged form of the service, which was adopted for the use of such congregations as are averse to the use of the full service. The report of the Hymn-book Publishing Committee set forth its work in the publication of an approved edition of the catechism and of a larger German hymn book with the common service and psalms. The committee appointed to revise the hymns of the Book of Worship reported that they had selected 170 hymns to be inserted, and proposed to omit about the same number. The Committee on the Revision of Tunes of the same book proposed numerous changes. The reports of both committees were adopted, and instruction was given for immediate publication of the revised book.

The Woman's Home and Foreign Missionary society of the General Synod reported 686 local societies, with 18,352 members and contributions amounting to \$42,456.34. About \$8,000 of this amount was contributed for purchase or erection of church buildings and the medical missionaries' home in India. The society supported 8 home missions. In India the society supports 4 missionaries, of whom were sent out in the autumn of 1894, and 2 more are preparing to go out during this year. It supports 22 schools and 35 teachers, with 1,092 pupils.

The report of the statistical secretary presents the following summary: 1,476 churches, 173,408 communicant members; estimated value of church property, \$10,377,387.33; local expenses for all objects, \$1,228,229.36; Sunday schools, 1,425; officers and teachers, 22,350; pupils, 178,201; contributions for local objects, \$104,981.08; for benevolence, \$56,391.01; contributions for benevolence, for the General Synod, \$91,765.94; synodical treasury, \$7,355.51; home missions, \$42,639.08; foreign missions, \$37,699.38; church extension, \$34,304.08; board of education, \$7,960.27, beneficiary education, \$22,531.86; Wom-



an's Home and Foreign Missionary Society, \$25,407.74; pastors' fund, \$5,385.55; orphans' home, \$16,392.62; Deaconess Board, \$501.89; external objects, \$110,779.94; total benevolence, \$321,953.97; grand total, \$1,533,448.53.

The twenty-eighth biennial report of the Board of Foreign Missions was presented by the secretary of the board, the Rev. George Scholl, D. D., of Baltimore, Md. The receipts for the last two years were \$99,655.22, and the expenditures \$97,104.82. During the same period 3 of the woman missionaries returned from India, and 4 new missionaries were sent thither, while another has been called for the work in Africa. The status of the mission in India, with headquarters at Guntur, is 8 missionaries, 1 native pastor, 5 subpastors, 18 catechists, 109 subcatechists, 4 colporteurs, 42 helpers, 427 villages containing Christians, 322 organized congregations, 132 prayer houses or chapels, 6 mission bungalows, a printing press and bookbindery, a reading room and book depot, and a dispensary, 10 mission stations, and 14,265 baptized members. The educational department contains 170 elementary schools and 3,357 pupils; 1 boarding school, with 106 pupils; 1 college, with 36 teachers and 664 students, receipts amounting to \$6,331.02, and expenditures amounting to \$15,587.29. The zenana department contains 6 woman missionaries, with 85 assistants, 166 home pupils, 18 schools, and 900 pupils. The medical department had nearly 300 patients. The work in Africa has its headquarters at Monrovia, Liberia, the Rev. David A. Day, D. D., being the senior missionary in charge. Following are the statistics of this mission: 2 ordained missionaries, 1 native pastor, and 197 communicant members; 14 Sunday schools, with 300 pupils; 3 teachers in the mission schools and 126 pupils. The industrial department contains buildings, machinery, 50,000 coffee trees, and 360 acres, valued at \$73,045.

The thirteenth biennial report of the Board of Home Missions was presented by the general secretary, the Rev. A. Stewart Hartman, D. D., of Baltimore, Md. The board employs two secretaries and carries on all the missionary operations of the district synods, with the aid of auxiliary missionary committees in the district synods. The balance in the hands of the board was \$3,862.13. To this was added during the two years by contributions of the churches \$85,230.21. The expenditures of the board were \$84,446.11. During the same period 163 missions were sustained, cared for by 192 missionaries, serving 205 congregations, and having a communicant membership of 13,392. The missions are distributed as follow: California, 7; Colorado, 5; Connecticut, 1; District of Columbia, 2; Illinois, 9; Indiana, 9; Iowa, 7; Kansas, 16; Kentucky, 2; Maryland, 11; Michigan and Missouri, each 1; Nebraska, 18; New Jersey, 1; New Mexico, 2; New York, 12; Ohio, 13; Pennsylvania, 42; Tennessee and West Virginia, each 1; Wisconsin, 2; and Wyoming, 1. Of these, 148 are English, 11 German, 3 English-German, and 2 Scandinavian. The thirteenth biennial report on Church extension was presented by the secretary of the board, the Rev. Harry H. Weber, of York, Pa. This board, besides the general secretary, employs a field secretary,

whose location is in the West and whose work is that of exploring new territory, securing lots for the building of churches and parsonages, and aiding in the organization of new missions. The receipts for two years, including a balance on hand of \$10,636.70, amounted to \$100,291.39. Loans, donations, and special appropriations were made to 127 congregations, amounting to \$80,741.54. The assets of the board amount to \$238,216.26, besides 311 unimproved lots.

Midland College, at Atchison, Kan., has assets amounting to \$85,146.16, employs 13 professors and instructors, and has 109 students, of whom 6 are in the theological department. This department has been enlarged and reorganized as the Western Theological Seminary. Carthage College, Carthage, Ill., has property and endowment valued at \$58,803.47, 10 professors and instructors, and 156 students. Hartwick Seminary, Hartwick, N. Y., received aid from the board during the past two years. It has real estate valued at \$41,655, a productive endowment of \$41,000, 64 students, and 9 instructors. The whole number of educational institutions under the control of this general body is 6 theological seminaries, 5 colleges, and 1 academy.

The third biennial report of the Deaconess Board was presented by the Rev. George U. Wenner, D. D., of New York city, president of the board. This is a comparatively new work for this general body. The institution in Baltimore is intended as a training school. The duties include the care of the sick and dependent in hospitals and institutions of public charity, ministering in the local church, looking after the neglected and dependent, teaching in Sunday and sewing schools, and managing young people's associations. The treasurer's report shows receipts amounting to \$1,255.83, and expenditures aggregating \$2,218.76.

The Publication Society reported assets amounting to \$75,039.06. The copies of periodicals issued monthly numbered 275,250; new books, pamphlets, and tracts, 12; and 9 new editions of books. The parent Education Society aided 17 young men in preparing for the ministry, with \$1,374.

**General Council.**—This general body is composed of English, German, English-German, and Swedish synods. Its twenty-fifth convention was held in Easton, Pa., Oct. 9-15, 1895. All the synods were represented by large delegations. The following officers were elected: The Rev. Edward F. Moldenke, D. D., New York city, president; the Rev. Prof. William K. Frick, Milwaukee, Wis., English secretary; the Rev. Prof. John Nieum, D. D., Rochester, N. Y., German secretary; the Rev. Prof. L. H. Beck, Ph. D., Brooklyn, N. Y., Swedish secretary; and William H. Staake, Esq., Philadelphia, Pa., treasurer.

The convention represented 650,000 communicant members of the Lutheran Church in North America, or nearly one half of the membership of the Church in this country. The synod of Icelanders in America was organized June 24, 1885, at Winnipeg, Manitoba, two pastors participating in the organization, together with lay delegates from 12 congregations. Since then a number of pastors have been secured directly from Iceland, and a few have been educated in this country for work among the widely scat-

tered Icelanders, of whom there are 20,000 in this country, all Lutherans.

The report of the Board of English Home Missions showed 22 missions under its care, located in Massachusetts, New York, New Jersey, Ohio, Illinois, Indiana, Wisconsin, Minnesota, North Dakota, Oregon, Washington, and Utah. The amount expended during the last two years was \$29,500. The board asked for \$20,000 for each of the next two years, and this amount was apportioned among the district synods. The report of the Board of German Home Missions showed 34 missions cared for by 8 missionaries, located as follows: 1 in Kentucky, 1 in Utah, 2 in Manitoba, 2 in Assiniboia, and 2 in Alberta. The communicant membership numbers 5,000. The treasurer's report showed an income of \$8,355.54, and expenditures amounting to \$8,029.20. The report of the Swedish board, which embraces the missionary operations of the Augustana Synod, showed 155 missions, the expenditures for the two years amounting to \$52,599.20. The missionary operations of the district synods of this body, together with those of the general boards, embraces 321 missions, and the expenditures for the last two years amounted to \$135,241.44. The complete report on Church extension for 1895 has not yet appeared, but that of the previous year shows that the society has assets of over \$10,000, with which missions and needy congregations are aided. All the larger district synods have their own Church extension funds. The foreign missionary operations of the Council are carried on in East India, with headquarters at Rajahmundry, whence the missionaries have gone out to hundreds of villages and have planted numerous stations. A seminary has been established at the central station for the training of Christian teachers and ministers. Three zenana sisters teach the women in the districts, under the care of the missionaries. A new church building is in course of erection at Bhimawaram, and the senior missionary has recently received a gift of \$8,000, with instruction to build another new church. The income for the last two years was \$40,783.61, and the expenditures \$37,333.99. The present status of the mission is as follows: 8 missionaries, with their wives, 3 zenana sisters, 2 native pastors, 4 evangelists, 2 catechists, and 137 teachers, a total of 164 mission workers. There are 7 principal stations, 102 villages where schools have been established, 191 villages where the Gospel is preached, 1,763 communicants, 4,484 Christians, and 1,893 children in the schools. Three monthly periodicals are published, with a combined circulation of 30,000.

The report of the Immigrant Mission in New York city shows that during the past two years 30,000 immigrants were cared for in the Emigrant House. The Augustana Synod has established a Swedish emigrant house in the same city.

For the work of the deaconesses there are now 7 mother houses, with 143 sisters, having property valued at \$700,000, and an annual expenditure of \$70,000. These institutions are in Philadelphia, Omaha, Neb., Milwaukee, Wis., Minneapolis, Minn., Brooklyn, N. Y., and Baltimore, Md. According to language, these may be classified as English, German, Swedish, Norwegian, and German-English.

The report of the Church Book Committee showed that the new edition of the Church Book had been favorably received. It also showed that, according to the action of the body at its last convention, a new edition of the Sunday-school Book would be issued early in 1896, containing about 300 additional hymns, and being supplied with ample liturgical formulas for the opening and closing of the sessions of the schools. It stated that the revision of the translation of Luther's Catechism under the labors of the joint committee of the English-speaking Lutheran bodies would soon be finished. Resolutions were adopted declaring that the General Council is ready to co-operate with all Lutheran bodies that may be willing to enter into the movement for the preparation of one common book of worship for congregations using the English language, on the conditions according to which the common service was prepared; and that the General Council requests other Lutheran bodies in which the English language is used to co-operate in the movement for the attainment of uniformity in the churches. The Committee on Sunday-school Work reported that a twenty-years' course of Bible studies had been completed, and recommended that in future the work should be put on the basis of a graded course of Bible studies. It was decided to adopt a graded system. The committee was instructed to prepare and the Board of Publication to publish a full series of pictures illustrating Old and New Testament history, and in chart form the Ten Commandments, the Apostles' Creed, and the Lord's Prayer for the primary department. This was followed by courses of study outlined for the other departments of the schools, to be published in book or quarterly form, beginning with Advent, 1896.

The Committee on Statistics reported the following summary for 1895: 8 synods, 1,091 ministers, 1,786 congregations, and 323,649 communicant members; 329 parochial schools, 574 teachers, and 24,188 pupils; 1,453 Sunday schools, 19,715 officers and teachers, and 180,183 pupils; benevolent contributions for missions and other charitable purposes, \$252,033.94; 3 theological seminaries, 8 colleges, 4 academies, and 25 orphanages, hospitals, deaconess institutions, and other charitable institutions, with property valued at \$2,500,000 and endowment amounting to \$500,000, the educational institutions employing 147 professors and instructors, and having 2,340 students, of whom 480 have the ministry in view.

**United Synod, South.**—The fifth convention of this general body, composed chiefly of English synods and congregations, was held in Staunton, Va., Sept. 18-21, 1895. Fifty-six clerical and lay delegates were present, to represent 7 district synods, the Mississippi Synod not being represented. The following officers were elected: The Rev. Prof. George W. Holland, D. D., of Newberry College, Newberry, S. C., president, since deceased; the Rev. Lewis G. M. Miller, D. D., of Roanoke, Va., vice-president; the Rev. Melancthon G. G. Scherer, of Concord, N. C., secretary; and Mr. C. H. Duls, of Charlotte, N. C., treasurer.

The business of the convention centered on the 3 subjects of fraternal relations with other



Lutheran bodies, Christian education, and the synod's missionary operations. Action was taken with reference to the overture of the General Synod bearing upon the matter of practical co-operation of the several bodies in carrying on Church operations. The action of this body was favorable to such co-operation, and a resolution was adopted in accord with the action previously taken by other bodies. This led to consideration of the common Book of Worship for all the English-speaking churches. The common service as adopted by several of the general bodies was declared to be not only the "common service of the Lutheran Church of the Reformation period, but essentially the form of worship of apostolic times." The United Synod has adopted this service as it came from the hands of the joint committee. The following resolution was adopted:

That our Committee on Common Service be instructed to confer with similar committees of our other general bodies, or in any other way which may be proper, concerning the securing of a common book of service throughout, including liturgy, ministerial acts, hymns, or, in other words, a book identically the same, and that our committee be instructed to be as urgent and pressing and prompt as the circumstances will admit, believing, as we do, that such action would greatly promote the common welfare of the whole Church.

The report of the Committee on Literary Institutions showed that the synod has 1 theological seminary; 5 colleges for young men, with property valued at \$193,500, endowment amounting to \$91,000, employing 39 professors, and having 566 students, 110 of whom are preparing for the ministry; and 5 colleges for young women, having property valued at \$164,000, with 40 instructors and 389 pupils. This report does not embrace the educational work of the entire Church in the South. There are within the bounds of the synod 24 educational institutions, having property valued at \$607,300, endowment amounting to \$122,500, employing 157 professors and instructors, having 2,376 students. The report of the directors of the theological seminary emphasized the need of an increased faculty, enlarged facilities, and better equipment.

The report of the Board of Home Missions showed that the synod is carrying on mission work at Knoxville, Bristol, Greenville, Johnson City, and Morristown, Tenn.; Augusta and Atlanta, Ga.; Asheville and Winston, N. C.; and Richmond and Norfolk, Va. With the exception of the one at Atlanta, all these missions were

begun within the past five years. They now represent 12 congregations, 793 members, 668 Sunday-school pupils, and church property valued at \$59,000. The annual expenditures amount to \$2,000.

The report of the Board of Foreign Missions presents the following: The United Synod since 1891 has carried on mission work in Japan, with headquarters at Saga, in which the synod's missionaries are the only resident Christian missionaries. There are 6 stations, one of which is entirely supported by the native Church. The communicant membership numbers 31, 11 of whom were added in 1894, and the total membership is 100. Three Sunday schools are maintained, having 60 pupils. Three are studying theology and 6 attend a class for special Bible study. Luther's Catechism has been translated into Japanese, and is largely used. The common service and the orders of ministerial acts have also been translated and are used. The annual expenses of the board amount to \$1,800.

Following is a summary of the statistics of this body: 8 synods, 188 ministers, 361 congregations, and 35,910 communicant members; 297 Sunday schools, 2,778 officers and teachers, and 22,354 pupils; and benevolent contributions amounting to \$24,435.89.

The Synodical Conference, composed of 1 English and 4 German district synods, held no convention during the year. This body is composed of 1,698 ministers, 2,365 congregations, and 479,221 communicant members; it reports 1,722 parochial schools, 905 teachers, and 97,948 pupils; 188 Sunday schools, 215 officers and teachers, and 18,000 pupils. The benevolent contributions for the last year amounted to \$268,406.49. Of the 15 independent synods, the Joint Synod of Ohio, with its 78,000 members, the old Norwegian Synod, with its 58,000, the German Iowa Synod, with 56,000, and the United Norwegian Church, with 105,000 members, carry on their own educational, missionary, and benevolent operations. These synods embrace 1,636 ministers, 3,592 congregations, and 382,817 communicant members; 917 parochial schools, 1,422 teachers, and 65,593 pupils; 1,522 Sunday schools, 5,319 officers and teachers, and 27,116 pupils; and the benevolent contributions of the churches amounted to \$121,660.12.

The reports of the missionary operations of the Lutheran Church in North America include also work among the freedmen of the South and the Indians in various parts of the country. No statistics can be given of this work.

## M

**MADAGASCAR**, a kingdom occupying the island of Madagascar, in the Indian Ocean, east of Africa, recognized as a French protectorate in a convention concluded between France and Great Britain on Aug. 5, 1890. The reigning sovereign is Queen Ranavalona Manjaka III, born in 1862, who succeeded her aunt in 1883 and married the Prince Consort and Prime Minister, Rainilaiarivony. The treaty concluded by the Queen with the French Republic in 1885,

at the conclusion of military operations lasting three years, acknowledged the right of France to control the foreign policy of the Government. This was the thirty-second war with France since the first occupation of a part of the island by the French in 1645. The treaty recognized the sovereignty of the Hova Queen over all the tribes of the island, and permitted the French Government to maintain a resident general with a guard at the capital. Subsequently the

Queen's Government, encouraged by the English and American consuls, denied the French protectorate, and refused to grant *exequaturs* through the French resident. The friction continued after the English receded from their position in consideration of the abandonment by France of her right of joint protection over Zanzibar. Rainilaiivony, the real ruler of the Hovas, made grants of land and mining and forest rights freely to Englishmen or Americans, but refused all concessions to French applicants. Notice was given in July, 1894, that any concession that is not approved by the French resident general and registered at the residence general will be considered null and void. The natives committed many hostile acts against the French and the attitude of the Hova Government became distinctly unfriendly. The French resident general, Le Myre de Vilers, presented a new treaty, defining the French protectorate more clearly, and when the Hova minister refused to sign it he left the capital on Oct. 27, 1894. The French Parliament voted 65,000,000 francs for an expedition of 15,000 troops, and the Hova Government imported arms and prepared for a new war under the military direction of Col. Charles St. Leger Shervinton and other English officers who volunteered to organize the defense.

The area of Madagascar is about 228,500 square miles. The population may be 3,500,000. The most numerous tribes are the Sakalavas and the Hovas. The French formerly protected the former in their resistance to the Hovas, who have exercised dominion over the other inhabitants for two hundred and fifty years. The Hovas, numbering about 1,700,000, are a mixed race of Malay origin, with some Polynesian characteristics. Antananarivo, the capital, has about 128,000 inhabitants. There are some foreign planters and traders in the coast districts, mostly creoles from Mauritius and Réunion. In Tamatave, the chief port, in 1894 the white population consisted of 200 French and about an equal number of British, Germans, Americans, and Italians.

The Government derives its revenue from customs and a poll tax. The French Government has a lien on the customs, securing a loan of 15,000,000 francs made after the war of 1883-'85. The imports in 1890 were valued at 5,597,260 francs, of which 2,725,780 francs were for textile goods, mostly American cotton sheeting to make the white robes worn by the Hovas. The value of the exports, consisting of rubber, hides, wax, cattle, gums, silk, and raffia fiber, was 3,741,355 francs.

**The French Expedition.**—A state of hostilities was formally announced by the French Government on Nov. 13, 1894, in a proclamation reciting violations of treaties by the Hovas and affirming the French protectorate. The Hovas assembled in the market place at Antananarivo, and swore to fight for their independence to the death. The French residents retired to Tamatave, where the French troops, of whom there were on the island about 1,000, strengthened the fortifications. The Hovas threw up earthworks behind Tamatave, but whenever they approached the town they were shelled by the French ships in the harbor. They surrounded in like manner

the French position at Diego Suarez, and from their stronghold at Ambahimarina intercepted all communication and trade. On Jan. 19 Capt. Jacquemin captured the Hova position at Antananikarana, where he secured some English arms. On Jan. 21 the French artillery began to play upon the Hova positions around Tamatave. The fighting lasted four days, at the end of which the Hovas, having been twice repelled, retired from the neighborhood.

A great military assembly was held at the capital on Feb. 20. The Queen addressed over 100,000 men of the military class, promising to prosecute the war to the utmost, while they pledged themselves to serve the fatherland wherever she should send them. The chiefs swore that they would provide funds to carry on the war, even if they had to sell their wives and children into slavery. The veterans of the last war were sent to the front, and 20,000 of new levies went into training at Antananarivo. Some white adventurers were enlisted in Natal and Cape Colony to fight for the Hovas. Several French traders and planters, and one who was a British subject, were killed by the Hovas.

In one of the battles the Hova commander in chief, Gen. Rainandriamampandry, was killed. Early in April the Hova strategic positions on the coast near Tamatave were bombarded. In the middle of April the town of Ambodivohive was captured without the loss of a French soldier. The French officials collected the customs duty of 10 per cent. on all goods landed, not only at Tamatave, but at other ports. These were paid by the European merchants on the understanding that the ports would not be blockaded. After three Englishmen who had been expelled from Tamatave landed at Vatomandry and proceeded to the capital, the French kept a vigilant watch on English shipping.

The French, on Jan. 16, 1895, occupied the port of Majunga, on the west coast, in the country of the Sakalavas, and prepared it for the reception of the expedition that was to set out thence against the Hova capital. The Hovas gradually withdrew their forces from the eastern and southern parts of the island toward the center in order to make ready to resist the advance of the French into Imerina, their own country. Notwithstanding the bold and eloquent speeches of defiance, the Hovas were not generally willing to go to the war. Besides the English instructors there were a number of native officers who had received a military education in France. To check desertions an old law was revived, which condemns any deserter to be burned at the stake. The regular army consisted of six brigades, each numbering 2,000 soldiers, all armed with Remington or Snider rifles, besides auxiliary forces raised among the other tribes, 10,000 strong and equipped with spears and shields. The Hova force was increased to 30,000 men ready for the field, and 20,000 new levies relieved the garrison at Antananarivo.

The French expeditionary force, which began to embark at Lyons in the beginning of April, 1895, consisted of a mixed regiment of the French line, 2,700 strong, 1 of marine infantry, 2 squadrons of mounted chasseurs, 1 Algerian regiment of zouaves and tirailleurs, 3 battalions of native tirailleurs, 1 of French tirailleurs, 6 batteries, and



a squadron of train, making altogether about 15,000 men. The French Government found it cheaper and more expeditious to charter English steamers to transport the troops to Majunga, provoking thereby angry criticism in the Chamber, while the British Government was called to account in the House of Commons for allowing British vessels to be used. French contractors laid a cable from Majunga to Mozambique to connect with the cable of the Eastern and South African Company. At Fort Dauphin the Hovas expelled the French and for a time maintained communications with their English supporters; but later the inhabitants of the whole southern part of the island drove out their Hova officials, attacked and plundered all Europeans, and rebelled against their hereditary Arab rulers and formed petty republics. There was a considerable French party in Antananarivo, headed by relatives of the Queen and the Prime Minister, who expected to supplant them when the French became masters of the Government. When the Hovas knew that the French expedition would certainly be sent, their loyalty and discipline weakened and the revolutionary party increased and grew bold. The Hovas generally were indifferent. A force of 3,000 men was dispatched to Majunga from the capital to aid the Hova garrison of 1,000 men in resisting the landing of the troops, but the majority of the troops deserted. Another force of 4,000 men was sent to oppose the French on the northwest coast. Before the arrival of the French expedition Col. Shervinton and the rest of the British and American officers resigned all at once, finding it impossible to make the Malagasy Government realize the dangers that it had to face or to agree to the preparations necessary to overcome them.

When the French troops began to arrive, in the beginning of April, at Majunga they had several encounters with the Hovas, who were easily put to flight, although much superior in numbers. The Sakalavas, on the northern bank of the river Betsiboka, fled with the Hovas, who carried off the relics from the graves, from which the people would not be separated. Learning of this custom, the French took care to guard the graves on the southern bank and soon made the natives their friends. The outposts were extended up the river 40 miles, as far as Ankaboka, the head of navigation for the larger steamers drawing 10 feet of water. The Hova fort at Mahabo, 8 miles above, was captured after a fight. On April 3 Gen. Metzinger stormed the intrenched camp of Miadanc, killing 100 Hovas. The Hova fortress of Ambohimarina, near Diego Suarez, was beleaguered by the French, and at length captured after a vigorous attack. Fort Dauphin was occupied by a naval force. From the delta of the Betsiboka the Hovas were expelled and the villages of Lispisca and Betsiboka were occupied without the loss of a man. Sickness, however, decimated the French forces and filled the hospital ship "Shamrock" with patients suffering from fever and dysentery. The Hovas on the south coast killed 2 French civilians who fell into their hands. The town of Maravoay, on a tributary of the Betsiboka, was attacked on April 27 by the Algerian troops and Sakalava auxiliaries, who were repelled by a heavy fire opened upon them by the

Hovas from behind their earthworks. The Algerian troops in the night of May 2 succeeded in creeping up unobserved and captured the place by a brilliant charge, in which only 1 Frenchman was killed, while the Hova losses were 300 killed. The Hovas, numbering 2,000, fled in disorder, leaving cannon, mitrailleurs, munitions, and provisions behind. On May 6 Gen. Duchesne, commander-in-chief of the French forces, arrived at Majunga. Sakalava chiefs, after going to Antananarivo to swear allegiance to the Queen, endeavored to stop the French. The advanced guard defeated a party of them, killing 60, and also captured the Hova camp at Amboudemonte. Sakalavas enlisted on the French side and did good service in the colonial regiment of tirailleurs. They drove in all the cattle of the neighboring country, for which the French paid good prices. The Hovas, reinforced by fresh troops from the capital, attempted to make a stand, but their position was turned and they were again routed, losing 500 killed. The Hovas were badly scared by the invisible death dealt by the smokeless fire of the Algerian troops. The French advanced up the left bank of the Betsiboka toward Mevatanana. A force of 6,000 picked men was sent out to help hold that place, but the Hovas had no organization or disposition for fighting. The commanders used their power only to practice extortion upon the men. The men, who had to feed themselves, returned to their homes for fresh supplies when their rice gave out, and seldom returned. Three quarters of the troops sent to the front deserted on the march. The general who was in command at Maravoay was the first to run away. He was deposed for cowardice, but was reinstated because the general who was sent from Antananarivo to take his place turned back on hearing of fresh disasters and went off to his estate.

The Queen and the people of Antananarivo were deceived by false accounts of brilliant victories until the French drew near Mevatanana. The Hovas had neglected to place obstructions in the river, and therefore the French gunboats and river transports reached Maralolo, the head of navigation, without difficulty. Above that point a Decauville road was laid. Hova deserters, as well as Sakalavas, came into the French camp in great numbers. The Hovas occupied a strong position on the Betsiboka which the French could not force until June 6, when by means of a flanking manœuvre and mountain guns well posted they forced the Hovas to beat a retreat. On June 9 the French began to bombard Mevatanana. The Hovas attempted to resist, but, finding themselves again outflanked, evacuated the place to avoid being invested. Suberbieville, where the works of a French gold-mining company were found unimpaired, was converted into a military post. Tsaratsaotra, on the Ikopa, 12 miles above Mevatanana, was occupied on June 21. There the French sat down, the transport material not arriving to allow them to accumulate sufficient commissariat stores at their advanced base of Suberbieville to continue the advance immediately. One of the English ships bringing gunboats in sections had broken down in the Mediterranean, and afterward there were other delays. The health of the French

troops was not as bad as had been expected; the proportion of sick was 10 per cent. They were furnished with comforts by patriotic citizens at home. The volatile Hovas regained their spirit of confidence when the French ceased to advance, and were cheered by imaginative accounts of victories. On June 29 a force of 3,000 Hovas attacked the French outposts at Tsarasaotra, and were repelled. Gen. Metzinger then ordered an attack on their position, held by 10,000 men, on the Beritzoka. The French troops attacked them in front, mowing down their ranks with the fire of the Maxim guns and repeating rifles, and when they fled in terror before the pursuing cavalry on July 1, in the second battle, their retreat was cut off by a large body of black troops which had outflanked them and occupied the roads. Some escaped into the mountains, only to perish of starvation and exposure, for, according to their custom, they went into battle naked, leaving their white *lambas* in their tents, which, with all their guns, ammunition, and stores, fell into the hands of the victors. The French losses consisted of 2 killed and 15 wounded. The road was built ahead, and in August the French advanced column began its march. On Aug. 13 the French occupied Malatsy, which the Hovas evacuated at the approach of the enemy. Gen. Raimanalahy, the Hova commander-in-chief, complained that his men ran away whenever one or two were killed. They deserted to the French in ever-increasing numbers. The Hova army intrenched at Andriba was 12,000 strong. Gen. Voyron's brigade attacked Andriba on Aug. 21. The Hovas were so demoralized by the artillery fire that they abandoned their 6 fortified posts and numerous encampments without waiting to encounter the infantry. The French lost 1 Malagasy soldier. At Andriba, 150 miles from Majunga and half way to Antananarivo, Gen. Duchesne waited till he collected enough provisions and ammunition for a flying column, to be sent over the mountains to take the capital. On Sept. 15 a French column by a forced march surprised 6,000 Hovas in the Tsinainondry defile and captured their position. The flying column found the pass in the Ambohimena mountains barred by the entire Hova force and 30 guns. Delivering his attack unexpectedly on Sept. 19, Gen. Voyron completely routed the Hovas and captured Antoby. The Hovas offered a feigned resistance only in the Ankaratra mountains, which the French crossed on Sept. 23. On Sept. 27 they easily dislodged the Hovas at Lavohitra by a reconnoissance. The road, 200 kilometres in length, terminating at the entrance of the plain of Imerina, was completed before the end of August. The flying column of 5,000 men carried only enough provisions to reach Antananarivo. The deaths up to this time had numbered about 2,000, nearly equally divided between Europeans and the native troops and coolies. Scarce 50 died in battle or of wounds. About 7,000 persons were treated in hospitals, and those who succumbed were mostly French soldiers under twenty-five years of age and coolies. The older men and the Algerian troops resisted the endemic diseases or recovered quickly.

From Ambatoarana the Hovas made several futile attempts to check the invaders, but the French artillery was so well served that they did

not stand, either behind earthworks or in the open. Their last and most spirited effort was the final defense of the capital city. The French captured the city by a brilliant attack, in which they lost only 7 killed and 54 wounded, on Sept. 30, the day that Gen. Duchesne had fixed several months before.

**Terms of Peace.**—The French commander entered into negotiations with the Hova Queen on Oct. 1. The terms agreed upon provisionally were that the Queen was to continue to reign under a rigorous French control. The Hova administrative organization throughout the island would be maintained under the supervision of French officials. The Prime Minister was exiled. Gen. Metzinger was nominated Governor of Antananarivo. The native army was disarmed and replaced by French garrisons. The French assumed charge of the police and collected the customs and the taxes. The Queen of Madagascar in the treaty accepted the French protectorate, and the French Republic accepted all the consequences of such protectorate. France reserved the right to maintain military forces on the island, and the French resident general is to control the internal government of the island. The Hova Government is not allowed to contract loans without the authorization of France. The French Government assumed the financial responsibilities that Madagascar had previously incurred and promised to assist in the conversion of the loan of 1886, and also agreed to fix without delay the limits of the French territory of Diego Suarez, the uncertainty of which had led to disputes and in part caused the war.

**The Waller Case.**—John Langston Waller, formerly United States consul at Tamatave, was arrested on March 6, 1895, for sending letters out of Tamatave without submitting them to the military authorities for examination according to the regulations, and for attempting to convey information to the enemy of the movements of French troops. He was tried by court-martial on March 18 and sentenced to twenty years' imprisonment for high treason in holding a clandestine correspondence with the enemy. Mr. Waller was sent to France and confined in Clairvaux prison. The United States ambassador at Paris requested the French authorities to furnish him with a copy of the proceedings of the court-martial. Mr. Waller is a colored citizen of the United States, formerly resident in Topeka, Kan., who had obtained from the Hova Government in April, 1894, a grant of 250 square miles of rubber forest in the vicinity of Fort Dauphin. The French resident contested at the time the validity of this concession. All his rights were abrogated by his sentence. The French Government declined to furnish a record of the proceedings of the trial as a matter of right, but was willing to do so as an act of courtesy to the United States Government. A full copy was not obtained till autumn, when it was transmitted to Washington. The proceedings were found to have been regular and the evidence sufficient according to French law.

The American gunboat "Castine," which arrived at Tamatave on June 5 for the purpose of inquiring into the Waller case, omitted to salute the French flag, on the ground that the United States had never recognized the French protec-



torate. As the United States treaty with Madagascar recognized the sovereignty of the Hova Queen over the whole island, the naval regulations prescribed a salute to the Malagasy flag, and since that had been pulled down and the French flag was flying no salute was fired. When the officers and men attempted to land they were roughly ordered and pushed back by the French officials. The French naval authorities subsequently apologized for this discourtesy, explaining that the regulations required that the ship's papers should be examined before any one was permitted to come ashore.

**MAINE**, a New England State, admitted to the Union March 15, 1820; area, 33,040 square miles. The population, according to each decennial census since admission was 298,269 in 1820; 399,455 in 1830; 501,793 in 1840; 583,169 in 1850; 628,279 in 1860; 626,915 in 1870; 648,936 in 1880; and 661,086 in 1890. Capital, Augusta.

**Government.**—The following were the State officers during the year: Governor, Henry B. Cleaves; Secretary of State, Nicholas Fessenden; Treasurer, F. M. Simpson; Attorney-General, Frederick A. Powers; Superintendent of Common Schools, W. W. Stetson; Adjutant General, Selden Connor; Railroad Commissioners, Messrs. Peaks, Chadbourne, and Danforth; Fish and Game Commissioners, T. H. Wentworth, H. O. Stanley, and C. E. Oak; Land Agent, Charles E. Oak; Liquor Commissioner, P. P. Gilmore; Superintendent of Public Buildings, B. F. Harris; Labor Commissioner, S. W. Matthews; Insurance Commissioner, S. W. Carr; Registrar of Vital Statistics, A. G. Young; Librarian, L. D. Carver; Factory Inspector, R. F. Chalk; State Assessors, Otis Hayford, George Pottle, Hall C. Burleigh; Mr. Burleigh died in May, and was succeeded by W. C. Marshall; Chief Justice of the Supreme Court, John A. Peters; Associate Justices, Charles W. Walton, Andrew P. Wiswell, Lucilius A. Emery, Enoch Foster, W. P. Whitehouse, Thomas H. Haskell, and Sewall C. Strout—all Republicans except the last-named.

**Finances.**—The cash on hand at the beginning of 1895 was \$458,195.85, with receipts for the year of \$1,533,700.15, making a total of \$1,991,896. The expenditures amounted to \$1,701,655.30, leaving cash on hand Dec. 31, 1895, \$290,240.70.

The liabilities of the State are as follow: Bonded debt, \$2,353,000; trust funds held by the State on which no interest is paid, \$748,331.07. The bonded indebtedness has been reduced by \$50,000.

**Charities.**—About five years ago 100 acres of land were bought at Bangor as a site for a new hospital for the insane of the eastern part of the State. The last Legislature voted \$150,000 for buildings, and the Governor appointed a commission to visit other institutions and examine plans.

The expenditures for the insane in 1894 was \$64,975.07; for the deaf, dumb, and blind, \$11,139.97; and for the feeble minded, \$1,657.74. In 1895 the expenditures were respectively \$61,900, \$18,667, and \$2,081.

The Children's Aid Society of Maine has purchased a building and 40 acres at Belfast, and is fitting up a home for homeless girls.

**Education.**—Summer schools for teachers were held at Orono, Foxcroft, Fryeburg, Saco, Northport, and Turner Center. The attendance was 798. The course of study at Gorham and Castine Normal Schools has been extended to three years, and the buildings at all the normal schools have been improved.

New regulations have been made for examination of teachers. The State Superintendent will issue certificates after examination which will be probationary or for life, as warranted by the scholarship and skill of the candidate as shown in the schoolroom. Probationary certificates will be granted for three years, and may be renewed.

The sixty-fifth annual convention of the American Institute of Instruction was held in Portland, beginning July 8.

A class of 51 was graduated at Bowdoin in June. The Board of Trustees and Overseers voted to accept as a substitute for the Greek requirement any one of the following: 1, Three years of French; 2, three years of German; 3, two years of physics and one year of mathematics; 4, two years of chemistry and one year of mathematics.

Colby University celebrated in July its seventy-fifth anniversary, with an address by Prof. Nathaniel Butter, of Chicago University, and an ode by Rev. Samuel F. Smith. Large classes were graduated in both the men's and the women's colleges.

The State College, at Orono, opened its autumn term with 110 new students, 230 in all. About 20 were graduated in June. Advanced degrees were conferred on 6 students—mechanical engineer, 3; civil engineer, 2; master of science in chemistry, 1.

**Railroads.**—The Ashland branch of the Bangor and Aroostook road was ready for the beginning of regular train service Jan. 1, 1896. The system now comprises 306 miles, built during the past three years. The Ashland branch is 43 miles long, and gives access to the lumber region. The report for the year ending June 30, 1895, shows that the gross earnings were \$582,832.12, and the operating expenses \$381,540.63.

The report of the Maine Central for the same time, and compared with the preceding year, shows these items: Gross earnings and other items, \$4,839,761.38; operating expenses, \$3,035,172.23; total income, \$1,831,819.35; net income, \$420,889.38; surplus from operations, \$122,369.78; total surplus, June 30, \$612,669.94.

The annual report of the Portland and Rumford Falls Railroad gives the gross earnings of the road for the year as \$173,349, a gain of \$61,918. The total income was \$72,458, and the net income \$30,571, an increase of \$16,468.

The report of the Portland and Rochester road makes the gross earnings \$256,449, an increase of \$34,171. The operating expenses were \$193,201; total income, \$65,984; net income, \$58,569; a gain of \$12,784.

The Railroad Commissioners report that 117'86 additional miles of road have been built, and 7'50 discontinued.

The returns of the steam roads on June 30, 1894, showed a falling off in transportation earnings over those of 1893 of \$558,159.20. The returns to June 30, 1895, show an increase over those of 1894 of \$581,735.06.

The total mileage of street railroads is 93.89 miles. The total of transportation earnings was \$502,477.80, against \$440,026.58 in 1894.

**Vital Statistics.**—The second annual report, for the year 1893 has these items: Births, 14,604; of these 63.17 per cent. were of native parents, 18.29 of foreign, 13.75 of mixed, remainder not stated; marriages, 5,795; divorces, 627; deaths, 11,134.

**Insurance.**—A new plan has been adopted for fixing insurance rates. There will be insurance boards in the various counties; and when owners think the rating of the agents too high appeal can be taken to the board; if the board agrees with the agent, the insurer can then apply to the exchange, with headquarters in Boston.

The Maine Committee of the Insurance Exchange made report in June, recommending reductions on specially rated risks in the State, from 5 to 15 per cent., according to class. Only Bangor and Portland are in the first class—that is, having approved water supply, fire alarm, and a paid fire department. They would be entitled to the 15 per cent. reduction. A reduction of 12½ per cent. on farm property was also recommended.

In 1894 the State taxes of the insurance companies amounted to \$32,683.34. Of this amount \$14,234.04 was for fire insurance; \$17,380.63 for life; \$1,063.67 for accident.

**Farming.**—The secretary of the Board of Agriculture sums up the general crop result as follows:

In 1895 Maine produced the largest potato crop known, which has proved in some cases a source of poverty in the midst of abundance. The abundant harvests of hay, grain, and corn have given our feeders plenty of food for their animals. Our dairy animals are increasing in numbers and in average productiveness; our young stock has increased in numbers and in average value. The sheep industry, although somewhat crippled by the low price of wool, has afforded a reasonable income on the capital and labor expended.

The number of farmers' institutes held during the year was 46; cost, \$1,784.89; total attendance, 6,210.

Two bills of importance to the dairy interest were passed by the Legislature: one regulating the sale of oleomargarine, and one requiring "the testing of all articles used in connection with the Babcock test in the butter factories."

**Game and Fish Laws.**—The secretary of the Fish and Game Association reports that excellent results have been obtained from the operation of the new law in regard to fish, the supply being on the increase. Sebago Lake has been stocked with trout. The change of the close time on partridges has also been beneficial. In reference to large game the report says:

We are confronted with difficulties which it was hoped the change in the law and the increased appropriation would in a large measure overcome. I have letters from guides and others which indicate that large game were in greater numbers in our forests at the first of October than ever before, and that we have now, at the close of the season, not lost the natural increase so far as relates to deer. Caribou are more plenty, and it is a mooted question whether the moose is in as large numbers as at the close of last season.

It is estimated that 5,000 head of large game were killed in the State during the year, and that these cost the hunters (including board bills, guides, etc.) an average of \$100 apiece.

**Fisheries.**—The Labor Commissioner says: "There are enrolled in the customs districts of the State 437 vessels, which are exclusively engaged in the fisheries, and in addition there are employed in the shore fisheries more than 6,000 fishing boats with a valuation of not less than \$500,000. The sea and shore fisheries of the State give employment to upward of 10,000 people, and involve an investment in apparatus and cash capital of \$3,000,000."

**Cities and Towns.**—Lewiston celebrated its centennial, July 4, with a procession 2½ miles long, athletic sports, a contest of fire companies, and a display of fireworks. Exercises in the park consisted of an address by the Mayor, an historical address by ex-Gov. Garcelon, an oration by Senator Frye, and a prophecy by Congressman Dingley.

New Sweden celebrated its twenty-fifth anniversary, June 25. In 1870 a colony of 51 Swedes, under the lead of Hon. W. W. Thomas, Jr., sailed from Gothenburg for northern Maine and settled in what is now known as New Sweden, then an unbroken wilderness. In New Sweden to-day there are 717 Swedes, while in the adjoining township are 735 more. The colonists have erected 686 buildings, built 71 miles of road, and own live stock to the value of \$72,045.

The new bridge connecting Calais and St. Stephen was formally opened, Jan. 19, with appropriate ceremonies. This is the first free bridge over the St. Croix. It consists of two steel trusses of the Pratt type. The bridge proper is 385 feet long, 36 feet wide over all, and has a head run over the floor of 16 feet.

**Legislative Session.**—This opened Jan. 2, and closed March 27. The Senate voted to adopt the Reed rules as the standard of procedure, but the measure met with opposition in the House and was tabled.

Acts to the number of 493 were passed, and 134 resolves. The appropriations for 1895 amounted to \$1,758,406.59, and for 1896 to \$1,624,107.53. Some of these are the following:

For pensions, \$140,000; Eastern Insane Hospital, \$150,000; General Hospital, \$15,000; Eye and Ear Infirmary, \$10,000; Bangor General Hospital, \$10,000; Central General Hospital (conditionally), \$20,000; Penobscot Indians, \$16,164; Passamaquoddy Indians, \$16,080; Cattle Commission, \$10,000; State Library, \$8,000; Maine Insane Hospital, \$14,000; State College, \$40,000; Farmington Normal School, \$20,000; Reform School, \$50,500; Military and Naval Orphan Asylum, \$19,500; State Prison, \$19,000; School for the Deaf, \$16,000; Industrial School, \$14,000; Children's Aid Society, Belfast, \$3,000.

A very long petition was sent in, asking for legislation in regard to fish and game, and the enactments on that subject were among the most important work of the session, beginning early and continuing till near the close, when the resolve appropriating \$25,000 became a law. Under the new general law the Governor appoints 3 commissioners of inland fisheries and game, 1 of whom shall be the land agent, and who shall hold the office so long as he remains land agent. The other 2 shall hold their office for three years and shall



receive a salary of \$1,000 and actual traveling expenses. They shall make no decisions contrary to existing laws, but after a hearing, of which due notice has been given, may entirely prohibit the taking of any kind of game or inland fish in any part of the State for a series of years not exceeding four. The wardens shall be allowed the same fees as sheriffs for like services, and bonds to the amount of \$2,000 shall be required of them. The guide of a party that violates the fish and game laws shall be held equally responsible with other members of the party. The hunting or taking of cow or calf moose in any manner is forbidden. All fishing through the ice for trout or landlocked salmon in any of the waters of Franklin and Oxford Counties is prohibited. No person shall now kill more than 1 bull moose, 1 caribou, and 2 deer between Oct. 1 and Jan. 1 of each year. The number of pounds of trout or salmon that may be taken is 25, and not 50 as heretofore.

In reference to seashore fisheries, acts were passed defining certain duties of wardens and commissioners, and regulating the packing of sardines. From July 10 to April 19 it will be unlawful to catch or deal in lobsters less than 10½ inches long, under penalty of a fine of \$1 for each lobster.

Railroad legislation included the following measures :

Steam railroads are authorized to use electricity. When an owner of a building along the line of the railroad damaged by fire from a locomotive shall have an insurance on the building, that insurance, less premiums, etc., shall be deducted from damages to be collected from the railroad. One of the important amendments to existing legislation was that which requires the Railroad Commissioners to pass upon the question whether public convenience requires the construction of an electric railroad. The county of Washington is empowered to aid in the construction of the Washington County Railroad to an amount not exceeding \$500,000.

The laws regulating insurance are as follow :

The Insurance Commissioner may, with the consent of the court, wind up the affairs of fraternal beneficiary and assessment corporations. Investigation must now be made as to the causes of all fires by municipal officers within six days after such fires, and a copy of the clerk's record shall be transmitted to the Insurance Commissioner semiannually. The Insurance Commissioner may appoint brokers who, if unable to place certain kinds of insurance in any companies authorized to do business in the State, may insure the same in companies not authorized to do business in Maine. The anticompact insurance law and the one prohibiting coinsurance have been repealed. The Insurance Commissioner has been authorized to compile and publish 2,000 copies of the insurance and fraternal beneficiary laws of the State. In towns or cities of more than 2,000 inhabitants the municipal officers shall appoint an inspector of buildings skilled in the construction of buildings, and shall define the limits of his jurisdiction over the construction of buildings to see that proper safeguards against fire are used.

By an amendment a lien to secure payment of tax upon real estate shall take precedence of all other claims. If such tax remains unpaid on the first Monday in December of the year succeeding that in which said tax was assessed the property shall be sold.

One of the important acts is that relating to the taxation of sailing-vessel property. The

new law provides for a valuation of \$20 on new vessels. The valuation is to be reduced \$1 a ton for each year of the vessel's age up to the seventeenth year, when the valuation shall be fixed at \$3 a ton.

Appeals from the assessors to the Supreme Court have been authorized.

A law has been passed requiring the State assessors to make lists of lands in unincorporated places.

Under the medical registration act, not more than 2 of the board of 6 shall be members of any one school of medicine; the section providing that unregistered practitioners could not collect their pay was stricken out.

Some defects in the collateral-inheritance law have been amended. Charitable bequests are now exempted from its provisions.

Thirty days' imprisonment or fine not exceeding \$100 are the penalties prescribed for selling stale eggs as fresh. Adulteration or imitation of maple sirup or sugar has been prohibited. A fine not more than \$100 and not less than \$50 is the penalty for the adulteration of candy or for the sale of brandy, whisky, rum, or wine drops. Oleomargarine may be sold if colored some other than yellow or butter color.

The law protecting innkeepers was made to apply to keepers of boarding houses, and the penalty for defrauding them was doubled.

A general law was passed for the organization of telegraph and telephone companies, under which they are to have the right of eminent domain. Corporations by majority vote of stock may diminish their capital stock, giving notice within ten days to the Secretary of State. The game of policy is made subject to the same prohibition as lotteries.

Veterans of the late war not on the quota of Maine, but who were residents of the State at date of enlistment and at time of application had been residents for five years, and are in need, shall receive State pensions.

The law relating to real-estate titles has been so amended as to include a provision whereby one who has been in uninterrupted possession of real property for ten years may file a petition in the Supreme Court, setting forth the estate, stating the source of the title, describing the premises, and averring that apprehension exists that certain persons, named or unknown, claim a title conflicting with his, and praying that such persons be summoned to show cause why they should not bring action to establish their title.

Three new towns were set off—Winter Harbor from Gouldsboro, Sorrento from Sullivan, and South Portland from Cape Elizabeth. City charters were granted to Dexter and South Portland.

The new law gives absolute ownership to widow or widower in one third the real estate, excepting wild lands. Mothers are to have joint custody of minor children.

Cities or towns with more than 10,000 inhabitants may receive State stipend on \$1,000 appropriated for free public libraries, instead of on \$500 as formerly, and the State stipend is 10 per cent. of the amount expended by the town "for the use and benefit of such public library and for the running expenses thereof."

Among the commissions to be appointed by the Governor is that for securing uniformity of legislation with other States in respect to divorce, insolvency, and probate laws, also those relating to descent and distribution of property.

The law relating to recognizances for debt was repealed.

An attachment of real estate expires in five years after date of filing, unless brought forward at the request of the plaintiff or his attorney.

A law affecting installment sales provides that no agreement whereby the property shall become that of the buyer till it is paid for shall be valid unless recorded in the city clerk's office.

Vessels of 5 tons or less on inland waters are now exempt from fees for inspection or license.

The State has allowed savings banks to require ninety days' notice for the withdrawal of deposits, and in turn has provided that these banks shall not invest in street railways, excepting those already built in Maine, unless there is paid in on the stock  $33\frac{1}{3}$  per cent. of the amount of bonds.

The laws on liens were amended; the claimant has forty instead of thirty days in which to file his statement.

Changes were made in the law governing the sale of liquors. Among the important features added is the requirement for an assay of the liquors.

**MANITOBA**, a western province of the Dominion of Canada.

**Legislation.**—The third session of the eighth Legislature was opened at Winnipeg on Feb. 14, 1895, by the Lieutenant Governor, Sir John Christian Schultz, with a speech from the throne, which contained these passages:

It appears that during the past year unusually large shipments of stock have been made out of the province—an encouraging indication that our farmers are no longer wholly relying upon the production of wheat.

A substantial increase in the provincial subsidy has been obtained from the Dominion authorities.

By the judgment of the Judicial Committee of the Privy Council, recently pronounced on an appeal from the Supreme Court of Canada, it has been held that an appeal lies to the Governor General in Council in behalf of the minority of this province, inasmuch as certain rights or privileges given by prior provincial legislation to the minority in educational matters had been affected by the public-schools act of 1890, and that therefore the Governor General in Council has power to make remedial orders in respect thereto. It is not the intention of my Government in any way to recede from its determination to uphold the present public-school system.

It has been determined by the Department of Education to introduce a carefully prepared course of study in agriculture into the public schools, and during the past year a considerable amount of preparatory work has been accomplished.

Finlay M. Young was elected Speaker. The principal bills passed were the following:

Respecting corporations incorporated outside of Manitoba.

Respecting humane societies.

To amend the public-schools act.

To make further provision respecting mortgages of real estate.

To amend the Manitoba insurance act.

To amend the act respecting life assurance for the benefit of wives and children.

For prevention of fraudulent statements by companies and others.

Respecting aid to creameries and cheese factories.

To incorporate the Red River Valley Colonization Land Company.

A special meeting of the Legislature was called on May 9, primarily to deal with the school question. It was prorogued on June 28, after passing the following measures, among others:

To amend the municipal boundaries act.

Respecting municipal hail insurance.

To make further provision respecting the liens of laborers and mechanics.

To incorporate the Canadian Live Stock and Fire Insurance Company.

To enable the Government of Manitoba to loan a limited amount of money to the rural municipality of Gimli.

The most important subject of discussion during the two sessions of the Legislature in 1895 was the school question. The Manitoba legislative acts of May, 1890, with reference to the public schools of the province, abolished the system which permitted separate Protestant and Catholic sections of the School Board, and ordered the arrangement of all the school districts, both Protestant and Catholic, under one scheme of free and nonsectarian schools, to be sustained by the collection of a public-school rate. Any school refusing or neglecting to work under the new law was not to be allowed the privilege of enjoying a share of the grants or allotments. The Imperial Privy Council having decided that, while the Manitoba act of 1890 was constitutional, it yet remained with the Dominion Government to see that the rights of the Roman Catholic minority were respected and guarded, the question at once became a Federal one. The Ottawa ministry, sitting as a court of final appeal, heard the complaints and the defense, and finally issued a remedial order or instruction to the Manitoba Government to restore the privileges taken from the Catholics by the abolition of their separate schools in 1890. This decision was made by the Governor General in Council, on March 18, declaring that the rights and privileges enjoyed by the Catholic minority in Manitoba prior to the provincial acts of 1890 were prejudicially affected by those acts, and requesting legislation that should repeal the existing law, in order that the wrongs complained of by the Catholics might be removed. This the provincial Government flatly refused to do, and were supported in their opposition by a large majority of the Assembly, and apparently of the people of Manitoba. It was pointed out that the difficulty of maintaining separate schools in a large and scattered country like Manitoba practically amounted to an impossibility. The decision of the Government created two distinct issues—one between Catholics and Protestants, the other between the provincial and Dominion Legislatures. The situation was awkward. The Minister of Justice for the Dominion, Sir C. H. Tupper, considered the emergency so serious that he resigned in order to bring about a dissolution, this, in his view, being the only constitutional course open to him. His resignation was tendered on March 26, but three days later he was prevailed upon to remain in office. Matters now await the legislation that is



pledged by the Dominion Government at the January session of the Federal Parliament.

On March 3 Attorney-General Sifton carried a resolution abolishing the provincial expenditure upon the maintenance of a residence for the Lieutenant Governor. This leaves that official dependent upon the \$10,000 salary paid to the lieutenant governor of each province by the Federal authorities under the terms of the act of union. A few months later, the Hon. J. C. Patterson, formerly Minister of Militia at Ottawa, succeeded Sir John Schultz as Lieutenant Governor.

On April 8 a judgment was rendered in the Supreme Court of Manitoba which sustained in a local case the contention that provincial legislatures have not the power to prohibit, either directly or through the municipalities, the sale of intoxicating liquors. This decision did away with local-option laws in 10 municipalities.

**Finances.**—For the year ending Dec. 31, 1894, the chief items of receipts were as follow: Annual subsidy from Dominion, \$418,267.31; interest on school lands, \$10,465.21; county court fees, \$10,205.85; law stamps, \$11,926.50; land titles, \$42,402.19; liquor licenses, \$26,111.60; interest, \$40,895.71; support of lunatics, \$26,654.19; insurance act fees, \$7,891; official administration, \$10,958.61; municipal sinking fund, \$13,344.79; central judicial district, \$31,290.40; municipal debentures (1890), \$9,588.84; loans to municipalities (1894), \$8,934.91; Manitoba and Northwestern Railway Company debenture account, \$14,647.43; Manitoba Southwestern Colonization Railway debt and interest account, \$49,402.51; provincial debentures, \$202,619.83; Court of Queen's Bench, \$26,539.17; balance brought forward from 1893, \$574,458.06; miscellaneous, \$47,839.34; total, \$1,584,443.45. The chief expenditures were as follow: Legislation, \$40,400.43; Treasury Department, chiefly interest on debentures, \$152,065.33; provincial Secretary's department, \$7,911.84; public schools, \$119,997.12; Manitoba University, \$3,500; agriculture and immigration, \$74,680.72; Attorney-General's department, \$127,580.13; Railway Commissioner's department, \$6,887.70; public works, \$177,573.08; treasury loans, etc., \$107,020.19; interest on railway bonds, \$101,263.00; miscellaneous, \$56,633.98; cash on hand, \$608,929.84; total, \$1,584,443.45. The outstanding debentures of the province at the end of 1894 included \$787,426 issued in 1885 for aiding the Manitoba and Northwestern Railway Company; \$899,846 in 1885 for aid to the Manitoba Southwestern Colonization Railway Company; \$255,986 in 1886 to aid the Hudson's Bay Railway and Steamship Company; \$1,498,933 in 1888 for general purposes; and \$997,666 issued in 1893, also for purposes of public expenditure.

**Agricultural.**—The crops of 1895 were unprecedented. The comparative areas in acres may be seen from the following table:

CROPS.	1894.	1895.
Wheat .....	1,010,186	1,140,276
Oats .....	413,636	482,658
Barley .....	119,528	153,839
Flax .....	30,500	82,668
Potatoes .....	13,300	16,716
Roots .....	7,890	6,635

The estimated production for 1895, from reports received from all parts of the province, includes 33,843,392 bushels of wheat, or 29.68 bushels to the acre; 5,993,567 bushels of barley, or 38.96 to the acre; 25,855,989 bushels of oats, or 38.96 to the acre.

The development of the dairy interest has been noticeable, more than 20 new cheese and butter factories having been established during the season. According to the statements contained in bulletin that was issued by the Department of Agriculture in June, 1895, 6,842 men were employed as farm help, at wages averaging \$16.50 for the summer months and \$10.50 for those hired by the year.

**Education.**—The school population in 1894 was 36,459, compared with 14,129 in 1884. The number of pupils was 32,680, and the average attendance 16,260. The teachers numbered 1,047; the schools in operation were 884; the average salary of teachers was \$410, as against \$433.50 ten years before. The legislative grant to the schools was \$101,013.46, and the school taxes, raised from the municipalities, amounted to \$354,963. Before the abolition of separate schools (or their Government maintenance) in 1890, there were 91 Catholic and French school districts. For various reasons 24 of these have since disbanded and 27 have accepted the public-school system. Nine newly formed districts, where the French and English populations are about equal in numbers, have also accepted what is called the "national" system. Convent schools are still in operation in 9 centers, and 38 other schools in various parts of the province are conducted as separate schools and maintained by voluntary subscriptions.

**Industries and Trade.**—At the time of the last census (1891) there were 1,031 industrial establishments in the province, with a working capital of \$2,561,836, employing 4,403 persons at wages aggregating \$1,905,981. The yearly product was valued at \$10,155,182. The imports of the province in 1894 amounted to \$2,392,222, and the duty collected to \$602,466. Up to June, 1895, the export of cattle for the year was placed at 30,000 head; the export of hogs, at 10,000; and the export of sheep, at 4,000; while the total value of the dairy products exported was estimated at \$500,000.

**Keewatin.**—This large district, of 282,000 square miles, is still under the jurisdiction of the Lieutenant Governor of Manitoba. The principal occupation of its scattered inhabitants—who are mainly Indians—is hunting and fishing. In his annual report for 1894, Sir John Schultz urges the Dominion Government to take steps for the protection of the rich whaling grounds to the north, and suggests restrictive measures against the use of the bomb, lance, and swivel guns by foreign whaleboats. He also protests vigorously against American vessels which have "traded with the Eskimos on our arctic coast carrying on a barter with the articles upon which no duties have been paid, and furnishing as matters of trade or reward for inland trading expeditions magazine rifles, fixed ammunition and intoxicants, thus violating the laws of Canada and defrauding her revenue." He then refers to the value of the trade thus controlled from San Francisco.

# MANUFACTURES IN THE UNITED STATES.

Under the general heading UNITED STATES in the last issue of the "Annual" is included a tabular exhibit of census results concerning manufactures. The table gives many important facts relating to the development of industries in 165 cities, showing, opposite each name, for 1880 and 1890, the aggregate number of manufacturing establishments, total amount of capital invested, total number of hands employed, and aggregate of wages paid. The last two columns contain the total cost of material used in each city, 1890, and value of products or goods manufactured in the same year.

The following exhibit shows in detail, alphabetically, by industries, the capital invested, cost of materials used, and value of products (goods manufactured), 1890, including receipts from custom work and repairing, in 165 cities, whenever the amount used in any city for any given industry exceeds \$200,000.

The total given for each city under the heading "Capital" includes both hired property and direct investment, because the aggregate thus made represents truly "all the property strictly pertaining to a manufacturing business."

The industries included in the compendium report for 1890, but not in any previous census returns, were bottling; cars and general shop construction and repairs by steam railroad companies; china, decorating; clothing, women's, dressmaking; coffins and burial cases, trimming and finishing; cotton, cleaning and rehandling; cotton ginning; cotton waste; drug grinding; druggists' preparations, not including prescriptions; gas, illuminating and heating; hay and straw, baling; millinery, custom work; petroleum, refining.

Some of these industries do not reach \$200,000, and will not therefore be found in the tables.

Each industry having 3 or more establishments in any city is given a separate heading. Those industries in which less than 3 establishments were engaged are grouped under, "All Other Industries," in order that the operations of individual establishments may not be disclosed. Industrial operations of the municipal governments of cities, also the manufacturing operations of penal, reformatory, and charitable institutions, are not included in the Compendium, because such enterprises are conducted under conditions "essentially different from those which prevail in the case of individual or private corporations."

CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
<b>Agricultural Imple-</b>			
<b>ments.</b>			
Akron, Ohio.....	\$6,115,947	\$960,005	\$2,288,000
Albany, N. Y.....	263,741	155,746	382,263
Auburn, N. Y.....	6,465,143	762,580	3,615,572
Canton, Ohio.....	4,725,851	630,903	2,002,896
Chicago, Ill.....	23,521,543	4,993,877	11,883,976
Columbus, Ohio.....	697,504	116,879	254,764
Dayton, Ohio.....	1,868,414	473,470	1,352,150
Evansville, Ind.....	315,316	91,281	257,445
Louisville, Ky.....	1,256,275	435,200	1,053,399
Milwaukee, Wis.....	1,568,431	212,332	596,873
Minneapolis, Minn.....	1,889,347	169,787	687,300
Norfolk, Va.....	303,535	133,096	281,750
Peoria, Ill.....	967,866	212,656	519,611
Philadelphia, Pa.....	717,930	173,734	512,518
Quincy, Ill.....	263,945	126,035	282,725
Racine, Wis.....	5,647,867	770,997	1,979,613

CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
Richmond, Va.....	\$267,200	\$31,450	\$222,670
Rockford, Ill.....	1,459,648	299,492	776,862
St. Louis, Mo.....	806,434	337,578	1,027,455
South Bend, Ind.....	1,920,403	1,175,392	2,423,442
Springfield, Ohio.....	10,165,091	2,282,528	5,221,008
Syracuse, N. Y.....	556,623	142,538	323,478
York, Pa.....	534,700	276,733	463,846
<b>Artificial Feathers and Flowers.</b>			
New York, N. Y.....	5,420,927	4,153,243	7,953,065
Philadelphia, Pa.....	349,997	283,856	619,485
<b>Artists' Materials.</b>			
New York, N. Y.....	277,625	68,898	183,100
<b>Awnings, Tents, and Sails.</b>			
Boston, Mass.....	278,592	209,826	428,134
Chicago, Ill.....	419,813	415,766	720,622
New York, N. Y.....	855,077	717,698	1,486,016
Philadelphia, Pa.....	255,112	229,705	460,446
Portland, Ore.....	537,283	369,035	458,053
Providence, R. I.....		32,486	67,810
St. Louis, Mo.....	474,075	353,321	602,330
<b>Axle Grease.</b>			
San Francisco, Cal.....	325,050	634,419	763,650
<b>Babbitt Metal and Solder.</b>			
Philadelphia, Pa.....	261,524	558,898	679,054
St. Louis, Mo.....	350,000	966,349	1,120,650
<b>Bags, other than Paper.</b>			
Chicago, Ill.....	394,193	671,990	825,006
New Orleans, La.....	231,600	579,175	667,945
New York, N. Y.....	609,704	1,704,918	2,076,225
Philadelphia, Pa.....	1,444,350	2,303,950	3,241,230
St. Louis, Mo.....	259,705	303,480	431,228
San Francisco, Cal.....	325,050	634,419	763,650
<b>Bags, Paper.</b>			
New York, N. Y.....	313,233	211,883	372,960
Philadelphia, Pa.....	206,375	171,141	272,800
St. Louis, Mo.....	259,305	308,480	431,228
<b>Bakery Products.</b>			
Albany, N. Y.....	434,822	429,743	753,133
Allegheny, Pa.....	500,951	404,870	647,965
Atlanta, Ga.....	212,840	270,424	423,285
Baltimore, Md.....	1,463,990	2,013,545	3,394,575
Boston, Mass.....	2,345,343	1,965,476	3,455,338
Bridgeport, Conn.....	263,397	309,978	509,691
Brooklyn, N. Y.....	4,897,125	5,210,208	9,331,523
Buffalo, N. Y.....	1,159,401	1,111,017	1,975,714
Cambridge, Mass.....	541,068	741,326	1,417,140
Charleston, S. C.....	416,322	260,603	467,944
Chicago, Ill.....	4,052,423	3,852,951	6,816,738
Cincinnati, Ohio.....	2,452,135	1,564,021	3,163,490
Cleveland, Ohio.....	453,656	611,625	1,171,316
Columbus, Ohio.....	267,423	290,965	482,412
Denver, Col.....	535,643	539,719	966,206
Detroit, Mich.....	708,867	887,393	1,406,524
Grand Rapids, Mich.....	231,567	253,829	422,910
Hoboken, N. J.....	231,345	341,963	547,640
Indianapolis, Ind.....	352,132	432,368	670,812
Jersey City, N. J.....	555,502	416,156	698,699
Kansas City, Mo.....	412,130	676,527	1,110,993
Los Angeles, Cal.....	264,321	196,375	388,904
Louisville, Ky.....	566,239	628,371	1,062,553
Lynn, Mass.....	224,710	170,174	357,311
Milwaukee, Wis.....	972,098	955,994	1,576,127
Minneapolis, Minn.....	293,662	296,795	564,891
Newark, N. J.....	1,013,427	1,116,515	1,905,224
New Haven, Conn.....	320,716	465,062	750,320
New Orleans, La.....	1,110,263	1,273,055	2,114,146
New York, N. Y.....	9,432,395	8,530,429	15,004,542
Omaha, Neb.....	437,250	392,811	689,410
Paterson, N. J.....	273,724	223,704	349,462
Peoria, Ill.....	217,066	151,880	293,598
Philadelphia, Pa.....	7,321,325	5,983,433	10,778,592
Pittsburg, Pa.....	923,393	652,409	1,142,921
Portland, Me.....	224,890	279,877	422,099
Poughkeepsie, N. Y.....	216,745	173,119	297,220
Providence, R. I.....	459,441	521,593	883,148
Reading, Pa.....	216,539	165,391	314,615
Richmond, Va.....	200,907	189,357	328,169
Rochester, N. Y.....	514,763	424,534	756,577
St. Louis, Mo.....	2,194,713	2,173,432	3,597,392
St. Paul, Minn.....	504,526	285,035	618,674



## MANUFACTURES IN THE UNITED STATES.

441

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
San Francisco, Cal.....	\$1,956,714	\$1,608,378	\$3,032,273	<b>Boot and Shoe Cut Stock.</b>			
Syracuse, N. Y.....	240,641	368,551	623,348	Chicago, Ill.....	\$217,700	\$579,805	\$745,224
Trenton, N. J.....	442,067	306,214	656,783	Haverhill, Mass.....	1,475,325	3,016,532	3,722,848
Washington, D. C.....	765,219	802,072	1,409,575	Lynn, Mass.....	2,155,186	4,907,741	5,971,787
Wilmington, Del.....	332,505	179,409	329,850	Salem, Mass.....	216,054	244,767	442,859
<b>Baking and Yeast Pow- ders.</b>				Worcester, Mass.....	261,455	419,579	550,332
Boston, Mass.....	324,505	348,055	451,387	<b>Boot and Shoe Findings.</b>			
Chicago, Ill.....	1,303,150	1,706,204	2,767,840	Boston, Mass.....	533,707	521,053	816,861
New York, N. Y.....	219,550	366,939	591,240	Brockton, Mass.....	227,418	221,074	371,942
St. Louis, Mo.....	472,981	201,408	403,772	New York, N. Y.....	216,990	181,954	309,000
St. Paul, Minn.....	408,290	230,688	373,460	<b>Boot and Shoe Uppers.</b>			
<b>Baskets and Rattan and Willow Ware.</b>				New York, N. Y.....	629,682	359,038	692,151
Brooklyn, N. Y.....	225,267	77,704	226,504	Philadelphia, Pa.....	236,363	130,444	273,375
New York, N. Y.....	256,642	159,175	446,600	<b>Boots and Shoes, factory products.</b>			
<b>Belting and Hose, Leather.</b>				Albany, N. Y.....	424,969	339,405	620,692
Boston, Mass.....	208,259	172,693	280,379	Allentown, Pa.....	434,138	253,847	488,679
Brooklyn, N. Y.....	886,013	691,163	861,994	Baltimore, Md.....	985,850	716,852	1,519,261
Chicago, Ill.....	499,000	365,340	540,500	Binghamton, N. Y.....	773,474	917,362	1,330,856
New York, N. Y.....	1,399,525	1,531,247	2,216,714	Boston, Mass.....	898,773	870,190	1,508,697
Philadelphia, Pa.....	317,096	185,380	279,027	Brooklyn, N. Y.....	1,060,584	1,240,406	2,489,885
San Francisco, Cal.....	211,413	101,491	170,768	Buffalo, N. Y.....	607,191	444,185	876,116
Worcester, Mass.....	500,563	649,972	757,633	Camden, N. J.....	253,436	503,927	981,652
<b>Belting and Hose, Rub- ber.</b>				Chicago, Ill.....	3,664,989	3,977,429	7,257,084
Trenton, N. J.....	1,283,574	786,245	1,162,709	Cincinnati, Ohio.....	2,457,539	3,151,004	6,024,454
<b>Bicycle and Tricycle repairing.</b>				Columbus, Ohio.....	223,919	217,500	359,000
Chicago, Ill.....	738,500	246,256	820,000	Detroit, Mich.....	975,907	915,292	1,611,700
<b>Billiard Tables and Ma- terials.</b>				Haverhill, Mass.....	6,369,250	7,989,238	16,137,352
Chicago, Ill.....	844,640	673,915	1,296,000	Louisville, Ky.....	240,856	140,836	341,637
New York, N. Y.....	367,595	210,425	377,800	Lynn, Mass.....	8,364,766	10,131,612	20,190,695
<b>Blacking.</b>				Milwaukee, Wis.....	1,909,255	820,170	1,617,534
Boston, Mass.....	203,441	237,564	399,511	Newark, N. J.....	1,215,083	912,595	2,266,789
New York, N. Y.....	517,902	446,793	872,838	New Orleans, La.....	384,994	412,497	968,017
Philadelphia, Pa.....	589,347	364,326	743,002	New York, N. Y.....	3,394,487	2,473,015	5,306,411
<b>Blacksmithing and Wheelwrighting.</b>				Philadelphia, Pa.....	4,185,794	3,159,934	6,851,834
Baltimore, Md.....	526,847	182,941	704,134	Portland, Me.....	458,773	594,157	1,049,280
Boston, Mass.....	1,207,386	239,663	1,213,991	Richmond, Va.....	390,461	733,202	1,071,680
Brooklyn, N. Y.....	813,530	302,876	1,155,237	Rochester, N. Y.....	3,734,025	3,469,823	6,489,382
Buffalo, N. Y.....	509,759	132,130	442,147	St. Louis, Mo.....	4,170,027	2,114,017	4,250,960
Chicago, Ill.....	2,037,357	462,495	2,057,962	Salem, Mass.....	398,316	634,871	1,178,724
Cincinnati, Ohio.....	503,032	171,900	690,422	San Francisco, Cal.....	2,425,617	1,487,372	3,315,043
Cleveland, Ohio.....	234,483	62,577	288,703	Syracuse, N. Y.....	332,757	328,725	710,994
Denver, Col.....	312,190	121,671	407,889	Worcester, Mass.....	1,777,288	1,709,979	2,923,645
Detroit, Mich.....	239,724	63,091	301,211	<b>Boots and Shoes, custom work and repairing.</b>			
Kansas City, Mo.....	242,393	76,814	321,353	Baltimore, Md.....	1,163,102	420,030	1,425,530
Milwaukee, Wis.....	272,013	72,780	259,334	Boston, Mass.....	1,027,518	205,430	800,523
Minneapolis, Minn.....	303,575	72,914	307,208	Brooklyn, N. Y.....	2,129,776	551,828	2,008,630
Newark, N. J.....	251,604	71,977	315,215	Buffalo, N. Y.....	630,462	151,571	469,855
New Orleans, La.....	210,555	71,325	309,821	Chicago, Ill.....	2,143,979	407,067	1,514,604
New York, N. Y.....	2,981,431	722,936	3,054,341	Cincinnati, Ohio.....	1,550,154	329,397	1,269,060
Omaha, Neb.....	291,381	59,833	339,475	Covington, Ky.....	355,142	143,238	395,090
Philadelphia, Pa.....	1,452,205	485,529	1,819,502	Denver, Col.....	330,005	89,505	327,271
Pittsburg, Pa.....	269,902	58,368	293,026	Detroit, Mich.....	267,823	56,437	188,743
Providence, R. I.....	228,134	63,541	237,043	Louisville, Ky.....	301,790	90,253	281,280
Rochester, N. Y.....	246,699	53,305	247,246	Milwaukee, Wis.....	280,503	76,162	264,057
St. Louis, Mo.....	786,096	224,572	898,177	Newark, N. J.....	230,398	54,446	204,829
St. Paul, Minn.....	234,176	56,533	238,882	New Orleans, La.....	503,189	185,705	556,207
San Francisco, Cal.....	591,722	144,285	595,481	New York, N. Y.....	7,929,177	1,812,252	6,404,036
Washington, D. C.....	424,662	131,912	472,200	Philadelphia, Pa.....	3,208,560	818,410	2,747,403
<b>Bone, Ivory, and Lamp- black.</b>				Providence, R. I.....	201,553	57,358	182,493
Philadelphia, Pa.....	671,800	146,120	406,000	Rochester, N. Y.....	241,169	56,740	173,308
<b>Bookbinding.</b>				St. Louis, Mo.....	905,761	161,307	675,732
Boston, Mass.....	1,586,299	315,119	1,213,320	San Francisco, Cal.....	634,687	142,104	527,366
Brooklyn, N. Y.....	1,251,062	606,492	1,317,700	Trenton, N. J.....	267,794	61,298	174,386
Chicago, Ill.....	1,629,080	535,116	1,463,652	Washington, D. C.....	409,239	101,992	357,581
Detroit, Mich.....	292,720	131,799	256,683	<b>Bottling.</b>			
Holyoke, Mass.....	443,218	236,303	449,966	Boston, Mass.....	974,119	1,242,322	2,029,017
New York, N. Y.....	5,006,436	1,973,657	5,333,887	Cincinnati, Ohio.....	406,245	238,146	462,824
Philadelphia, Pa.....	1,990,549	774,695	2,025,793	New York, N. Y.....	379,280	398,265	687,141
St. Louis, Mo.....	311,918	108,028	336,227	Philadelphia, Pa.....	1,296,586	1,559,612	2,585,598
San Francisco, Cal.....	278,414	77,555	292,249	St. Louis, Mo.....	258,445	151,853	277,006
				Washington, D. C.....	223,507	537,297	850,719
				<b>Boxes, Cigar.</b>			
				Cincinnati, Ohio.....	283,641	194,570	389,795
				New York, N. Y.....	1,665,915	1,149,741	2,291,764
				Philadelphia, Pa.....	314,205	262,433	583,573
				<b>Boxes, Fancy and Pa- per.</b>			
				Baltimore, Md.....	233,508	116,646	280,100
				Boston, Mass.....	465,979	237,705	605,984
				Brooklyn, N. Y.....	1,524,381	728,373	1,618,832
				Chicago, Ill.....	820,994	420,940	946,663
				Haverhill, Mass.....	239,434	182,057	374,593

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Jersey City, N. J.....	\$231,621	\$127,436	\$369,250	Pittsburg, Pa.....	\$2,101,748	\$1,618,066	\$2,479,998
Lynn, Mass.....	207,294	123,891	260,177	Portland, Ore.....	529,450	444,670	965,000
Newark, N. J.....	319,380	109,894	265,217	San Francisco, Cal.....	217,155	233,118	434,367
New Haven, Conn.....	281,910	126,962	313,000	<b>Bronze Castings.</b>			
New York, N. Y.....	3,299,532	1,640,815	4,509,357	New York, N. Y.....	306,100	72,537	291,500
Philadelphia, Pa.....	1,627,457	739,843	1,762,350	<b>Brooms and Brushes.</b>			
St. Louis, Mo.....	222,975	363,163	624,520	Baltimore, Md.....	317,137	312,561	572,896
Troy, N. Y.....	231,578	97,344	237,072	Boston, Mass.....	906,388	624,939	1,086,741
<b>Boxes, Packing.</b>				Brooklyn, N. Y.....	373,649	261,662	570,938
Baltimore, Md.....	461,883	466,222	894,226	Chicago, Ill.....	587,906	360,956	713,423
Bay City, Mich.....	227,481	238,052	350,161	Cincinnati, Ohio.....	374,792	223,011	518,390
Brooklyn, N. Y.....	926,150	924,735	1,460,500	New York, N. Y.....	1,423,299	355,962	1,783,151
Cambridge, Mass.....	214,952	119,042	290,897	Philadelphia, Pa.....	1,011,001	162,330	1,009,238
Chicago, Ill.....	1,522,655	1,590,980	2,835,830	St. Louis, Mo.....	306,131	146,676	343,305
Milwaukee, Wis.....	331,027	227,907	441,186	<b>Buttons.</b>			
New York, N. Y.....	2,022,260	1,715,646	3,084,300	Boston, Mass.....	229,200	108,655	236,000
Philadelphia, Pa.....	798,749	744,307	1,248,566	Newark, N. J.....	386,955	199,043	549,100
St. Louis, Mo.....	692,655	595,931	1,172,859	New York, N. Y.....	574,655	128,577	577,800
San Francisco, Cal.....	643,209	483,645	1,039,260	Philadelphia, Pa.....	355,356	143,678	386,719
<b>Brass Casting and Brass Finishing.</b>				Providence, R. I.....		46,978	131,557
Baltimore, Md.....	1,689,423	785,945	1,903,850	Waterbury, Conn.....	677,210	279,637	655,190
Boston, Mass.....	1,062,617	346,295	977,893	<b>Cardboard.</b>			
Buffalo, N. Y.....	350,422	66,082	192,704	New York, N. Y.....	354,000	356,050	570,000
Chicago, Ill.....	739,081	707,425	1,409,023	<b>Carpentering.</b>			
Cincinnati, Ohio.....	959,211	426,379	1,090,631	Akron, Ohio.....	243,308	308,182	542,329
Dayton, Ohio.....	296,376	69,765	221,100	Albany, N. Y.....	386,313	482,790	1,185,171
Detroit, Mich.....	830,900	347,505	367,733	Allegheny, Pa.....	429,969	677,464	1,332,072
Milwaukee, Wis.....	362,042	227,195	370,451	Baltimore, Md.....	734,110	997,172	2,420,309
New Haven, Conn.....	647,430	162,311	543,694	Binghamton, N. Y.....	202,212	371,534	780,067
New York, N. Y.....	1,356,555	311,940	1,196,527	Boston, Mass.....	3,642,843	3,945,894	8,787,674
Philadelphia, Pa.....	1,727,767	1,435,024	2,512,336	Bridgeport, Conn.....	498,169	779,820	1,591,433
St. Louis, Mo.....	406,640	332,938	643,436	Brockton, Mass.....	231,611	365,117	720,499
San Francisco, Cal.....	230,656	157,298	293,074	Brooklyn, N. Y.....	3,844,131	3,607,910	8,239,652
Springfield, Mass.....	215,235	112,400	250,000	Buffalo, N. Y.....	1,219,417	2,144,747	4,197,777
Waterbury, Conn.....	4,204,850	1,887,328	3,726,625	Cambridge, Mass.....	592,355	733,223	1,580,500
<b>Brassware.</b>				Camden, N. J.....	511,068	840,723	1,493,441
Brooklyn, N. Y.....	404,155	153,734	411,369	Charleston, S. C.....	339,177	600,835	980,594
Meriden, Conn.....	2,548,732	741,471	2,214,766	Chicago, Ill.....	3,912,976	6,335,605	12,751,063
Newark, N. J.....	402,795	311,332	606,600	Cincinnati, Ohio.....	2,037,066	3,110,396	6,557,222
Philadelphia, Pa.....	335,965	140,056	378,555	Cleveland, Ohio.....	926,664	2,126,509	4,319,114
Waterbury, Conn.....	3,989,994	2,133,945	4,242,469	Covington, Ky.....	913,010	2,186,970	3,927,740
<b>Brick and Tile.</b>				Davenport, Iowa.....	406,773	344,633	779,793
Akron, Ohio.....	262,785	43,939	216,960	Denver, Col.....	622,320	394,093	1,070,026
Albany, N. Y.....	452,726	40,313	252,149	Detroit, Mich.....	731,223	830,568	1,736,373
Allentown, Pa.....	210,269	22,055	103,510	Duluth, Minn.....	306,405	561,022	913,364
Baltimore, Md.....	2,410,789	146,407	1,055,503	Fort Worth, Texas.....	400,341	631,912	1,257,044
Buffalo, N. Y.....	751,433	57,447	330,076	Hartford, Conn.....	697,279	632,914	1,301,545
Cambridge, Mass.....	694,339	159,180	439,300	Hoboken, N. J.....	262,735	290,212	554,560
Canton, Ohio.....	249,140	33,410	167,045	Indianapolis, Ind.....	339,641	591,078	1,580,440
Chicago, Ill.....	3,944,599	365,233	2,231,316	Jersey City, N. J.....	238,453	445,201	837,571
Cincinnati, Ohio.....	630,574	87,356	559,455	Johnstown, Pa.....	291,133	251,465	543,532
Cleveland, Ohio.....	313,305	86,328	379,600	Kansas City, Kan.....	274,785	313,900	536,736
Columbus, Ohio.....	201,225	30,319	199,307	Kansas City, Mo.....	613,243	2,136,107	3,933,589
Dallas, Texas.....	223,439	56,430	218,350	Lawrence, Mass.....	220,366	245,349	542,513
Denver, Col.....	1,633,437	165,337	1,033,400	Los Angeles, Cal.....	266,326	405,735	924,200
Harrisburg, Pa.....	204,360	20,730	131,430	Louisville, Ky.....	274,503	501,317	1,161,400
Kansas City, Mo.....	1,329,910	143,130	728,437	Lowell, Mass.....	203,552	597,445	1,000,536
Kingston, N. Y.....	453,500	43,143	230,250	Lynn, Mass.....	500,961	753,334	1,636,224
Lincoln, Neb.....	302,100	57,790	356,900	Malden, Mass.....	252,396	326,479	655,930
Louisville, Ky.....	361,447	85,695	377,246	Milwaukee, Wis.....	1,125,352	3,005,717	3,581,904
Macon, Ga.....	256,150	75,722	432,500	Minneapolis, Minn.....	2,029,656	3,436,807	7,046,799
Memphis, Tenn.....	416,210	42,800	269,250	Newark, N. J.....	1,636,549	1,331,322	4,602,297
Milwaukee, Wis.....	1,002,436	109,663	396,154	New Bedford, Mass.....	231,292	453,765	751,185
Minneapolis, Minn.....	563,335	56,773	239,196	New Haven, Conn.....	407,037	562,267	1,204,576
Omaha, Neb.....	1,213,135	153,658	640,410	New Orleans, La.....	259,728	419,727	849,477
Philadelphia, Pa.....	6,504,630	529,902	3,536,191	Newton, Mass.....	453,735	232,069	612,725
Pittsburg, Pa.....	1,477,527	293,566	1,066,824	New York, N. Y.....	3,361,515	4,797,443	13,715,184
Portland, Ore.....	516,710	37,130	264,400	Omaha, Neb.....	330,209	624,629	1,173,740
Reading, Pa.....	436,079	79,379	364,342	Paterson, N. J.....	431,039	579,914	1,139,693
St. Joseph, Mo.....	247,135	48,642	223,313	Peoria, Ill.....	333,316	551,027	1,146,690
St. Louis, Mo.....	2,763,323	330,103	1,731,692	Philadelphia, Pa.....	3,503,760	3,302,196	17,316,392
San Francisco, Cal.....	436,261	65,054	340,080	Pittsburg, Pa.....	590,310	357,411	1,372,332
Seattle, Wash.....	355,525	44,000	262,560	Portland, Me.....	312,150	246,230	539,371
Sioux City, Iowa.....	252,076	14,215	106,020	Portland, Ore.....	1,044,715	1,314,620	3,273,905
Springfield, Mass.....	211,000	43,198	132,500	Providence, R. I.....	606,463	907,049	1,915,126
Taunton, Mass.....	369,774	69,521	307,657	Quincy, Ill.....	203,500	316,393	614,700
Toledo, Ohio.....	217,570	20,211	173,600	Richmond, Va.....	855,508	479,355	1,249,021
Troy, N. Y.....	313,438	52,460	165,050	Rochester, N. Y.....	1,313,330	2,020,727	3,325,505
Washington, D. C.....	773,931	203,430	346,950	St. Louis, Mo.....	4,384,969	5,795,439	10,364,922
Zanesville, Ohio.....	331,990	40,526	229,000	St. Paul, Minn.....	724,115	1,431,330	2,503,613
<b>Bridges.</b>				San Francisco, Cal.....	1,055,063	1,144,063	2,924,984
Buffalo, N. Y.....	276,200	614,450	991,500	Somerville, Mass.....	234,960	532,623	1,063,441
Chicago, Ill.....	1,443,000	1,874,150	2,323,537	Springfield, Ill.....	295,225	272,915	573,675
Detroit, Mich.....	441,740	331,000	531,500	Springfield, Mass.....	252,700	492,745	944,510
Elmira, N. Y.....	279,700	225,570	310,064	Syracuse, N. Y.....	356,337	344,497	1,314,569
				Trenton, N. J.....	366,323	363,245	1,541,714



CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.	CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
Troy, N. Y.....	\$271,276	\$288,218	\$700,243	Toledo, Ohio.....	\$1,768,999	\$536,811	\$1,067,540
Utica, N. Y.....	282,255	289,015	518,800	Trenton, N. J.....	268,578	88,348	232,026
Washington, D. C.....	1,208,814	2,926,684	5,312,352	Washington, D. C.....	413,235	140,582	370,154
Wilmington, Del.....	211,225	281,644	720,342	Wilmington, Del.....	740,782	336,086	705,880
Worcester, Mass.....	562,690	1,186,579	2,109,628	<b>Cars, and General Shop</b>			
Yonkers, N. Y.....	620,525	441,759	1,073,407	<b>Construction and Repairs, by steam railroad companies.</b>			
<b>Carpets, Rag.</b>				Atlanta, Ga.....	367,366	310,224	762,952
Philadelphia, Pa.....	374,647	180,411	395,983	Boston, Mass.....	671,251	312,596	605,642
<b>Carpets and Rugs, other than Rag.</b>				Buffalo, N. Y.....	701,898	991,144	2,697,438
Philadelphia, Pa.....	15,545,490	13,070,198	22,000,681	Chicago, Ill.....	5,398,439	3,227,361	6,964,354
Yonkers, N. Y.....	2,942,364	4,918,726	7,962,491	Cincinnati, Ohio.....	201,294	329,355	662,349
<b>Carriage and Wagon Materials.</b>				Cleveland, Ohio.....	594,088	392,078	1,074,922
Cincinnati, Ohio.....	798,646	489,218	1,326,436	Columbus, Ohio.....	788,397	1,076,550	1,670,078
Cleveland, Ohio.....	234,150	122,651	310,960	Denver, Col.....	1,438,182	690,230	1,325,019
Columbus, Ohio.....	248,884	112,949	273,000	Detroit, Mich.....	3,628,736	7,350,974	10,278,281
Dayton, Ohio.....	262,393	52,115	160,469	Fort Wayne, Ind.....	1,478,341	1,021,521	1,726,117
Fort Wayne, Ind.....	376,765	171,054	338,458	Indianapolis, Ind.....	494,668	1,363,763	1,952,317
Indianapolis, Ind.....	332,235	245,728	563,980	Jersey City, N. J.....	469,668	650,298	1,484,423
Newark, N. J.....	432,328	191,588	509,673	Memphis, Tenn.....	206,415	192,518	312,377
New Haven, Conn.....	829,345	215,258	607,239	Milwaukee, Wis.....	720,865	319,144	917,289
Philadelphia, Pa.....	237,551	117,897	295,343	Minneapolis, Minn.....	364,643	226,072	463,499
Rochester, N. Y.....	258,852	105,487	229,263	Philadelphia, Pa.....	1,981,870	1,070,524	2,048,061
<b>Carriages and Sleds, Children's.</b>				St. Louis, Mo.....	518,386	426,399	909,412
Chicago, Ill.....	398,529	299,200	594,100	Springfield, Mass.....	518,921	432,266	956,452
Philadelphia, Pa.....	273,907	162,176	346,570	<b>Cars, and General Shop Construction and Repairs, by street railroad companies.</b>			
<b>Carriages and Wagons, including custom work and repairing.</b>				Chicago, Ill.....	1,109,500	238,511	594,854
Albany, N. Y.....	293,613	84,532	261,519	New York, N. Y.....	210,312	86,218	221,693
Allegheny, Pa.....	204,053	68,262	181,005	<b>Cars, Steam Railroad, not including operation of railroad companies.</b>			
Auburn, N. Y.....	326,635	100,341	243,720	Detroit, Mich.....	3,628,736	7,350,974	10,278,281
Baltimore, Md.....	757,069	249,194	781,474	St. Louis, Mo.....	1,011,927	2,327,820	3,386,173
Bay City, Mich.....		37,884	98,877	Wilmington, Del.....	2,839,733	1,528,528	3,291,293
Binghamton, N. Y.....	281,744	152,703	425,105	<b>Cars, Street Railroad, not including operation of railroad companies.</b>			
Boston, Mass.....	1,364,618	430,842	1,297,490	New York, N. Y.....	916,035	381,990	719,972
Bridgeport, Conn.....	438,775	169,057	400,722	St. Louis, Mo.....	841,182	472,062	1,063,926
Brooklyn, N. Y.....	1,575,826	552,175	1,624,326	<b>Celluloid and Celluloid Goods.</b>			
Buffalo, N. Y.....	1,438,670	539,350	1,230,126	Newark, N. J.....	1,919,818	444,309	1,721,773
Cambridge, Mass.....	237,425	104,303	280,225	<b>Chemicals.</b>			
Camden, N. J.....	344,198	76,756	223,213	Baltimore, Md.....	1,252,716	761,201	1,388,470
Chicago, Ill.....	4,459,095	1,480,419	3,971,086	Brooklyn, N. Y.....	6,970,285	6,318,308	9,091,609
Cincinnati, Ohio.....	5,355,188	4,828,390	8,669,312	Buffalo, N. Y.....	664,415	467,329	700,767
Cleveland, Ohio.....	623,560	225,060	634,742	Chicago, Ill.....	1,679,860	685,756	1,280,357
Columbus, Ohio.....	2,874,331	1,399,997	3,199,287	Cincinnati, Ohio.....	625,524	436,501	838,102
Dayton, Ohio.....	200,254	192,074	326,690	Long Island City, N. Y.....	291,451	165,315	248,659
Denver, Col.....	626,652	251,194	663,305	Newark, N. J.....	1,446,137	1,854,497	2,236,117
Detroit, Mich.....	715,137	214,567	577,432	New York, N. Y.....	4,016,451	2,044,859	4,706,956
Dubuque, Iowa.....	504,250	318,772	674,836	Philadelphia, Pa.....	11,219,675	6,205,398	9,674,910
Evansville, Ind.....	300,805	100,322	215,775	Pittsburg, Pa.....	344,850	81,760	233,875
Fort Wayne, Ind.....	406,600	180,432	398,074	St. Louis, Mo.....	1,623,675	1,562,497	2,632,750
Grand Rapids, Mich.....	293,222	158,345	309,646	San Francisco, Cal.....	825,136	593,061	879,412
Indianapolis, Ind.....	679,966	758,433	1,294,676	Syracuse, N. Y.....	2,632,625	708,550	1,746,500
Jackson, Mich.....	897,843	470,593	971,772	Yonkers, N. Y.....	302,650	163,806	507,109
Jersey City, N. J.....	224,608	118,116	324,605	<b>Chocolate and Cocoa Products.</b>			
Kansas City, Mo.....	219,588	61,901	200,305	New York, N. Y.....	1,023,111	618,200	1,045,000
Lancaster, Pa.....	351,235	133,954	282,130	<b>Clay and Pottery Products.</b>			
Louisville, Ky.....	357,650	132,074	382,981	Akron, Ohio.....	949,997	154,048	587,850
Memphis, Tenn.....	338,302	171,697	386,203	Baltimore, Md.....	502,622	116,010	500,625
Milwaukee, Wis.....	918,992	348,866	794,563	Brooklyn, N. Y.....	1,047,750	233,482	737,146
Minneapolis, Minn.....	333,975	154,569	377,228	Chicago, Ill.....	565,422	139,214	428,699
Newark, N. J.....	613,337	257,606	696,401	Cincinnati, Ohio.....	384,986	82,459	343,146
New Bedford, Mass.....	415,643	138,004	354,327	Denver, Col.....	220,325	83,675	192,290
New Haven, Conn.....	2,074,391	835,927	2,033,137	Kansas City, Mo.....	231,309	38,325	152,000
New Orleans, La.....	297,853	112,338	346,494	Long Island City, N. Y.....	491,560	38,856	312,000
New York, N. Y.....	4,020,914	1,275,871	3,885,678	Los Angeles, Cal.....	477,312	115,874	318,250
Omaha, Neb.....	238,325	129,944	265,475	New York, N. Y.....	438,200	70,288	275,145
Oshkosh, Wis.....	378,702	199,237	394,512	Philadelphia, Pa.....	966,529	137,061	601,996
Philadelphia, Pa.....	3,132,067	837,926	2,618,173	Pittsburg, Pa.....	345,627	42,601	218,771
Pittsburg, Pa.....	609,977	166,326	569,602	Portland, Me.....	387,052	75,554	243,714
Portland, Ore.....	238,851	56,175	190,820				
Providence, R. I.....	271,589	97,423	275,436				
Quincy, Ill.....	544,094	313,399	600,762				
Racine, Wis.....	2,353,382	1,139,205	1,902,536				
Richmond, Va.....	301,335	121,333	290,153				
Rochester, N. Y.....	1,463,880	235,404	759,918				
Sacramento, Cal.....	250,078	34,938	109,663				
St. Louis, Mo.....	3,203,659	1,773,720	3,603,735				
St. Paul, Minn.....	635,880	126,440	371,763				
San Francisco, Cal.....	1,086,942	322,013	953,639				
Seranton, Pa.....	205,000	77,430	174,279				
South Bend, Ind.....	6,395,703	1,176,406	3,069,391				
Syracuse, N. Y.....	1,222,119	517,438	1,081,548				

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Rochester, N. Y.....	\$449,800	\$60,245	\$222,400	Cleveland, Ohio.....	\$862,615	\$1,211,080	\$2,059,892
St. Louis, Mo.....	1,197,245	284,939	899,855	Detroit, Mich.....	548,425	819,503	1,269,827
Trenton, N. J.....	4,903,672	1,198,090	4,631,202	Evansville, Ind.....	393,462	368,238	658,350
Zanesville, Ohio.....	427,363	55,942	362,822	Indianapolis, Ind.....	382,077	544,095	861,250
<b>Clocks.</b>				Louisville, Ky.....	1,202,772	1,176,722	1,920,250
New York, N. Y.....	210,200	185,305	346,700	Newark, N. J.....	1,339,377	822,822	2,562,395
Boston, Mass.....	801,950	58,241	442,383	Newburg, N. Y.....	1,035,065	896,559	1,427,750
<b>Cloth, Spinging and Refinishing.</b>				New Orleans, La.....	1,514,682	1,290,187	2,174,747
New York, N. Y.....	340,800	27,295	270,000	Newport, Ky.....	335,772	414	440,800
<b>Clothing, Men's, cus- tom work and re- pairing.</b>				New York, N. Y.....	45,833,610	31,421,778	60,346,550
Albany, N. Y.....	776,847	394,021	873,979	Omaha, Neb.....	201,086	161,850	320,850
Allegheny, Pa.....	854,608	139,890	351,180	Pittsburg, Pa.....	694,900	419,040	786,500
Baltimore, Md.....	1,822,151	928,264	2,421,776	Portland, Me.....	243,773	249,060	359,400
Boston, Mass.....	5,093,620	1,542,739	5,000,777	Portland, Ore.....	205,165	299,540	462,970
Brooklyn, N. Y.....	3,654,344	1,785,785	4,178,850	Poughkeepsie N. Y.....	416,288	420,900	672,000
Buffalo, N. Y.....	1,733,397	933,060	2,130,424	Providence, R. I.....	717,150	364,480	835,522
Chicago, Ill.....	3,375,639	4,344,690	11,002,816	Rochester, N. Y.....	7,098,163	4,972,945	9,133,562
Cincinnati, Ohio.....	3,081,519	1,482,702	4,019,495	St. Joseph, Mo.....	525,170	737,210	1,125,870
Cleveland, Ohio.....	1,200,430	695,504	1,656,259	St. Louis, Mo.....	6,077,041	3,589,120	6,554,982
Columbus, Ohio.....	548,662	290,612	700,510	St. Paul, Minn.....	728,572	490,560	908,406
Davenport, Iowa.....	202,525	68,444	181,594	San Francisco, Cal.....	1,298,540	1,408,279	2,557,671
Dayton, Ohio.....	269,122	168,552	405,942	Syracuse, N. Y.....	2,422,392	1,772,926	3,429,219
Denver, Col.....	637,848	257,617	734,225	Terre Haute, Ind.....	240,320	411,557	602,955
Detroit, Mich.....	1,182,128	535,059	1,448,687	Utica, N. Y.....	2,655,888	1,582,292	2,833,308
Duluth, Minn.....	204,094	84,791	220,038	<b>Clothing, Women's, dressmaking.</b>			
Elmira, N. Y.....	266,654	119,844	238,899	Albany, N. Y.....	383,126	65,864	327,899
Grand Rapids, Mich.....	304,891	142,666	347,447	Baltimore, Md.....	413,283	296,598	658,188
Hartford, Conn.....	826,648	152,299	428,357	Boston, Mass.....	2,795,788	865,688	2,669,092
Indianapolis, Ind.....	599,124	296,372	759,953	Brooklyn, N. Y.....	1,435,607	1,129,975	2,630,453
Jersey City, N. J.....	278,542	130,262	285,951	Buffalo, N. Y.....	1,101,455	50,192	781,277
Kansas City, Mo.....	953,195	395,510	1,114,657	Cambridge, Mass.....	411,695	263,693	475,803
Lancaster, Pa.....	226,268	117,036	253,585	Chicago, Ill.....	2,298,302	1,897,823	3,574,164
Los Angeles, Cal.....	303,771	144,038	371,483	Cincinnati, Ohio.....	1,842,470	953,619	2,460,101
Louisville, Ky.....	938,052	591,961	1,299,165	Kansas City, Mo.....	213,618	190,642	539,468
Lynn, Mass.....	222,433	127,963	341,732	Los Angeles, Cal.....	225,379	5,283	222,630
Memphis, Tenn.....	292,470	122,437	249,195	Louisville, Ky.....	469,061	292,375	720,774
Milwaukee, Wis.....	1,208,570	606,246	1,390,754	Lowell, Mass.....	201,106	177,440	428,847
Minneapolis, Minn.....	1,089,589	393,164	1,002,754	Lynn, Mass.....	203,357	23,660	254,929
Newark, N. J.....	654,055	331,217	770,642	Milwaukee, Wis.....	534,602	991,474	1,591,642
New Haven, Conn.....	553,043	260,631	733,870	Minneapolis, Minn.....	943,464	1,167,197	1,884,693
New Orleans, La.....	424,660	203,740	498,046	Newport, Ky.....	203,983	93,140	245,785
New York, N. Y.....	18,642,840	7,383,747	17,956,391	New York, N. Y.....	7,993,219	2,645,429	8,026,035
Omaha, Neb.....	529,747	182,809	520,659	Omaha, Neb.....	208,063	46,123	170,849
Paterson, N. J.....	216,010	100,282	214,403	Philadelphia, Pa.....	1,447,484	521,416	1,720,476
Peoria, Ill.....	228,705	95,425	249,350	Providence, R. I.....	525,366	680,400	1,099,951
Philadelphia, Pa.....	6,614,550	2,665,252	6,901,631	Rochester, N. Y.....	297,245	36,330	233,233
Pittsburg, Pa.....	2,008,167	691,654	1,677,531	St. Louis, Mo.....	1,053,164	445,251	1,176,078
Portland, Ore.....	260,790	135,923	307,822	St. Paul, Minn.....	397,696	154,911	454,794
Poughkeepsie, N. Y.....	238,900	89,609	211,876	San Francisco, Cal.....	1,200,618	1,076,319	2,074,520
Providence, R. I.....	701,359	302,779	806,121	Springfield, Mass.....	235,354	46,739	246,123
Reading, Pa.....	301,911	111,971	251,264	Trenton, N. J.....	235,880	235,714	478,139
Richmond, Va.....	248,250	77,619	229,360	Washington, D. C.....	359,855	138,072	478,132
Rochester, N. Y.....	1,191,141	536,960	1,289,135	Yonkers, N. Y.....	284,618	249,695	493,635
Saginaw, Mich.....	202,345	121,520	267,478	<b>Clothing, Women's, fac- tory product.</b>			
St. Louis, Mo.....	2,922,668	1,239,230	3,075,706	Albany, N. Y.....	202,746	163,409	314,895
St. Paul, Minn.....	913,143	300,595	898,778	Baltimore, Md.....	745,140	447,026	870,631
San Francisco, Cal.....	3,541,535	1,444,768	3,718,646	Boston, Mass.....	1,012,321	736,935	1,506,212
Syracuse, N. Y.....	843,762	291,326	686,405	Brooklyn, N. Y.....	423,209	563,296	1,036,767
Toledo, Ohio.....	370,527	154,406	366,816	Chicago, Ill.....	4,567,912	3,257,712	6,422,431
Trenton, N. J.....	411,224	183,085	473,872	Cincinnati, Ohio.....	1,564,310	998,133	2,285,598
Troy, N. Y.....	437,237	159,667	449,463	Cleveland, Ohio.....	1,062,155	1,223,327	1,918,500
Utica, N. Y.....	273,340	116,451	300,013	Denver, Col.....	419,884	260,162	642,760
Washington, D. C.....	995,691	372,088	1,072,394	Newark, N. J.....	218,575	183,918	346,197
Wheeling, W. Va.....	256,336	163,007	359,342	New York, N. Y.....	19,906,274	20,814,765	39,682,666
Wilkesbarre, Pa.....	229,410	82,640	179,325	Philadelphia, Pa.....	2,254,977	1,920,593	3,335,746
Wilmington, Del.....	245,727	98,775	245,725	Rochester, N. Y.....	272,550	212,385	405,400
Worcester, Mass.....	245,499	181,526	312,287	St. Louis, Mo.....	444,250	298,852	541,894
				San Francisco, Cal.....	1,112,042	911,335	1,669,643
<b>Clothing, Men's, cus- tom work and re- pairing, materials furnished.</b>				<b>Clothing, Women's, fac- tory product, mate- rials furnished.</b>			
New York, N. Y.....	517,499	18,953	483,588	New York, N. Y.....	918,898	53,623	3,096,620
<b>Clothing, Men's, factory product.</b>				<b>Coffee and Spice, roast- ing and grinding.</b>			
Albany, N. Y.....	453,625	167,245	352,252	Albany, N. Y.....	223,075	410,337	513,166
Baltimore, Md.....	11,897,563	8,123,073	15,082,924	Baltimore, Md.....	428,919	1,448,494	1,662,290
Binghamton, N. Y.....	671,679	415,355	814,500	Boston, Mass.....	1,724,425	2,827,606	3,345,498
Boston, Mass.....	15,757,168	10,923,650	19,640,779	Brooklyn, N. Y.....	2,963,392	11,051,338	12,247,162
Buffalo, N. Y.....	2,089,957	1,584,806	2,520,143	Chicago, Ill.....	2,405,008	7,990,923	9,004,596
Chicago, Ill.....	19,564,525	17,560,834	32,517,226	Cincinnati, Ohio.....	811,232	1,791,752	2,427,855
Cincinnati, Ohio.....	15,531,190	8,464,190	17,951,525	Dayton, Ohio.....	217,117	804,293	921,500
				Kansas City, Mo.....	253,500	526,835	655,200
				Milwaukee, Wis.....	477,922	711,618	906,025



CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.	CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
New York, N. Y.....	\$2,984,791	\$15,900,232	\$17,037,019	<b>Cordials and Sirups.</b>			
Philadelphia, Pa.....	1,021,442	1,654,390	2,119,452	New York, N. Y.....	\$403,500	\$410,698	\$621,000
Pittsburg, Pa.....	812,830	3,946,543	4,223,622	<b>Cork Cutting.</b>			
St. Louis, Mo.....	1,233,888	2,076,771	2,466,392	Brooklyn, N. Y.....	439,225	307,768	566,250
San Francisco, Cal.....	2,034,278	2,127,281	2,720,741	Chicago, Ill.....	207,850	117,363	205,400
Toledo, Ohio.....	209,421	2,564,350	2,830,000	<b>Corsets.</b>			
<b>Coffin and Burial Cases, trimming and finishing.</b>				Jackson, Mich.....	267,593	149,685	375,233
Baltimore, Md.....	276,227	162,631	370,372	Newark, N. J.....	690,536	625,121	1,291,432
Brooklyn, N. Y.....	584,456	270,286	563,951	New Haven, Conn.....	1,148,144	1,045,430	1,920,867
Chicago, Ill.....	443,532	157,805	339,032	New York, N. Y.....	1,220,610	438,881	1,196,440
New York, N. Y.....	1,243,888	472,423	1,137,900	<b>Cotton Compressing.</b>			
Philadelphia, Pa.....	927,556	347,563	736,530	Charleston, S. C.....	1,187,000	11,165	124,000
Washington, D. C.....	231,575	156,623	297,947	New Orleans, La.....	2,429,765	28,032	931,532
<b>Coffin and Burial Cases and Undertakers' Goods.</b>				<b>Cotton Goods.</b>			
Brooklyn, N. Y.....	265,958	110,794	275,300	Atlanta, Ga.....	1,905,535	722,470	1,140,004
Chicago, Ill.....	956,650	267,123	743,300	Augusta, Ga.....	5,337,362	2,717,901	3,979,042
Cincinnati, Ohio.....	1,303,115	536,101	1,164,100	Boston, Mass.....	450,100	487,830	621,250
Detroit, Mich.....	213,256	131,633	244,147	Brooklyn, N. Y.....	287,700	487,470	615,100
Minneapolis, Minn.....	257,143	95,583	195,932	Chester, Pa.....	3,335,323	1,637,231	2,960,224
New York, N. Y.....	1,379,270	613,663	1,315,255	Cincinnati, Ohio.....	1,586,867	876,146	1,428,204
St. Louis, Mo.....	545,762	171,430	436,684	Fall River, Mass.....	32,118,607	13,626,090	24,925,764
<b>Coke.</b>				Fitchburg, Mass.....	1,492,910	946,764	1,705,440
Pittsburg, Pa.....	622,032	213,322	372,474	Holyoke, Mass.....	5,554,356	2,071,366	4,392,732
<b>Confectionery.</b>				Lancaster, Pa.....	1,954,009	743,288	1,236,254
Baltimore, Md.....	1,101,474	1,193,309	1,861,599	Lawrence, Mass.....	8,555,510	3,852,741	6,046,914
Boston, Mass.....	2,746,029	2,245,642	3,555,831	Lewiston, Me.....	5,966,426	2,690,180	5,013,337
Brooklyn, N. Y.....	2,923,509	1,833,911	3,731,202	Lincoln, R. I.....	6,469,092	2,039,140	4,022,329
Buffalo, N. Y.....	650,645	507,796	545,760	Lowell, Mass.....	24,221,879	11,874,641	19,789,111
Cambridge, Mass.....	295,956	362,819	684,875	Manchester, N. H.....	14,032,137	6,465,866	10,957,219
Chicago, Ill.....	2,465,693	2,391,051	3,789,169	Newark, N. J.....	7,221,846	1,129,687	2,439,602
Cincinnati, Ohio.....	1,237,240	710,995	1,400,065	New Bedford, Mass.....	14,036,446	4,031,533	8,185,286
Cleveland, Ohio.....	316,425	257,275	515,400	New York, N. Y.....	606,740	274,533	523,244
Denver, Col.....	340,300	250,890	546,260	Paterson, N. J.....	743,569	336,380	729,294
Detroit, Mich.....	666,763	597,512	1,130,643	Pawtucket, R. I.....	7,548,334	2,137,230	3,954,960
Indianapolis, Ind.....	398,153	292,710	497,673	Petersburg, Va.....	1,007,042	410,245	574,536
Kansas City, Mo.....	377,916	537,410	860,004	Philadelphia, Pa.....	9,638,697	6,459,434	11,514,601
Lancaster, Pa.....	232,922	266,371	470,835	Providence, R. I.....	4,119,212	1,969,954	3,767,589
Louisville, Ky.....	546,873	299,376	569,610	Springfield, Mass.....	581,010	403,998	518,616
Milwaukee, Wis.....	425,773	506,801	770,341	Taunton, Mass.....	2,599,694	1,629,595	2,747,816
Minneapolis, Minn.....	419,618	302,995	520,309	Utica, N. Y.....	2,894,859	1,256,072	2,160,247
Newark, N. J.....	232,003	126,496	259,935	Worcester, Mass.....	517,129	400,297	578,853
New Orleans, La.....	237,031	125,373	237,853	<b>Cotton Waists.</b>			
New York, N. Y.....	6,399,078	3,633,291	6,506,974	Philadelphia, Pa.....	410,121	535,209	684,233
Omaha, Neb.....	247,951	245,087	416,947	<b>Cutlery and Edge Tools.</b>			
Paterson, N. J.....	236,170	81,071	171,780	Chicago, Ill.....	230,230	74,868	215,534
Philadelphia, Pa.....	4,333,949	2,813,210	5,154,563	Louisville, Ky.....	198,400	77,714	173,490
Pittsburg, Pa.....	735,619	337,342	624,116	Newark, N. J.....	378,373	106,002	367,495
Portland, Ore.....	337,895	235,404	536,700	New York, N. Y.....	506,537	108,459	475,599
Providence, R. I.....	211,705	178,545	333,767	Philadelphia, Pa.....	348,937	47,142	209,116
Rochester, N. Y.....	412,510	260,154	437,700	Rochester, N. Y.....	233,970	36,767	133,110
St. Louis, Mo.....	1,691,716	1,361,930	2,462,037	<b>Dentistry, Mechanical.</b>			
St. Paul, Minn.....	359,950	244,957	453,020	Boston, Mass.....	605,778	55,227	323,677
San Francisco, Cal.....	1,127,998	534,193	1,131,678	Brooklyn, N. Y.....	352,655	48,711	249,952
Washington, D. C.....	501,354	332,269	672,118	Chicago, Ill.....	1,543,775	160,371	1,285,947
<b>Cooperage.</b>				Cincinnati, Ohio.....	219,960	42,132	214,996
Baltimore, Md.....	326,104	505,298	833,420	New York, N. Y.....	2,354,563	221,133	1,332,536
Boston, Mass.....	411,046	273,030	453,456	Philadelphia, Pa.....	612,423	121,644	509,577
Brooklyn, N. Y.....	1,973,735	1,019,467	2,140,665	San Francisco, Cal.....	687,169	57,980	399,218
Buffalo, N. Y.....	324,245	324,573	539,400	<b>Drug Grinding.</b>			
Charleston, S. C.....	306,420	279,875	425,125	New York, N. Y.....	171,548	8,846	89,034
Chicago, Ill.....	256,694	1,237,733	2,322,136	<b>Druggists' Preparations, not including prescriptions.</b>			
Cincinnati, Ohio.....	725,272	904,041	1,590,512	Boston, Mass.....	460,923	150,906	432,748
Milwaukee, Wis.....	323,298	300,201	323,573	Brooklyn, N. Y.....	570,138	167,831	401,359
Minneapolis, Minn.....	310,436	629,329	1,209,338	Chicago, Ill.....	543,238	109,209	291,641
New Orleans, La.....	540,101	335,879	810,611	New York, N. Y.....	1,592,967	367,501	1,116,334
New York, N. Y.....	909,246	359,096	1,274,746	Philadelphia, Pa.....	2,256,278	471,039	1,275,629
Peoria, Ill.....	338,200	687,279	1,102,550	Portland, Ore.....	237,675	74,775	184,675
Philadelphia, Pa.....	1,178,713	980,977	1,749,985	St. Louis, Mo.....	610,329	117,627	344,913
Pittsburg, Pa.....	221,823	274,607	468,351	Washington, D. C.....	537,625	120,755	377,850
Portland, Me.....	315,219	270,754	373,026	<b>Dyeing and Cleaning.</b>			
St. Louis, Mo.....	1,104,558	1,033,102	1,912,779	Brooklyn, N. Y.....	215,473	25,531	157,435
San Francisco, Cal.....	547,471	600,159	1,084,931	Chicago, Ill.....	293,767	130,044	275,052
<b>Cordage and Twine.</b>				New York, N. Y.....	556,743	84,425	446,249
Boston, Mass.....	4,163,089	3,675,334	5,351,614	Philadelphia, Pa.....	407,864	43,944	333,269
Brooklyn, N. Y.....	2,350,400	5,190,138	6,535,792	St. Louis, Mo.....	209,275	26,213	170,909
Cincinnati, Ohio.....	841,755	775,440	1,554,860	San Francisco, Cal.....	227,335	44,041	337,179
New York, N. Y.....	3,805,666	2,431,654	3,750,559	<b>Dyeing and Finishing Textiles.</b>			
Philadelphia, Pa.....	2,312,678	2,362,477	3,053,756	Fall River, Mass.....	2,633,681	565,289	1,206,191
St. Louis, Mo.....	357,374	474,497	664,305	Lawrence, Mass.....	3,108,299	553,377	1,159,722

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Lowell, Mass. ....	\$742,070	\$152,274	\$426,741	<b>Flouring and Grist Mill Products.</b>			
New York, N. Y. ....	1,606,220	533,486	1,538,884	Akron, Ohio. ....	\$1,927,100	\$2,492,045	\$2,968,109
Paterson, N. J. ....	1,397,006	1,118,691	2,252,316	Baltimore, Md. ....	314,465	2,775,780	3,255,115
Philadelphia, Pa. ....	4,766,619	1,953,812	4,356,272	Binghamton, N. Y. ....	256,282	919,046	1,147,612
Providence, R. I. ....	3,042,380	760,728	1,957,690	Boston, Mass. ....	240,525	461,894	517,215
Pawtucket, R. I. ....	1,833,519	430,899	1,417,971	Brooklyn, N. Y. ....	779,075	3,502,000	4,011,620
<b>Dyestuffs and Extracts.</b>				Buffalo, N. Y. ....	1,337,341	3,142,662	3,653,098
Boston, Mass. ....	846,217	1,428,577	1,703,686	Charleston, S. C. ....	218,625	342,951	839,914
Brooklyn, N. Y. ....	1,351,900	761,206	977,000	Chicago, Ill. ....	1,898,888	3,828,795	4,709,447
<b>Electric Light and Power.</b>				Cincinnati, Ohio. ....	354,759	532,842	699,588
Brooklyn, N. Y. ....	2,684,836	91,181	496,979	Cleveland, Ohio. ....	448,582	1,977,565	2,345,588
New York, N. Y. ....	16,628,550	345,664	1,565,074	Dallas, Texas. ....	245,300	841,325	1,094,824
Rochester, N. Y. ....	1,300,529	51,227	264,343	Davenport, Iowa. ....	570,569	764,572	827,300
St. Louis, Mo. ....	2,722,286	130,153	423,690	Denver, Col. ....	972,350	1,581,024	1,945,600
<b>Electrical Apparatus and Supplies.</b>				Detroit, Mich. ....	442,925	1,343,976	1,613,063
Boston, Mass. ....	777,328	242,838	706,319	Erie, Pa. ....	418,963	855,102	989,697
Brooklyn, N. Y. ....	485,598	130,950	815,576	Evansville, Ind. ....	494,200	1,603,656	1,541,629
Chicago, Ill. ....	584,400	161,325	439,850	Fort Worth, Texas. ....	287,645	1,200,623	1,290,290
Cincinnati, Ohio. ....	350,205	53,188	159,530	Grand Rapids, Mich. ....	751,514	1,386,912	1,558,845
Cleveland, Ohio. ....	456,375	91,166	445,200	Indianapolis, Ind. ....	565,463	2,973,431	3,265,804
New York, N. Y. ....	6,440,184	1,530,271	3,975,836	Jackson, Mich. ....	222,199	526,159	618,710
Philadelphia, Pa. ....	466,549	425,822	639,365	Kansas City, Mo. ....	579,173	1,052,657	1,323,028
St. Louis, Mo. ....	960,847	238,747	674,950	Lacrosse, Wis. ....	522,955	1,949,865	2,134,735
<b>Electroplating.</b>				Lawrence, Mass. ....	424,166	1,132,122	1,266,788
Boston, Mass. ....	222,467	30,044	170,200	Louisville, Ky. ....	366,288	833,032	1,067,415
Chicago, Ill. ....	203,045	33,554	177,951	Memphis, Tenn. ....	296,078	870,450	975,250
New York, N. Y. ....	485,453	135,808	512,014	Milwaukee, Wis. ....	1,906,237	3,336,077	4,438,933
Philadelphia, Pa. ....	636,273	58,897	299,102	Minneapolis, Minn. ....	10,787,268	27,366,986	30,707,998
Providence, R. I. ....	265,401	449,821	649,392	New York, N. Y. ....	2,660,346	6,910,148	8,098,430
<b>Engraving and Die Sinking.</b>				Oakland, Cal. ....	210,400	485,441	526,633
Chicago, Ill. ....	312,786	50,728	299,925	Oswego, N. Y. ....	524,450	929,949	1,055,632
New York, N. Y. ....	690,219	195,501	911,943	Philadelphia, Pa. ....	588,692	1,411,422	1,662,697
<b>Engraving, Steel, in- cluding plate print- ing.</b>				Pittsburg, Pa. ....	540,500	1,454,124	1,639,340
Boston, Mass. ....	336,322	122,010	390,821	Rochester, N. Y. ....	1,458,554	3,920,734	4,603,226
New York, N. Y. ....	1,448,340	322,564	1,300,604	Sacramento, Cal. ....	668,000	1,262,660	1,525,460
Philadelphia, Pa. ....	328,661	46,042	292,648	Saginaw, Mich. ....	297,228	405,396	478,676
Washington, D. C. ....	1,546,425	178,576	1,033,589	St. Joseph, Mo. ....	598,463	1,343,494	1,611,690
<b>Engraving, Wood.</b>				St. Louis, Mo. ....	4,318,254	10,853,606	12,456,000
New York, N. Y. ....	219,735	30,610	362,393	St. Paul, Minn. ....	235,041	235,333	357,300
<b>Envelopes.</b>				San Francisco, Cal. ....	1,252,230	2,998,170	3,559,666
New York, N. Y. ....	573,632	522,621	977,370	Scranton, Pa. ....	369,724	685,002	777,180
Philadelphia, Pa. ....	492,969	238,598	438,299	Sioux City, Iowa. ....	363,350	378,060	443,400
Springfield, Mass. ....	741,732	517,918	1,039,112	Springfield, Mo. ....	224,124	593,690	722,150
Worcester, Mass. ....	581,342	539,192	901,262	Terre Haute, Ind. ....	634,914	2,209,013	2,471,145
<b>Fancy Articles, not elsewhere specified.</b>				Toledo, Ohio. ....	453,590	1,323,301	1,481,447
Boston, Mass. ....	290,449	92,574	233,535	Topeka, Kan. ....	602,950	1,237,235	1,529,121
New York, N. Y. ....	1,240,332	692,914	1,351,602	Utica, N. Y. ....	212,900	340,242	331,300
Philadelphia, Pa. ....	373,251	156,073	465,893	Washington, D. C. ....	810,517	1,359,883	1,564,062
<b>Fertilizers.</b>				Wichita, Kan. ....	266,995	347,110	420,349
Baltimore, Md. ....	4,163,347	2,566,377	3,957,345	<b>Food Preparations.</b>			
Boston, Mass. ....	414,100	159,324	228,000	Boston, Mass. ....	823,888	586,351	1,058,023
Chicago, Ill. ....	949,144	294,335	909,753	Brooklyn, N. Y. ....	361,150	273,311	505,256
Louisville, Ky. ....	214,085	156,769	225,269	Chicago, Ill. ....	533,270	662,859	1,225,193
Macon, Ga. ....	255,200	401,663	547,200	New York, N. Y. ....	790,222	962,399	2,399,631
Newark, N. J. ....	1,963,322	1,436,720	2,292,000	Philadelphia, Pa. ....	753,965	645,083	1,060,620
Philadelphia, Pa. ....	1,960,286	1,600,563	2,244,364	St. Louis, Mo. ....	476,966	387,769	662,160
St. Louis, Mo. ....	214,658	124,823	212,716	San Francisco, Cal. ....	241,542	257,707	430,928
Savannah, Ga. ....	1,710,969	718,689	1,262,061	<b>Foundry and Machine- shop Products.</b>			
<b>Files.</b>				Akron, Ohio. ....	735,300	433,640	1,047,424
Philadelphia, Pa. ....	914,391	391,663	955,636	Albany, N. Y. ....	1,643,016	640,564	2,059,102
Providence, R. I. ....	605,035	126,223	390,280	Allegheny, Pa. ....	1,940,817	827,629	1,795,878
<b>Fish Canning and Pre- serving.</b>				Allentown, Pa. ....	508,759	354,965	716,193
Gloucester, Mass. ....	632,666	1,707,679	2,031,391	Atlanta, Ga. ....	1,000,173	269,259	790,375
<b>Flags and Banners.</b>				Auburn, N. Y. ....	267,607	73,368	261,436
New York, N. Y. ....	373,366	133,953	316,050	Baltimore, Md. ....	5,041,767	1,793,715	4,718,189
<b>Flavoring Extracts.</b>				Bay City, Mich. ....	657,833	205,569	554,622
New York, N. Y. ....	339,173	205,636	405,370	Binghamton, N. Y. ....	311,225	86,707	301,440
Philadelphia, Pa. ....	233,455	430,364	612,262	Birmingham, Ala. ....	612,672	170,341	474,229



CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Columbus, Ohio.....	\$1,900,917	\$895,327	\$2,139,185	Washington, D. C.....	\$519,000	\$211,915	\$505,400
Dallas, Tex.....	385,065	132,520	343,250	Waterbury, Conn.....	634,597	263,282	732,052
Davenport, Iowa.....	373,834	163,525	336,627	Wheeling, W. Va.....	274,709	51,354	248,574
Dayton, Ohio.....	1,626,558	689,478	1,843,273	Wilkesbarre, Pa.....	786,145	339,837	617,832
Denver, Col.....	1,323,661	433,803	1,109,519	Williamsport, Pa.....	543,249	185,939	470,601
Des Moines, Iowa.....	333,020	196,912	459,425	Wilmington, Del.....	3,013,178	1,149,505	2,495,034
Detroit, Mich.....	6,669,649	3,356,200	7,631,103	Woonsocket, R. I.....	416,780	157,223	374,050
Dubuque, Iowa.....	568,775	214,830	491,500	Worcester, Mass.....	5,116,256	2,332,293	5,472,417
Elizabeth, N. J.....	1,231,485	571,890	1,445,403	Yonkers, N. Y.....	1,247,064	437,446	1,090,920
Elmira, N. Y.....	516,367	113,307	388,913	York, Pa.....	427,140	219,129	506,813
Erie, Pa.....	4,640,014	1,925,526	4,310,183	Youngstown, Ohio.....	883,547	247,395	501,545
Evansville, Ind.....	991,351	236,892	939,989	Zanesville, Ohio.....	489,623	123,001	323,128
Fall River, Mass.....	625,913	341,301	832,674	<b>Foundry Supplies.</b>			
Fitchburg, Mass.....	1,304,452	472,232	1,125,687	Cincinnati, Ohio.....	265,005	73,260	198,000
Fort Wayne, Ind.....	2,036,602	1,041,588	1,866,467	<b>Fruits and Vegetables, canning and pre- serving.</b>			
Grand Rapids, Mich.....	944,157	214,775	753,490	Baltimore, Md.....	2,288,159	3,514,218	5,722,552
Harrisburg, Pa.....	325,250	46,674	206,500	New York, N. Y.....	207,255	341,451	457,000
Hartford, Conn.....	2,617,750	569,611	2,002,555	Philadelphia, Pa.....	706,354	477,029	700,022
Hoboken, N. J.....	333,420	159,622	403,850	St. Louis, Mo.....	439,705	1,038,984	1,347,051
Holyoke, Mass.....	1,509,414	486,778	1,276,110	San Francisco, Cal.....	1,378,352	1,860,912	2,326,700
Houston, Tex.....	209,950	118,305	232,654	<b>Fur Goods.</b>			
Indianapolis, Ind.....	1,961,685	837,421	2,162,803	Boston, Mass.....	1,051,056	442,053	823,079
Jackson, Mich.....	1,746,279	176,599	374,286	Brooklyn, N. Y.....	339,765	429,970	794,100
Jersey City, N. J.....	1,744,731	787,948	1,822,104	Chicago, Ill.....	1,544,010	539,063	1,156,630
Joliet, Ill.....	200,161	107,482	248,319	Cincinnati, Ohio.....	439,475	317,075	433,500
Kansas City, Kan.....	749,262	416,092	945,335	Cleveland, Ohio.....	283,045	136,890	249,284
Kansas City, Mo.....	659,370	207,435	629,960	Milwaukee, Wis.....	484,967	585,634	752,511
Knoxville, Tenn.....	509,461	206,446	423,915	Minneapolis, Minn.....	276,826	96,142	161,645
Lancaster, Pa.....	437,533	197,486	488,357	New York, N. Y.....	7,996,811	5,830,469	10,637,261
Lawrence, Mass.....	1,253,203	434,875	1,221,913	Philadelphia, Pa.....	1,393,370	568,806	1,016,351
Long Island City, N. Y.	543,700	143,860	493,443	Rochester, N. Y.....	248,212	194,188	369,000
Los Angeles, Cal.....	314,482	137,897	310,179	St. Paul, Minn.....	1,490,152	608,144	940,120
Louisville, Ky.....	4,247,779	1,880,036	4,131,933	San Francisco, Cal.....	674,725	813,045	1,227,800
Lowell, Mass.....	3,393,423	1,277,106	3,331,338	<b>Furnishing Goods, Men's.</b>			
Lynn, Mass.....	499,270	184,214	674,139	Albany, N. Y.....	228,685	226,768	502,950
Macon, Ga.....	344,200	40,436	231,600	Baltimore, Md.....	562,391	769,376	1,492,300
Manchester, N. H.....	1,556,831	560,930	956,115	Boston, Mass.....	655,199	417,971	759,028
Memphis, Tenn.....	1,313,005	495,302	1,251,905	Brooklyn, N. Y.....	229,842	239,684	478,682
Meriden, Conn.....	1,656,930	429,056	1,063,680	Chicago, Ill.....	1,533,234	1,099,466	1,338,510
Milwaukee, Wis.....	5,894,797	2,554,475	5,568,445	Cincinnati, Ohio.....	784,225	405,572	1,000,055
Minneapolis, Minn.....	1,374,924	415,825	1,411,721	Detroit, Mich.....	249,425	227,420	434,500
Muskegon, Mich.....	262,026	42,435	178,462	Milwaukee, Wis.....	245,742	195,675	347,205
Nashville, Tenn.....	773,160	272,530	761,320	New York, N. Y.....	5,792,492	5,018,054	9,349,808
Newark, N. J.....	3,694,928	1,185,520	3,213,848	Philadelphia, Pa.....	1,901,938	1,579,581	2,356,867
New Bedford, Mass.....	335,887	106,562	303,983	Rochester, N. Y.....	355,350	241,690	477,000
Newburg, N. Y.....	610,112	300,884	655,574	San Francisco, Cal.....	1,592,743	1,519,130	2,393,362
New Haven, Conn.....	1,634,351	634,434	1,514,358	Troy, N. Y.....	2,061,793	842,909	3,054,456
New Orleans, La.....	1,632,249	861,047	1,972,556	<b>Furniture, cabinet- making, repairing, and upholstering.</b>			
Newport, Ky.....	585,306	602,596	922,014	Baltimore, Md.....	469,694	281,680	592,242
Newton, Mass.....	296,212	109,885	283,575	Boston, Mass.....	990,952	474,323	1,099,138
New York, N. Y.....	19,743,185	6,919,417	19,543,794	Brooklyn, N. Y.....	1,173,771	953,836	2,041,577
Norfolk, Va.....	234,271	40,188	216,389	Buffalo, N. Y.....	270,354	102,699	221,945
Omaha, Neb.....	499,240	394,167	727,600	Chicago, Ill.....	1,150,276	601,014	1,182,035
Oshkosh, Wis.....	313,960	81,607	223,325	Cincinnati, Ohio.....	615,015	328,948	839,695
Oswego, N. Y.....	793,386	180,207	412,177	Cincinnati, Ohio.....	615,015	328,948	839,695
Paterson, N. J.....	2,769,321	1,960,370	4,048,592	Denver, Col.....	247,890	55,649	197,811
Pattucket, R. I.....	1,113,604	366,752	1,110,852	Milwaukee, Wis.....	370,465	174,678	386,801
Peoria, Ill.....	372,070	127,347	424,584	Newark, N. J.....	270,600	72,782	172,993
Philadelphia, Pa.....	33,655,744	11,973,876	29,554,444	New York, N. Y.....	3,113,241	684,548	2,169,901
Pittsburg, Pa.....	10,744,688	4,930,726	10,706,616	Philadelphia, Pa.....	2,894,145	999,816	2,779,979
Portland, Me.....	1,010,411	255,009	513,168	San Francisco, Cal.....	726,017	297,250	744,730
Portland, Ore.....	747,978	335,827	899,638	Syracuse, N. Y.....	230,825	115,950	222,081
Providence, R. I.....	10,094,787	3,114,393	8,351,085	Washington, D. C.....	465,186	159,425	386,395
Quincy, Ill.....	1,420,765	409,724	1,157,817	<b>Furniture, chairs.</b>			
Racine, Wis.....	231,645	119,718	307,701	Baltimore, Md.....	359,362	388,150	585,030
Reading, Pa.....	1,833,120	732,489	1,769,949	Binghamton, N. Y.....	228,700	103,250	233,000
Richmond, Va.....	2,456,155	935,826	1,867,461	Boston, Mass.....	302,830	148,165	273,775
Rochester, N. Y.....	3,078,647	1,065,335	2,944,049	Chicago, Ill.....	657,103	180,205	660,060
Rockford, Ill.....	525,110	149,440	481,915	Cincinnati, Ohio.....	239,325	87,965	290,725
Saginaw, Mich.....	1,114,689	310,697	814,098	Indianapolis, Ind.....	256,998	90,748	332,000
St. Louis, Mo.....	11,034,365	5,096,781	11,945,493	New York, N. Y.....	880,008	450,158	951,375
St. Paul, Minn.....	623,678	350,086	739,350	Philadelphia, Pa.....	586,104	331,471	695,444
Salem, Mass.....	217,424	92,361	249,845	Rochester, N. Y.....	467,568	291,467	583,500
Salt Lake, Utah.....	203,688	89,897	227,647	<b>Furniture, factory product.</b>			
San Antonio, Texas.....	256,400	97,145	279,055	Allentown, Pa.....	470,584	164,022	428,355
San Francisco, Cal.....	6,272,785	2,801,666	6,445,443	Atlanta, Ga.....	354,258	231,737	540,628
Scranton, Pa.....	2,187,345	518,452	1,296,705	Baltimore, Md.....	1,061,807	644,861	1,471,889
Seattle, Wash.....	524,008	380,010	771,380	Boston, Mass.....	3,377,352	1,914,338	4,082,476
Springfield, Ill.....	202,837	70,965	233,380				
Springfield, Mass.....	1,177,704	663,750	1,236,944				
Springfield, Ohio.....	1,510,186	857,959	1,857,599				
Syracuse, N. Y.....	1,592,504	532,457	1,379,900				
Tacoma, Wash.....	211,460	74,090	285,000				
Taunton, Mass.....	1,824,603	672,262	1,995,966				
Terre Haute, Ind.....	293,890	94,970	216,100				
Toledo, Ohio.....	670,420	505,630	966,623				
Trenton, N. J.....	1,710,370	904,242	1,777,874				
Troy, N. Y.....	3,403,303	856,899	2,505,647				
Utica, N. Y.....	674,242	339,382	771,616				

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Brooklyn, N. Y.....	\$995,642	\$345,288	\$1,807,177	<b>Gold and Silver, reduc- ing and refining, not from the ore.</b>			
Buffalo, N. Y.....	1,381,462	661,085	1,587,267	New York, N. Y.....	\$291,827	\$926,997	\$1,009,000
Burlington, Iowa.....	293,010	142,688	323,975	Providence, R. I.....	362,275	1,162,168	1,419,558
Cambridge, Mass.....	621,493	227,599	756,740	<b>Grease and Tallow.</b>			
Chattanooga, Tenn.....	396,642	137,370	339,375	Boston, Mass.....	796,713	334,761	538,189
Chicago, Ill.....	9,879,246	5,419,179	12,922,290	Chicago, Ill.....	436,200	462,950	773,824
Cincinnati, Ohio.....	4,652,278	1,448,070	4,208,974	New York, N. Y.....	207,070	395,174	433,600
Cleveland, Ohio.....	395,967	523,777	823,157	Philadelphia, Pa.....	455,680	858,576	1,107,529
Columbus, Ohio.....	334,151	104,695	258,288	<b>Hairwork.</b>			
Dayton, Ohio.....	209,784	60,889	183,361	Boston, Mass.....	381,595	40,060	140,494
Denver, Col.....	274,730	122,513	307,761	Brooklyn, N. Y.....	195,450	28,938	110,042
Detroit, Mich.....	462,383	287,947	792,656	Chicago, Ill.....	473,241	91,338	307,300
Evansville, Ind.....	667,145	350,374	790,836	New York, N. Y.....	673,473	258,866	605,668
Grand Rapids, Mich.....	5,640,649	2,270,244	5,638,916	Philadelphia, Pa.....	494,027	100,947	288,942
Indianapolis, Ind.....	1,317,014	921,457	1,920,661	San Francisco, Cal.....	246,190	18,687	94,097
Kansas City, Mo.....	273,265	163,630	350,000	<b>Hand Stamps.</b>			
Louisville, Ky.....	642,234	246,237	707,352	New York, N. Y.....	231,068	58,608	227,590
Milwaukee, Wis.....	1,063,666	625,054	1,313,489	<b>Hardware.</b>			
Minneapolis, Minn.....	680,893	240,251	807,166	Bridgeport, Conn.....	469,406	206,394	462,700
Muskegon, Mich.....	230,512	140,993	314,014	Brooklyn, N. Y.....	775,970	263,026	798,419
Nashville, Tenn.....	397,586	184,098	494,500	Buffalo, N. Y.....	305,384	87,515	339,853
New York, N. Y.....	11,635,658	4,767,107	12,540,215	Chicago, Ill.....	2,363,595	1,049,904	2,724,968
Oshkosh, Wis.....	490,626	222,771	552,525	Cleveland, Ohio.....	592,585	376,319	697,190
Philadelphia, Pa.....	4,227,587	1,941,180	4,512,913	Newark, N. J.....	426,162	129,676	440,316
Portland, Ore.....	681,362	553,596	1,159,125	New Haven, Conn.....	1,685,411	683,057	2,426,907
Rochester, N. Y.....	1,051,933	422,678	1,018,772	New York, N. Y.....	1,461,542	380,749	1,304,595
Rockford, Ill.....	896,641	385,693	1,084,993	Philadelphia, Pa.....	1,840,028	582,194	1,932,761
St. Paul, Minn.....	258,865	145,924	351,720	Reading, Pa.....	1,188,052	420,363	1,057,282
San Francisco, Cal.....	1,180,917	381,447	1,166,004	Rochester, N. Y.....	398,348	98,978	308,527
Syracuse, N. Y.....	266,130	116,700	263,130	Syracuse, N. Y.....	291,949	123,673	279,163
Toledo, Ohio.....	327,642	163,260	483,000	Waterbury, Conn.....	277,293	246,629	512,773
Williamsport, Pa.....	709,847	260,180	663,410	Worcester, Mass.....	289,049	70,700	264,489
<b>Galvanizing.</b>				<b>Hardware, Saddlery.</b>			
Chicago, Ill.....	230,500	353,592	421,000	Newark, N. J.....	1,629,283	650,836	1,713,769
Philadelphia, Pa.....	615,216	785,036	1,066,079	<b>Hat and Cap Materials.</b>			
<b>Gas and Lamp Fixtures.</b>				New York, N. Y.....	450,467	476,123	806,219
Boston, Mass.....	387,125	117,443	349,000	<b>Hats and Caps, not in- cluding wool hats.</b>			
Brooklyn, N. Y.....	1,890,306	339,346	1,717,458	Baltimore, Md.....	1,239,457	607,580	1,261,523
Chicago, Ill.....	775,902	138,561	352,650	Boston, Mass.....	831,352	364,347	931,621
New York, N. Y.....	4,257,001	744,529	2,759,370	Brooklyn, N. Y.....	922,543	649,635	2,031,519
Philadelphia, Pa.....	1,543,635	463,738	1,489,310	Chicago, Ill.....	319,872	112,276	327,925
<b>Gas, illuminating and heating.</b>				Milwaukee, Wis.....	273,466	188,148	363,496
Boston, Mass.....	15,933,601	1,023,692	3,230,506	Newark, N. J.....	1,599,409	1,422,022	3,506,976
Brooklyn, N. Y.....	3,762,064	775,553	3,057,527	New York, N. Y.....	3,651,563	3,308,073	6,777,183
Chicago, Ill.....	41,043,546	3,635,586	4,319,687	Philadelphia, Pa.....	3,048,022	1,507,271	3,383,220
New York, N. Y.....	58,026,169	3,541,276	12,672,968	Yonkers, N. Y.....	887,915	719,449	1,741,544
Pittsburg, Pa.....	2,980,156	57,991	376,389	<b>Hosiery and Knit Goods.</b>			
<b>Gas Machines and Me- ters.</b>				Boston, Mass.....	226,213	142,530	402,507
Philadelphia, Pa.....	1,077,691	278,824	818,062	Brooklyn, N. Y.....	727,750	443,667	887,336
<b>Gas Stoves.</b>				Chicago, Ill.....	502,640	271,615	596,977
Cleveland, Ohio.....	485,335	371,160	960,000	Cincinnati, Ohio.....	651,670	403,120	750,875
<b>Glass.</b>				Cohoes, N. Y.....	4,373,536	2,798,577	5,058,882
Baltimore, Md.....	737,611	239,123	1,009,047	Lowell, Mass.....	776,797	331,591	731,413
Brooklyn, N. Y.....	1,094,596	268,904	1,041,461	Milwaukee, Wis.....	978,823	617,520	1,114,025
New Albany, Ind.....	1,645,000	343,343	1,117,000	New York, N. Y.....	1,139,508	673,140	1,447,198
Philadelphia, Pa.....	1,907,619	391,957	1,718,016	Pawtucket, R. I.....	667,809	543,532	745,712
Pittsburg, Pa.....	7,335,619	1,910,064	6,176,076	Philadelphia, Pa.....	8,323,866	7,710,256	14,932,981
St. Louis, Mo.....	2,201,353	557,874	1,215,329	Providence, R. I.....	318,250	256,004	497,100
Toledo, Ohio.....	246,990	61,532	281,500	Rockford, Ill.....	817,086	544,666	1,026,221
Wheeling, W. Va.....	629,013	162,839	613,234	Toledo, Ohio.....	204,300	194,423	237,445
<b>Glass Cutting, Staining, and Ornamenting.</b>				Troy, N. Y.....	699,500	456,373	846,542
Boston, Mass.....	441,233	150,670	441,346	Utica, N. Y.....	608,108	360,851	715,178
Brooklyn, N. Y.....	276,562	91,140	337,003	<b>House-furnish'g Goods not elsewhere speci- fied.</b>			
Chicago, Ill.....	606,108	280,790	817,666	Chicago, Ill.....	255,950	343,100	452,834
New York, N. Y.....	1,622,999	789,588	2,166,115	New York, N. Y.....	943,155	528,831	1,004,823
Philadelphia, Pa.....	364,403	162,185	480,804	Philadelphia, Pa.....	251,067	276,354	411,041
<b>Gloves and Mittens.</b>				<b>Ice, artificial.</b>			
New York, N. Y.....	433,450	193,676	570,144	Baltimore, Md.....	597,175	13,614	54,144
San Francisco, Cal.....	780,775	308,003	696,550	Cincinnati, Ohio.....	224,200	41,800	207,000
<b>Glue.</b>				New Orleans, La.....	739,000	87,020	365,430
New York, N. Y.....	249,466	294,129	413,294	Philadelphia, Pa.....	286,850	12,059	118,990
<b>Gold and Silver, leaf and foil.</b>				Portland, Ore.....	265,000	22,900	135,000
New York, N. Y.....	391,685	466,735	951,356	San Antonio, Texas.....	227,100	26,015	105,875
Philadelphia, Pa.....	625,395	635,580	986,472	<b>Ink, printing.</b>			
				Brooklyn, N. Y.....	476,650	159,135	273,000
				Cincinnati, Ohio.....	267,900	318,460	633,000



CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
New York, N. Y. ....	\$215,548	\$98,220	\$235,700	<b>Jewelry and Instru- ment Cases.</b>			
Philadelphia, Pa. ....	635,100	256,677	503,277	New York, N. Y. ....	\$648,207	\$254,152	\$807,546
<b>Ink, writing.</b>				<b>Jewelry.</b>			
Boston, Mass. ....	259,275	96,617	292,050	Baltimore, Md. ....	302,795	138,658	260,650
New York, N. Y. ....	411,155	173,878	308,585	Boston, Mass. ....	595,571	256,612	661,300
<b>Instruments, profes- sional and scien- tific.</b>				Brooklyn, N. Y. ....	664,434	963,682	1,323,234
Boston, Mass. ....	240,722	43,411	189,746	Chicago, Ill. ....	604,875	439,529	873,000
New York, N. Y. ....	1,061,866	143,867	827,589	Cincinnati, Ohio. ....	1,187,750	848,175	1,317,000
Philadelphia, Pa. ....	753,345	153,650	720,879	Cleveland, Ohio. ....	241,250	104,571	249,976
<b>Iron and Steel.</b>				Newark, N. J. ....	3,949,385	2,322,013	4,631,500
Allegheny, Pa. ....	4,755,162	2,491,187	4,476,753	New York, N. Y. ....	4,217,212	2,925,100	5,605,634
Allentown, Pa. ....	1,607,845	1,016,279	1,475,827	Philadelphia, Pa. ....	2,473,648	1,856,712	3,139,596
Baltimore, Md. ....	532,650	401,488	564,963	Providence, R. I. ....	7,189,131	3,220,702	7,801,003
Birmingham, Ala. ....	1,558,975	745,779	1,618,201	St. Louis, Mo. ....	270,760	158,298	385,040
Chicago, Ill. ....	23,388,264	19,217,414	24,317,831	San Francisco, Cal. ....	723,028	1,093,976	1,512,571
Cleveland, Ohio. ....	9,744,473	10,489,997	15,472,199	<b>Jute and Jute Goods.</b>			
Detroit, Mich. ....	2,143,352	1,649,580	2,432,493	Paterson, N. J. ....	1,310,398	245,426	575,980
Harrisburg, Pa. ....	2,058,875	2,019,407	2,386,085	<b>Kaolin and other earth grinding.</b>			
New Albany, Ind. ....	1,120,104	669,855	1,178,469	Brooklyn, N. Y. ....	257,400	69,185	197,800
Newark, N. J. ....	1,394,363	726,967	1,245,426	New York, N. Y. ....	570,825	188,454	365,036
Philadelphia, Pa. ....	4,437,992	2,624,701	5,022,312	Philadelphia, Pa. ....	419,276	227,793	386,351
Pittsburg, Pa. ....	48,277,434	29,096,574	49,718,729	<b>Kindling Wood.</b>			
Reading, Pa. ....	2,164,356	2,058,320	2,735,155	Brooklyn, N. Y. ....	480,932	370,312	658,905
St. Louis, Mo. ....	1,995,475	1,114,484	1,715,627	New York, N. Y. ....	576,227	396,297	695,927
Scranton, Pa. ....	8,840,706	10,716,206	13,278,299	<b>Labels and Tags.</b>			
Troy, N. Y. ....	4,721,977	3,703,474	5,860,667	New York, N. Y. ....	311,075	116,932	295,400
Wheeling, W. Va. ....	1,423,337	1,480,566	2,176,186	<b>Lamps and Reflectors.</b>			
Wilmington, Del. ....	2,035,502	1,170,330	1,896,660	New York, N. Y. ....	1,256,603	430,483	1,582,723
Youngstown, Ohio. ....	4,946,104	6,332,311	9,676,050	Philadelphia, Pa. ....	514,807	135,236	261,355
<b>Iron and Steel, bolts, nuts, washers, and rivets.</b>				Rochester, N. Y. ....	306,980	189,552	406,307
Buffalo, N. Y. ....	525,750	395,850	607,000	Trenton, N. J. ....	234,491	284,202	482,300
Cleveland, Ohio. ....	1,124,920	1,124,405	1,648,170	<b>Lard, refined.</b>			
New York, N. Y. ....	260,204	151,447	387,038	New York, N. Y. ....	1,137,445	5,990,155	6,615,452
Philadelphia, Pa. ....	1,690,871	844,028	1,543,823	<b>Lead, bar, pipe, and sheet.</b>			
Pittsburg, Pa. ....	332,344	310,741	427,911	Boston, Mass. ....	914,054	799,509	1,010,786
<b>Iron and Steel, forging</b>				Chicago, Ill. ....	962,464	2,447,381	2,584,200
Brooklyn, N. Y. ....	276,744	76,788	261,377	New York, N. Y. ....	1,307,664	1,421,814	1,802,565
Buffalo, N. Y. ....	812,651	469,614	946,122	<b>Leather, dressed skins.</b>			
Chicago, Ill. ....	775,800	364,523	657,400	Newark, N. J. ....	312,345	433,647	602,790
Cleveland, Ohio. ....	1,099,765	709,783	1,146,250	<b>Leather Goods.</b>			
Philadelphia, Pa. ....	227,442	148,125	298,738	Brooklyn, N. Y. ....	475,494	437,443	821,219
<b>Iron and Steel, nails and spikes, cut and wrought, including wire nails.</b>				Chicago, Ill. ....	450,447	177,315	410,797
Chicago, Ill. ....	923,704	450,355	849,709	New York, N. Y. ....	1,235,225	949,706	1,303,542
Philadelphia, Pa. ....	419,309	438,634	670,427	Philadelphia, Pa. ....	627,245	504,332	1,010,643
Pittsburg, Pa. ....	1,658,629	1,899,363	2,560,094	<b>Leather, morocco.</b>			
Taunton, Mass. ....	543,925	362,825	575,720	Brooklyn, N. Y. ....	659,908	798,479	1,125,000
Wheeling, W. Va. ....	1,789,034	1,891,287	2,523,608	Lynn, Mass. ....	1,965,756	2,069,497	3,430,036
Worcester, Mass. ....	280,700	172,090	235,000	Philadelphia, Pa. ....	5,432,413	7,725,719	10,840,198
<b>Iron and Steel Pipe, wrought.</b>				Wilmington, Del. ....	2,002,542	2,752,680	4,015,694
Pittsburg, Pa. ....	3,829,538	4,121,382	5,992,395	<b>Leather, patent and enameled.</b>			
<b>Ironwork, architectur- al and ornamental.</b>				Newark, N. J. ....	3,724,526	3,186,636	5,430,161
Boston, Mass. ....	726,048	554,733	1,113,591	<b>Leather, tanned and curried.</b>			
Brooklyn, N. Y. ....	1,023,045	1,036,416	1,969,401	Allegheny, Pa. ....	2,015,776	2,693,748	3,418,578
Buffalo, N. Y. ....	233,050	313,998	441,700	Baltimore, Md. ....	227,288	335,798	455,818
Chicago, Ill. ....	3,548,453	2,345,209	5,018,159	Boston, Mass. ....	249,206	394,534	586,327
Cincinnati, Ohio. ....	613,360	371,523	896,202	Brooklyn, N. Y. ....	618,989	577,275	849,181
Dayton, Ohio. ....	255,905	193,339	322,650	Buffalo, N. Y. ....	2,009,816	1,698,625	2,390,400
Indianapolis, Ind. ....	211,804	159,275	346,627	Chicago, Ill. ....	4,763,250	5,144,914	7,395,371
Kansas City, Mo. ....	274,660	123,509	336,500	Cincinnati, Ohio. ....	3,352,685	3,139,687	4,142,545
Louisville, Ky. ....	617,541	416,141	776,320	Detroit, Mich. ....	571,350	453,748	643,440
Milwaukee, Wis. ....	608,335	344,718	601,432	Louisville, Ky. ....	2,373,204	2,334,176	3,139,778
Minneapolis, Minn. ....	335,419	602,080	887,730	Milwaukee, Wis. ....	4,957,094	6,712,113	8,429,314
New York, N. Y. ....	3,462,441	2,593,533	5,502,303	New Albany, Ind. ....	225,558	457,634	586,940
Philadelphia, Pa. ....	1,330,239	879,748	1,852,212	Newark, N. J. ....	1,050,649	1,588,894	2,276,716
Pittsburg, Pa. ....	347,836	360,968	627,228	New York, N. Y. ....	632,450	885,627	1,214,150
St. Louis, Mo. ....	1,828,148	880,039	2,023,526	Philadelphia, Pa. ....	1,373,315	1,235,112	1,842,099
San Francisco, Cal. ....	621,675	359,109	733,717	Racine, Wis. ....	210,825	592,705	706,000
Washington, D. C. ....	425,455	250,936	464,360	St. Louis, Mo. ....	744,953	1,104,737	1,502,630
<b>Ivory and Bone Work.</b>				Salem, Mass. ....	1,194,103	1,279,366	1,835,341
New York, N. Y. ....	1,018,259	293,504	636,444	San Francisco, Cal. ....	1,585,331	2,170,392	2,918,419
Philadelphia, Pa. ....	300,459	128,311	330,116	Williamsport, Pa. ....	564,541	552,557	741,143
				Worcester, Mass. ....	223,205	397,959	487,243

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
<b>Lime and Cement.</b>				<b>Lock and Gunsmithing.</b>			
Buffalo, N. Y.....	\$1,014,895	\$54,170	\$229,668	New York, N. Y.....	\$605,100	\$168,676	\$595,007
Chicago, Ill.....	585,101	48,727	858,194	Philadelphia, Pa.....	350,095	63,215	248,530
Kingston, N. Y.....	293,797	153,651	399,254	<b>Looking-glass and Pic- ture Frames.</b>			
Milwaukee, Wis.....	868,145	43,620	192,269	Baltimore, Md.....	816,652	513,147	941,066
Newark, N. J.....	346,800	118,773	246,770	Boston, Mass.....	936,095	381,330	829,161
<b>Liquors, Distilled.</b>				Buffalo, N. Y.....	409,565	140,613	255,530
Baltimore, Md.....	1,421,225	683,861	2,513,560	Chicago, Ill.....	1,733,511	1,042,324	2,517,417
Chicago, Ill.....	2,290,000	952,916	8,030,863	Cincinnati, Ohio.....	915,740	381,692	982,309
Cincinnati, Ohio.....	1,935,478	2,420,977	11,471,673	Cleveland, Ohio.....	320,647	119,965	467,774
Louisville, Ky.....	1,743,228	808,462	2,305,696	Detroit, Mich.....	245,524	87,074	255,813
<b>Liquors, Malt.</b>				New York, N. Y.....	2,923,553	1,453,964	3,273,921
Albany, N. Y.....	2,981,631	711,215	2,079,617	Philadelphia, Pa.....	1,302,019	428,465	1,041,556
Allegheny, Pa.....	1,092,663	807,534	1,179,664	Pittsburg, Pa.....	210,615	86,183	179,730
Allentown, Pa.....	252,667	82,462	169,000	Rochester, N. Y.....	314,715	209,198	517,000
Auburn, N. Y.....	492,100	33,410	103,736	St. Louis, Mo.....	549,879	209,429	522,169
Baltimore, Md.....	4,455,671	1,221,136	3,429,657	San Francisco, Cal.....	565,500	96,030	310,864
Boston, Mass.....	5,582,126	1,776,607	4,599,142	Toledo, Ohio.....	201,265	76,590	185,070
Bridgeport, Conn.....	319,289	102,891	249,000	<b>Lumber and other mill products from logs or bolts.</b>			
Brooklyn, N. Y.....	12,895,172	4,412,068	12,004,529	Bay City, Mich.....	6,713,293	2,611,892	4,300,053
Buffalo, N. Y.....	5,357,413	1,235,656	8,274,376	Binghamton, N. Y.....	425,449	203,130	346,888
Chicago, Ill.....	16,203,113	3,415,306	10,223,718	Burlington, Iowa.....	630,760	418,086	669,159
Cincinnati, Ohio.....	12,115,118	2,400,317	7,454,417	Camden, N. J.....	601,264	247,141	843,032
Cleveland, Ohio.....	3,708,045	897,791	3,011,555	Chattanooga, Tenn.....	1,111,100	448,829	817,603
Davenport, Iowa.....	443,700	83,459	279,700	Chicago, Ill.....	271,000	161,025	300,750
Dayton, Ohio.....	909,375	248,940	619,148	Cincinnati, Ohio.....	1,523,676	847,097	1,462,278
Detroit, Mich.....	2,180,612	506,145	1,506,799	Cleveland, Ohio.....	426,350	255,700	372,500
Dubuque, Iowa.....	385,729	144,523	317,325	Davenport, Iowa.....	2,026,983	1,353,567	1,729,607
Erie, Pa.....	405,646	173,540	346,449	Dayton, Ohio.....	397,758	152,410	392,291
Grand Rapids, Mich.....	413,802	87,419	247,795	Detroit, Mich.....	1,297,292	487,740	897,954
Hartford, Conn.....	261,571	148,251	304,699	Dubuque, Iowa.....	1,474,171	901,631	1,281,930
Jersey City, N. J.....	537,695	102,037	259,498	Evansville, Ind.....	1,597,250	965,952	1,599,885
Lacrosse, Wis.....	799,837	235,385	611,337	Fort Wayne, Ind.....	360,900	191,045	846,750
Lancaster, Pa.....	279,000	101,228	256,000	Grand Rapids, Mich.....	1,948,561	739,509	1,306,373
Louisville, Ky.....	2,349,991	617,421	2,003,822	Indianapolis, Ind.....	235,450	301,151	622,950
Milwaukee, Wis.....	13,058,627	3,567,849	10,810,695	Lacrosse, Wis.....	6,208,749	2,255,596	3,570,522
Minneapolis, Minn.....	1,132,049	261,735	686,000	Louisville, Ky.....	819,700	431,608	940,926
Newark, N. J.....	5,490,473	2,496,796	6,901,297	Memphis, Tenn.....	522,083	462,800	815,915
New Orleans, La.....	3,198,082	592,562	1,905,760	Minneapolis, Minn.....	8,577,304	4,594,257	7,215,293
New York, N. Y.....	29,764,469	8,187,430	23,926,955	Mobile, Ala.....	1,125,740	812,051	1,589,499
Omaha, Neb.....	1,231,680	299,401	865,993	Muskegon, Mich.....	7,417,765	2,507,371	4,115,034
Paterson, N. J.....	1,865,889	432,939	1,292,247	Nashville, Tenn.....	1,369,000	992,260	1,595,120
Peoria, Ill.....	874,496	115,177	424,273	New Haven, Conn.....	268,453	183,505	239,280
Philadelphia, Pa.....	16,589,750	3,694,153	10,506,692	New Orleans, La.....	1,087,430	850,576	1,406,177
Pittsburg, Pa.....	2,947,720	679,928	2,290,923	New York, N. Y.....	1,587,155	683,741	1,153,767
Portland, Ore.....	673,965	143,563	533,348	Norfolk, Va.....	776,202	363,141	704,953
Poughkeepsie, N. Y.....	412,200	45,524	113,825	Oshkosh, Wis.....	3,125,396	2,514,903	3,904,550
Quincy, Ill.....	580,504	140,679	393,140	Philadelphia, Pa.....	694,663	494,183	652,856
Reading, Pa.....	569,100	132,315	863,570	Pittsburg, Pa.....	292,758	215,260	354,500
Rochester, N. Y.....	6,457,784	1,172,000	3,064,930	Portland, Ore.....	1,261,569	434,320	949,007
Sacramento, Cal.....	465,715	92,871	283,696	Rochester, N. Y.....	512,525	166,655	318,100
Saginaw, Mich.....	230,300	62,655	199,192	Saginaw, Mich.....	6,709,843	2,438,296	3,794,605
St. Joseph, Mo.....	383,557	115,951	297,810	St. Louis, Mo.....	2,886,262	875,632	1,689,831
St. Louis, Mo.....	15,925,617	6,289,053	16,185,560	Seattle, Wash.....	1,369,126	787,150	1,572,590
St. Paul, Minn.....	1,437,950	227,459	783,840	Tacoma, Wash.....	3,774,800	1,359,638	2,794,043
San Antonio, Texas.....	922,500	278,507	903,727	Toledo, Ohio.....	829,600	222,775	835,828
San Francisco, Cal.....	4,642,143	919,735	2,896,054	Williamsport, Pa.....	6,729,544	2,318,396	3,843,731
Scranton, Pa.....	471,700	289,580	593,390	Wilmington, N. C.....	253,000	161,100	290,500
Seattle, Wash.....	722,000	236,250	564,400	<b>Lumber, Planing-mill Products, including sash, doors, and blinds.</b>			
Syracuse, N. Y.....	1,753,008	581,115	1,535,935	Akron, Ohio.....	377,749	192,465	344,100
Toledo, Ohio.....	1,795,757	635,230	1,605,359	Albany, N. Y.....	404,686	200,751	395,034
Troy, N. Y.....	1,760,934	353,214	1,192,137	Allegheny, Pa.....	553,285	427,906	786,899
Utica, N. Y.....	413,246	164,056	491,001	Altoona, Pa.....	297,226	222,039	425,670
Washington, D. C.....	1,174,191	295,017	853,800	Atlanta, Ga.....	525,476	381,990	777,124
Wheeling, W. Va.....	838,503	318,659	785,402	Augusta, Ga.....	233,711	147,150	283,900
Wilmington, Del.....	456,876	100,608	247,046	Baltimore, Md.....	1,837,146	1,730,289	2,902,788
<b>Liquors, Vinous.</b>				Bay City, Mich.....	306,192	368,539	571,195
Los Angeles, Cal.....	372,210	66,244	141,279	Birmingham, Ala.....	244,610	181,260	345,330
St. Louis, Mo.....	436,040	68,803	203,300	Boston, Mass.....	2,270,486	1,463,335	2,796,756
San Francisco, Cal.....	1,135,935	420,031	837,550	Brooklyn, N. Y.....	3,681,377	3,324,949	5,930,829
<b>Lithographing and En- graving.</b>				Buffalo, N. Y.....	3,027,448	1,988,931	3,918,819
Baltimore, Md.....	385,800	98,731	816,352	Cambridge, Mass.....	229,673	198,156	384,470
Boston, Mass.....	1,291,458	443,519	1,291,101	Camden, N. J.....	341,265	332,245	509,000
Brooklyn, N. Y.....	255,237	69,407	219,933	Charleston, S. C.....	228,426	249,871	444,833
Buffalo, N. Y.....	1,244,957	464,007	1,480,862	Chattanooga, Tenn.....	760,654	457,605	821,862
Chicago, Ill.....	923,510	300,740	951,785	Chicago, Ill.....	10,311,036	10,195,546	17,604,494
Cincinnati, Ohio.....	1,883,193	537,843	1,543,991	Cincinnati, Ohio.....	1,361,290	1,653,710	2,937,596
Milwaukee, Wis.....	467,227	113,988	409,866	Cleveland, Ohio.....	1,325,932	1,356,339	2,208,997
New York, N. Y.....	6,946,574	2,335,660	6,283,779	Columbus, Ohio.....	367,087	365,422	507,029
Philadelphia, Pa.....	1,831,336	593,263	1,578,619				
Rochester, N. Y.....	400,275	130,635	301,870				
St. Louis, Mo.....	239,700	70,448	244,275				
San Francisco, Cal.....	516,909	132,484	367,583				
Washington, D. C.....	267,544	161,747	315,977				



CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Dayton, Ohio.....	\$484,174	\$265,195	\$574,182	Detroit, Mich.....	\$322,302	\$216,374	\$550,818
Denver, Col.....	1,967,315	2,463,760	4,017,362	Kansas City, Mo.....	890,714	134,622	411,181
Detroit, Mich.....	1,617,729	1,810,248	2,281,102	Long Island City, N. Y.	303,222	106,815	370,000
Duquque, Iowa.....	682,282	508,500	980,000	Louisville, Ky.....	380,525	242,852	561,570
Elmira, N. Y.....	888,636	490,329	800,526	Milwaukee, Wis.....	265,600	96,072	243,681
Erie, Pa.....	714,915	456,391	740,765	Minneapolis, Minn.....	211,689	246,415	544,933
Evansville, Ind.....	814,627	298,279	535,650	Newark, N. J.....	324,600	161,915	504,200
Grand Rapids, Mich.....	625,410	656,554	1,018,122	New York, N. Y.....	5,325,020	3,249,647	8,080,659
Holyoke, Mass.....	396,027	230,100	368,675	Omaha, Neb.....	251,900	122,840	814,000
Houston, Tex.....	127,456	303,590	522,680	Philadelphia, Pa.....	1,898,766	1,848,645	2,970,579
Indianapolis, Ind.....	480,083	264,242	555,400	St. Louis, Mo.....	820,574	581,769	1,186,060
Jackson, Mich.....	205,126	139,355	215,968	San Francisco, Cal.....	476,855	306,956	622,447
Jersey City, N. J.....	508,775	457,476	698,250	Washington, D. C.....	582,799	375,701	803,468
Kansas City, Mo.....	929,206	667,790	1,151,280	<b>Masonry, brick and stone.</b>			
Lacrosse, Wis.....	540,134	245,996	379,587	Allegheny, Pa.....	287,361	328,829	719,229
Little Rock, Ark.....	210,425	177,460	324,000	Baltimore, Md.....	3,078,711	5,277,026	10,190,072
Los Angeles, Cal.....	278,496	135,666	340,166	Binghamton, N. Y.....	306,024	693,094	1,239,093
Louisville, Ky.....	1,071,173	671,223	1,256,793	Boston, Mass.....	3,599,614	4,323,551	8,824,101
Lowell, Mass.....	289,271	542,082	765,924	Bridgeport, Conn.....	281,755	446,347	976,595
Manchester, N. H.....	251,563	153,543	299,877	Brooklyn, N. Y.....	1,506,669	2,895,048	5,848,090
Memphis, Tenn.....	560,125	398,372	757,633	Buffalo, N. Y.....	1,107,520	1,682,485	3,722,779
Milwaukee, Wis.....	1,518,081	1,434,246	2,360,659	Chicago, Ill.....	2,741,690	7,523,862	13,086,157
Minneapolis, Minn.....	2,188,093	1,233,504	2,411,682	Cincinnati, Ohio.....	2,095,966	2,684,765	6,459,003
Muskegon, Mich.....	345,597	382,694	602,541	Cleveland, Ohio.....	556,110	612,323	1,457,074
Nashville, Tenn.....	215,085	359,364	622,300	Detroit, Mich.....	264,678	603,706	1,385,341
Newark, N. J.....	654,181	624,688	1,123,087	Duluth, Minn.....	327,808	265,501	680,635
New Haven, Conn.....	639,089	570,461	995,710	Fort Worth, Texas.....	367,750	455,921	1,024,652
New Orleans, La.....	907,595	537,647	1,093,451	Hartford, Conn.....	516,800	792,480	1,149,000
New York, N. Y.....	5,657,668	3,612,058	7,012,384	Hohoken, N. J.....	257,205	141,904	383,500
Oakland, Cal.....	564,596	490,689	995,996	Jersey City, N. J.....	209,086	166,903	553,669
Omaha, Neb.....	405,722	363,758	865,000	Kansas City, Mo.....	496,635	1,484,695	2,949,221
Oswego, N. Y.....	285,702	174,115	275,024	Lynn, Mass.....	228,834	322,371	1,008,379
Peoria, Ill.....	343,132	230,339	412,902	Manchester, N. H.....	337,660	105,717	259,550
Philadelphia, Pa.....	3,499,952	2,162,363	4,275,732	Milwaukee, Wis.....	647,390	1,163,406	2,216,357
Pittsburg, Pa.....	1,438,226	1,160,753	1,947,078	Minneapolis, Minn.....	1,168,440	2,941,877	4,740,966
Portland, Ore.....	530,450	377,300	745,520	Newark, N. J.....	378,461	717,886	1,894,977
Providence, R. I.....	316,800	112,027	209,431	New Haven, Conn.....	376,700	315,600	886,977
Quincy, Ill.....	271,770	207,785	293,700	Newport, Ky.....	446,380	436,450	965,700
Reading, Pa.....	327,420	197,192	396,500	New York, N. Y.....	1,201,318	1,647,905	4,222,860
Richmond, Va.....	392,921	208,568	419,058	Philadelphia, Pa.....	7,021,210	10,525,867	23,631,669
Rochester, N. Y.....	1,281,668	731,954	1,413,745	Pittsburg, Pa.....	644,927	737,858	1,514,632
Saginaw, Mich.....	997,055	1,155,110	1,636,950	Portland, Ore.....	939,700	1,478,385	2,980,810
St. Louis, Mo.....	2,134,341	1,571,142	3,061,178	Richmond, Va.....	207,620	240,064	564,545
St. Paul, Minn.....	1,617,336	889,549	1,727,566	Rochester, N. Y.....	1,035,277	1,818,735	3,370,265
Salt Lake, Utah.....	502,096	225,941	515,100	St. Louis, Mo.....	4,705,498	4,558,728	9,122,952
San Francisco, Cal.....	1,251,451	708,922	1,685,354	St. Paul, Minn.....	1,650,995	2,700,456	5,609,202
Savannah, Ga.....	297,309	179,656	439,923	San Francisco, Cal.....	292,950	478,791	799,080
Scranton, Pa.....	429,536	326,985	661,100	Sioux City, Iowa.....	210,500	374,130	660,250
Seattle, Wash.....	211,120	428,840	873,500	Springfield, Mass.....	200,991	514,020	923,473
Syracuse, N. Y.....	610,435	321,570	677,353	Trenton, N. J.....	475,500	928,201	1,708,243
Tacoma, Wash.....	253,275	153,900	327,296	Washington, D. C.....	226,070	700,825	1,330,345
Toledo, Ohio.....	449,660	664,093	961,925	Worcester, Mass.....	306,624	509,921	1,037,386
Washington, D. C.....	740,000	372,960	747,000	Yonkers, N. Y.....	1,781,957	915,238	2,248,387
Wheeling, W. Va.....	270,178	240,463	389,696	<b>Mats and Matting.</b>			
Williamsport, Pa.....	254,736	203,729	373,666	Brooklyn, N. Y.....	348,200	252,480	474,297
Wilmington, Del.....	257,927	65,625	173,442	<b>Mattresses and Spring Beds.</b>			
Worcester, Mass.....	606,300	339,046	630,571	Atlanta, Ga.....	203,625	206,150	344,000
<b>Malt.</b>				Boston, Mass.....	664,155	611,744	3,083,889
Albany, N. Y.....	753,803	498,492	727,198	Chicago, Ill.....	1,258,979	1,278,728	2,061,336
Baltimore, Md.....	469,317	287,346	395,517	Milwaukee, Wis.....	314,320	349,674	541,002
Buffalo, N. Y.....	3,483,780	2,680,417	3,614,885	New York, N. Y.....	1,158,151	983,253	1,725,988
Chicago, Ill.....	4,637,200	3,009,550	4,329,100	Philadelphia, Pa.....	628,360	570,948	1,050,702
Cincinnati, Ohio.....	999,418	696,911	898,082	<b>Millinery and Lace Goods.</b>			
Cleveland, Ohio.....	317,910	220,731	267,500	Boston, Mass.....	598,204	455,281	779,599
Detroit, Mich.....	443,244	440,844	596,919	Brooklyn, N. Y.....	499,495	324,924	644,160
Louisville, Ky.....	373,200	300,469	410,590	Chicago, Ill.....	526,100	286,548	664,930
Milwaukee, Wis.....	2,192,393	1,649,903	2,174,830	New York, N. Y.....	6,565,403	4,300,837	10,086,201
New York, N. Y.....	3,323,592	1,568,117	2,119,766	Philadelphia, Pa.....	718,110	407,826	863,940
Oswego, N. Y.....	802,000	542,327	730,140	<b>Millinery, custom work.</b>			
Philadelphia, Pa.....	955,172	411,728	562,462	Albany, N. Y.....	292,639	121,336	238,756
St. Louis, Mo.....	1,008,018	499,992	725,924	Allegheny, Pa.....	271,823	84,120	198,250
San Francisco, Cal.....	550,025	374,233	521,710	Baltimore, Md.....	540,713	292,223	627,918
<b>Mantels, slate, marble, and marbleized.</b>				Boston, Mass.....	2,122,406	563,242	1,242,286
Brooklyn, N. Y.....	221,040	173,062	334,977	Brooklyn, N. Y.....	984,559	470,841	997,554
Chicago, Ill.....	386,560	246,612	582,260	Buffalo, N. Y.....	565,280	208,252	410,369
Cincinnati, Ohio.....	261,808	150,690	348,215	Chicago, Ill.....	2,145,396	920,641	1,954,076
New York, N. Y.....	341,071	190,784	461,400	Cincinnati, Ohio.....	819,375	300,101	649,226
Philadelphia, Pa.....	277,850	104,539	365,818	Cleveland, Ohio.....	273,923	133,093	298,027
<b>Marble and Stone Work.</b>				Denver, Col.....	261,310	105,733	228,250
Baltimore, Md.....	1,123,648	581,502	1,391,323	Indianapolis, Ind.....	238,118	119,294	235,204
Boston, Mass.....	1,227,540	440,488	1,374,669	Lawrence, Mass.....	209,106	71,180	160,141
Brooklyn, N. Y.....	1,448,614	872,066	2,189,043				
Buffalo, N. Y.....	350,237	333,034	767,317				
Cincinnati, Ohio.....	555,084	294,466	719,728				

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Louisville, Ky.....	\$429,929	\$154,368	\$294,095	Philadelphia, Pa.....	\$238,500	\$127,759	\$254,800
Lowell, Mass.....	317,502	112,943	225,591	St. Louis, Mo.....	230,805	166,106	350,170
Milwaukee, Wis.....	410,687	162,624	334,469	San Francisco, Cal.....	301,811	227,170	406,529
Minneapolis, Minn.....	321,839	196,309	377,692	<b>Oleomargarine.</b>			
New Orleans, La.....	424,645	169,877	350,813	Chicago, Ill.....	570,400	1,314,300	1,864,800
New York, N. Y.....	3,291,383	1,249,032	2,787,186	<b>Optical Goods.</b>			
Philadelphia, Pa.....	1,621,303	722,118	1,575,469	Boston, Mass.....	396,421	80,143	290,110
Pittsburg, Pa.....	340,793	165,617	325,166	New York, N. Y.....	847,846	267,362	393,630
Providence, R. I.....	252,520	122,947	227,353	Philadelphia, Pa.....	207,030	33,384	120,027
St. Louis, Mo.....	559,091	235,691	553,972	<b>Oysters, canning and preserving.</b>			
St. Paul, Minn.....	416,360	150,751	323,180	Baltimore, Md.....	938,257	1,855,043	2,794,247
San Francisco, Cal.....	914,206	278,117	666,891	<b>Painting and Paper Hanging.</b>			
Trenton, N. J.....	247,196	73,813	193,120	Baltimore, Md.....	728,206	407,332	1,336,000
Troy, N. Y.....	325,227	121,775	217,260	Bridgeport, Conn.....	234,810	168,774	491,106
Utica, N. Y.....	217,030	160,050	267,600	Brooklyn, N. Y.....	2,257,257	1,123,610	4,116,793
Washington, D. C.....	392,970	206,479	438,922	Buffalo, N. Y.....	1,240,491	723,611	1,925,073
<b>Mineral and Soda Wa- ters.</b>				Cambridge, Mass.....	202,895	98,193	356,800
Boston, Mass.....	290,035	115,503	292,098	Chicago, Ill.....	3,011,237	1,764,287	4,932,627
Brooklyn, N. Y.....	679,127	266,348	776,726	Cincinnati, Ohio.....	1,409,048	841,631	2,662,599
Chicago, Ill.....	662,825	164,602	679,923	Cleveland, Ohio.....	412,233	302,138	820,301
Newark, N. J.....	264,124	71,252	225,097	Covington, Ky.....	261,500	270,332	643,590
New York, N. Y.....	1,754,302	713,995	2,223,221	Detroit, Mich.....	834,171	240,643	714,978
Philadelphia, Pa.....	355,013	133,309	333,575	Kansas City, Mo.....	251,242	249,723	813,763
St. Louis, Mo.....	453,032	124,562	454,358	Louisville, Ky.....	336,123	159,366	510,031
San Francisco, Cal.....	370,456	54,301	264,356	Milwaukee, Wis.....	460,002	292,197	945,973
<b>Mirrors.</b>				Minneapolis, Minn.....	625,169	325,486	1,157,938
Chicago, Ill.....	399,350	226,183	573,338	Newark, N. J.....	339,434	189,633	308,190
New York, N. Y.....	2,154,333	2,772,620	4,954,250	New Haven, Conn.....	201,995	96,955	336,177
<b>Monuments and Tomb- stones.</b>				New York, N. Y.....	4,043,048	2,055,061	7,930,462
Brooklyn, N. Y.....	528,009	180,500	520,200	Philadelphia, Pa.....	4,132,342	2,165,627	6,922,738
Chicago, Ill.....	210,570	94,501	213,950	Pittsburg, Pa.....	312,461	95,403	445,778
Cincinnati, Ohio.....	265,954	84,601	280,910	Portland, Ore.....	220,800	272,660	651,725
Milwaukee, Wis.....	305,873	167,113	388,480	Providence, R. I.....	279,076	151,475	588,479
New York, N. Y.....	933,641	340,995	967,335	Rochester, N. Y.....	440,988	271,283	667,620
Philadelphia, Pa.....	652,696	293,658	763,173	St. Louis, Mo.....	1,568,754	872,276	2,841,041
St. Louis, Mo.....	337,315	147,506	355,417	St. Paul, Minn.....	394,321	203,659	643,155
Washington, D. C.....	216,275	43,914	153,500	San Francisco, Cal.....	630,052	373,866	1,309,358
<b>Mucilage and Paste.</b>				Washington, D. C.....	1,108,050	629,426	1,671,914
Gloucester, Mass.....	256,363	124,302	227,666	Yonkers, N. Y.....	238,679	88,073	389,369
<b>Musical Instruments and Materials not specified.</b>				<b>Paints.</b>			
Chicago, Ill.....	387,595	75,493	239,960	Allegheny, Pa.....	2,033,664	842,503	1,382,071
New York, N. Y.....	392,921	106,236	353,512	Baltimore, Md.....	516,219	193,720	337,534
Philadelphia, Pa.....	327,773	92,846	332,351	Boston, Mass.....	371,302	236,586	423,631
<b>Musical Instruments, Organs and Mate- rials.</b>				Brooklyn, N. Y.....	3,541,337	3,619,922	5,572,631
Boston, Mass.....	910,573	208,670	697,670	Chicago, Ill.....	4,306,173	3,045,129	4,799,675
Cambridge, Mass.....	903,988	197,077	642,370	Cincinnati, Ohio.....	2,335,534	1,131,433	2,063,678
Chicago, Ill.....	3,120,900	974,553	2,423,950	Cleveland, Ohio.....	1,617,119	1,151,280	1,943,986
New York, N. Y.....	423,310	179,253	460,360	Detroit, Mich.....	1,091,559	531,285	1,001,669
Worcester, Mass.....	533,134	175,333	463,309	Jersey City, N. J.....	1,206,338	514,239	808,613
<b>Musical Instruments, Pianos and Mate- rials.</b>				Louisville, Ky.....	201,344	173,111	239,339
Albany, N. Y.....	369,336	146,000	332,307	Newark, N. J.....	559,595	232,776	381,500
Baltimore, Md.....	1,195,337	406,592	1,291,165	New York, N. Y.....	2,201,325	1,439,995	2,314,692
Boston, Mass.....	3,531,714	1,750,303	3,947,943	Philadelphia, Pa.....	3,914,336	2,850,779	5,191,350
Brooklyn, N. Y.....	623,998	167,530	572,350	Pittsburg, Pa.....	450,945	338,916	551,625
Cambridge, Mass.....	799,731	323,767	907,813	Reading, Pa.....	270,093	88,343	140,651
Chicago, Ill.....	465,500	352,222	755,450	St. Louis, Mo.....	3,723,536	2,099,636	3,233,317
New York, N. Y.....	10,260,817	4,337,291	12,014,179	San Francisco, Cal.....	597,631	595,925	973,391
Philadelphia, Pa.....	436,747	195,532	448,300	<b>Paper.</b>			
<b>Nets and Seines.</b>				Dayton, Ohio.....	663,479	364,706	735,158
Gloucester, Mass.....	255,359	61,943	145,324	Fitchburg, Mass.....	1,269,450	1,141,372	1,699,349
<b>Oil, Cotton-seed and Cake.</b>				Holyoke, Mass.....	9,393,550	4,753,339	8,561,102
Memphis, Tenn.....	1,564,305	1,402,653	1,924,004	Lawrence, Mass.....	1,203,010	698,513	1,143,499
New Orleans, La.....	257,618	256,495	421,333	Philadelphia, Pa.....	2,566,691	1,109,190	1,307,377
<b>Oil, Linseed.</b>				Troy, N. Y.....	1,036,943	325,569	552,228
Chicago, Ill.....	1,583,892	2,312,529	2,733,764	<b>Paper Goods not else- where specified.</b>			
Philadelphia, Pa.....	669,900	895,061	1,043,266	Brooklyn, N. Y.....	535,670	248,079	502,529
St. Louis, Mo.....	1,119,696	1,119,187	1,433,201	Holyoke, Mass.....	473,195	459,195	658,233
<b>Oil, lubricating.</b>				Springfield, Mass.....	286,932	167,678	240,473
Cleveland, Ohio.....	202,366	223,532	496,500	<b>Paper Hangings.</b>			
Milwaukee, Wis.....	210,150	133,403	230,625	Brooklyn, N. Y.....	1,790,121	1,067,697	2,143,023
New York, N. Y.....	546,370	609,162	1,002,633	New York, N. Y.....	3,029,037	1,216,472	3,070,213
				Philadelphia, Pa.....	1,506,726	913,193	1,562,246
				<b>Paper Patterns.</b>			
				New York, N. Y.....	297,415	77,150	323,900
				<b>Patent Medicines and Compounds.</b>			
				Atlanta, Ga.....	243,311	143,825	729,044
				Baltimore, Md.....	976,725	779,451	1,947,950
				Boston, Mass.....	1,029,974	507,720	1,310,160



CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.	CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
Brooklyn, N. Y.	\$316,725	\$181,622	\$472,794	New York, N. Y.	\$433,742	\$126,736	\$704,749
Buffalo, N. Y.	743,743	267,961	1,809,100	Philadelphia, Pa.	613,496	438,270	1,465,015
Chicago, Ill.	870,177	333,629	1,269,860	St. Louis, Mo.	267,139	164,944	551,737
Cincinnati, Ohio	300,605	110,957	356,105	<b>Plated and Britannia Ware.</b>			
Grand Rapids, Mich.	255,650	176,093	281,373	Brooklyn, N. Y.	319,100	138,610	438,500
Lowell, Mass.	714,662	621,158	2,157,237	Hartford, Conn.	585,530	333,244	654,478
New Orleans, La.	242,322	76,072	274,930	Meriden, Conn.	5,762,310	1,716,287	3,918,975
New York, N. Y.	1,736,965	678,067	2,462,850	New York, N. Y.	213,865	68,270	225,600
Philadelphia, Pa.	2,902,461	878,230	2,801,605	Taunton, Mass.	887,300	307,074	1,086,700
Pittsburg, Pa.	383,357	315,255	792,938	<b>Plumbers' Supplies.</b>			
Providence, R. I.	864,016	72,845	307,565	Baltimore, Md.	397,279	216,978	495,500
Rochester, N. Y.	1,244,323	416,338	1,363,625	Brooklyn, N. Y.	633,225	312,243	546,750
St. Louis, Mo.	1,889,181	674,779	2,186,416	Chicago, Ill.	1,281,346	451,204	1,248,404
San Francisco, Cal.	293,077	94,919	327,294	Cincinnati, Ohio		197,956	363,227
<b>Paving and Paving Materials.</b>				New York, N. Y.	1,379,504	1,252,512	2,345,383
Boston, Mass.	251,476	185,276	421,596	Philadelphia, Pa.	1,533,362	468,476	1,100,031
Buffalo, N. Y.	580,199	463,535	1,472,804	St. Louis, Mo.	1,360,486	861,000	1,465,371
Chicago, Ill.	1,523,119	2,075,165	3,275,609	<b>Plumbing and Gas Fitting.</b>			
Cincinnati, Ohio	179,678	1,074,868	2,246,623	Albany, N. Y.	334,009	277,095	605,907
Columbus, Ohio	239,197	381,274	715,481	Allegheny, Pa.	245,115	108,178	391,700
Kansas City, Kan.	334,674	99,051	180,497	Baltimore, Md.	489,382	330,242	799,525
Louisville, Ky.	20,429	92,974	297,135	Boston, Mass.	1,843,214	1,378,004	3,250,086
Milwaukee, Wis.	562,729	628,447	1,070,248	Bridgeport, Conn.	262,225	143,706	387,582
Minneapolis, Minn.	292,391	342,925	654,215	Brooklyn, N. Y.	1,982,021	1,705,720	4,137,514
New York, N. Y.	788,480	417,495	1,192,070	Buffalo, N. Y.	842,569	693,105	1,360,070
Omaha, Neb.	250,028	262,807	533,415	Cambridge, Mass.	213,311	142,921	356,790
Philadelphia, Pa.	1,092,308	1,881,198	3,853,288	Chicago, Ill.	2,620,218	2,736,415	5,608,551
Rochester, N. Y.	334,662	161,555	531,000	Cincinnati, Ohio	742,720	650,748	1,455,915
San Francisco, Cal.	533,510	719,316	1,542,460	Cleveland, Ohio	353,225	359,606	753,926
Washington, D. C.	545,487	387,890	993,415	Detroit, Mich.	567,109	514,938	1,163,221
<b>Pens, Gold.</b>				Duluth, Minn.	289,630	217,565	386,221
New York, N. Y.	516,140	160,819	500,254	Hartford, Conn.	208,050	133,550	335,800
<b>Perfumery and Cosmetics.</b>				Jersey City, N. J.	236,817	153,969	401,712
New York, N. Y.	1,494,522	871,884	1,700,479	Kansas City, Mo.	521,287	597,164	1,155,254
Philadelphia, Pa.	430,671	265,831	639,250	Los Angeles, Cal.	202,608	116,325	264,719
Rochester, N. Y.	417,037	187,100	415,900	Louisville, Ky.	253,774	200,230	418,613
<b>Petroleum, Refining.</b>				Lowell, Mass.	222,651	224,340	380,118
Buffalo, N. Y.	1,800,873	1,499,257	1,822,020	Memphis, Tenn.	289,300	232,250	399,850
Cleveland, Ohio	10,441,695	8,368,522	10,588,501	Milwaukee, Wis.	555,712	452,167	927,024
Philadelphia, Pa.	9,351,798	6,922,520	8,646,982	Minneapolis, Minn.	652,847	525,560	1,232,541
Pittsburg, Pa.	1,433,269	1,225,852	1,562,715	Newark, N. J.	769,969	621,778	1,352,545
<b>Photography.</b>				New Haven, Conn.	283,950	259,634	535,526
Baltimore, Md.	253,062	36,147	183,113	New Orleans, La.	259,508	161,961	329,743
Boston, Mass.	1,483,875	201,719	820,633	New York, N. Y.	5,149,174	4,120,319	10,304,253
Brooklyn, N. Y.	582,175	103,425	422,141	Omaha, Neb.	371,350	371,736	723,696
Buffalo, N. Y.	289,600	53,356	222,593	Paterson, N. J.	310,015	259,618	514,960
Chicago, Ill.	1,146,133	289,491	969,280	Philadelphia, Pa.	3,355,060	2,458,975	5,701,478
Cincinnati, Ohio	339,318	56,317	250,715	Pittsburg, Pa.	263,407	92,718	279,380
Cleveland, Ohio	311,984	82,849	303,909	Portland, Ore.	248,975	300,415	572,195
Detroit, Mich.	279,920	42,058	164,592	Providence, R. I.	287,519	210,312	441,565
Kansas City, Mo.	233,635	28,577	157,970	Rochester, N. Y.	181,757	575,644	925,314
Milwaukee, Wis.	233,707	51,416	170,950	St. Louis, Mo.	1,048,477	648,359	1,651,169
Minneapolis, Minn.	299,655	47,274	228,065	St. Paul, Minn.	594,535	580,999	1,075,827
New York, N. Y.	1,955,704	300,339	1,336,320	San Francisco, Cal.	794,597	702,335	1,660,346
Philadelphia, Pa.	1,244,892	232,534	900,136	Scranton, Pa.	252,334	133,479	258,423
Pittsburg, Pa.	266,856	40,701	192,085	Seattle, Wash.	217,686	221,690	464,600
St. Louis, Mo.	454,234	82,779	334,762	Syracuse, N. Y.	221,436	225,096	573,295
St. Paul, Minn.	256,754	23,369	131,117	Tacoma, Wash.	213,675	333,846	703,200
San Francisco, Cal.	672,648	77,039	364,214	Washington, D. C.	720,635	502,203	1,130,574
Washington, D. C.	253,235	52,210	191,250	Worcester, Mass.	361,080	267,412	453,478
<b>Photolithographing and Engraving.</b>				<b>Pocketbooks.</b>			
New York, N. Y.	834,947	175,130	830,300	New York, N. Y.	771,747	559,266	1,204,342
<b>Pickles, Preserves, and Sauces.</b>				Philadelphia, Pa.	271,450	113,988	250,524
Boston, Mass.	419,881	254,941	425,604	<b>Printing and Publishing, Book and Job.</b>			
Chicago, Ill.	722,510	623,036	1,064,956	Akron, Ohio	509,750	185,632	413,600
Cincinnati, Ohio	228,445	199,320	445,855	Albany, N. Y.	786,647	152,051	533,366
Detroit, Mich.	260,627	166,760	274,963	Atlanta, Ga.	361,525	176,595	445,019
New York, N. Y.	862,237	417,041	915,127	Baltimore, Md.	1,189,250	367,863	1,144,534
Philadelphia, Pa.	233,236	235,709	407,594	Boston, Mass.	721,536	140,840	439,732
Pittsburg, Pa.	499,000	515,357	1,210,500	Brooklyn, N. Y.	1,573,445	693,499	1,633,525
St. Louis, Mo.	557,872	603,005	953,519	Buffalo, N. Y.	816,939	218,143	620,060
San Francisco, Cal.	300,655	136,002	294,001	Cambridge, Mass.	221,339	43,033	251,369
<b>Pipes, Tobacco.</b>				Charleston, S. C.	260,875	96,250	242,985
New York, N. Y.	1,546,575	322,595	1,114,500	Chicago, Ill.	12,993,728	4,606,359	14,030,373
Philadelphia, Pa.	211,689	166,976	376,340	Cincinnati, Ohio	3,072,913	2,010,245	3,934,846
<b>Plastering, Stucco Work.</b>				Cleveland, Ohio	643,838	178,700	633,878
Chicago, Ill.	859,833	393,206	877,430	Columbus, Ohio	216,309	65,005	163,875
Cincinnati, Ohio	246,030	231,611	694,246	Dallas, Tex.	356,975	208,000	426,550
				Dayton, Ohio	274,460	206,831	363,398
				Denver, Col.	361,520	13,877	406,717
				Des Moines, Iowa	272,564	106,117	272,007
				Detroit, Mich.	1,134,025	241,270	1,136,775

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Galveston, Texas.....	\$309,975	\$114,803	\$321,965	St. Louis, Mo.....	\$2,992,665	\$1,017,505	\$4,626,360
Hartford, Conn.....	888,286	201,836	545,620	St. Paul, Minn.....	2,260,667	301,718	1,858,159
Indianapolis, Ind.....	622,693	205,785	606,865	Salt Lake, Utah.....	272,403	89,724	431,805
Jersey City, N. J.....	295,770	69,400	214,100	San Francisco, Cal.....	3,921,432	935,635	3,971,990
Kansas City, Mo.....	706,375	221,604	818,545	Savannah, Ga.....	377,390	152,166	354,766
Louisville, Ky.....	452,713	120,290	330,431	Seattle, Wash.....	322,290	65,236	400,055
Memphis, Tenn.....	362,712	109,052	302,200	Springfield, Mass.....	653,130	129,968	521,098
Milwaukee, Wis.....	862,555	212,549	637,181	Springfield, Ohio.....	291,521	85,053	387,059
Minneapolis, Minn.....	635,407	152,593	533,033	Syracuse, N. Y.....	529,722	120,272	463,415
Nashville, Tenn.....	340,675	111,194	369,450	Tacoma, Wash.....	241,597	58,892	380,115
Newark, N. J.....	544,689	271,744	559,733	Toledo, Ohio.....	511,302	156,872	724,866
New Haven, Conn.....	385,793	71,122	333,861	Trenton, N. J.....	411,523	55,188	229,384
New Orleans, La.....	542,458	113,342	436,223	Troy, N. Y.....	514,756	71,056	418,736
New York, N. Y.....	21,284,758	5,102,060	19,894,757	Utica, N. Y.....	282,293	99,679	518,965
Omaha, Neb.....	472,295	145,213	486,351	Washington, D. C.....	697,702	300,794	1,173,567
Philadelphia, Pa.....	13,851,739	3,131,117	11,347,340	Wheeling, W. Va.....	204,915	58,549	262,813
Pittsburg, Pa.....	2,085,121	544,380	1,589,174	Williamsport, Pa.....	221,850	46,197	169,803
Portland, Ore.....	295,932	53,683	233,757	Wilmington, Del.....	217,867	252,103	144,677
Providence, R. I.....	534,271	132,435	416,344	Worcester, Mass.....	275,150	69,030	353,811
Richmond, Va.....	532,613	174,786	441,242	<b>Printing Materials.</b>			
Rochester, N. Y.....	964,251	271,309	664,800	Chicago, Ill.....	965,600	113,398	439,400
St. Joseph, Mo.....	254,953	80,949	227,400	New York, N. Y.....	445,200	230,059	459,692
St. Louis, Mo.....	4,205,597	1,440,742	3,894,990	<b>Refrigerators.</b>			
St. Paul, Minn.....	890,890	233,163	883,223	Boston, Mass.....	231,257	62,188	179,613
Springfield, Mass.....	318,260	75,562	220,164	New York, N. Y.....	438,885	204,711	498,714
Toledo, Ohio.....	353,801	71,643	272,091	Philadelphia, Pa.....	331,795	153,263	391,740
Washington, D. C.....	1,731,504	1,256,934	3,914,547	St. Louis, Mo.....	521,750	1,110,913	1,376,179
<b>Printing and Publish- ing, Music.</b>				<b>Regalia and Society Banners and Em- blems.</b>			
Boston, Mass.....	721,836	140,840	489,732	Cincinnati, Ohio.....	463,425	335,205	773,850
New York, N. Y.....	567,155	55,009	339,650	New York, N. Y.....	452,121	143,395	379,220
Philadelphia, Pa.....	637,258	126,519	427,496	Philadelphia, Pa.....	346,733	177,754	446,349
<b>Printing and Publish- ing, Newspapers and Periodicals.</b>				<b>Rice, cleaning and pol- ishing.</b>			
Akron, Ohio.....	201,073	37,392	150,132	Charleston, S. C.....	264,700	27,500	120,056
Albany, N. Y.....	472,694	147,135	693,470	New Orleans, La.....	1,037,300	3,056,750	3,577,835
Atlanta, Ga.....	317,105	137,146	741,333	Savannah, Ga.....	455,000	684,396	914,611
Baltimore, Md.....	1,531,904	370,340	1,631,822	<b>Roofing and Roofing Materials.</b>			
Binghamton, N. Y.....	221,314	49,776	213,720	Baltimore, Md.....	235,498	103,049	262,615
Birmingham, Ala.....	265,520	55,723	274,886	Boston, Mass.....	556,275	526,731	1,023,860
Boston, Mass.....	6,315,267	1,607,133	7,140,264	Brooklyn, N. Y.....	1,436,315	782,935	2,157,154
Brooklyn, N. Y.....	1,050,418	250,864	1,398,851	Canton, Ohio.....	369,917	362,353	530,504
Buffalo, N. Y.....	1,539,236	345,562	1,451,651	Chicago, Ill.....	662,175	1,154,464	1,878,744
Cambridge, Mass.....	1,930,242	567,671	1,556,056	Cincinnati, Ohio.....	531,005	745,322	1,336,120
Camden, N. J.....	343,863	46,412	232,652	Cleveland, Ohio.....	225,790	293,139	464,545
Chicago, Ill.....	11,266,940	3,154,735	13,249,409	Detroit, Mich.....	201,145	260,510	450,452
Cincinnati, Ohio.....	2,504,996	561,871	2,951,826	Long Island City, N. Y.....	304,950	222,553	390,823
Cleveland, Ohio.....	1,849,057	617,936	2,433,143	Louisville, Ky.....	344,347	505,743	835,618
Columbus, Ohio.....	633,301	191,042	706,175	New York, N. Y.....	2,177,901	1,331,989	2,956,409
Dallas, Texas.....	386,813	95,933	485,499	Philadelphia, Pa.....	1,532,555	1,100,260	2,376,784
Dayton, Ohio.....	461,218	114,394	427,211	St. Louis, Mo.....	1,123,275	667,795	1,452,875
Denver, Col.....	617,365	243,997	1,285,266	St. Paul, Minn.....	264,215	197,441	336,023
Des Moines, Iowa.....	463,623	90,732	443,361	San Francisco, Cal.....	3,921,432	985,635	3,971,990
Detroit, Mich.....	1,035,200	262,011	1,526,666	<b>Rubber and Elastic Goods.</b>			
Elmira, N. Y.....	301,215	69,934	310,935	Boston, Mass.....	1,473,185	979,983	1,784,781
Fort Wayne, Ind.....	220,320	71,272	257,190	Chelsea, Mass.....	2,709,844	1,891,427	2,796,649
Grand Rapids, Mich.....	209,996	61,595	272,533	Cleveland, Ohio.....	741,997	721,567	970,239
Harrisburg, Pa.....	215,193	59,575	243,390	New York, N. Y.....	919,035	554,265	1,170,900
Hartford, Conn.....	419,355	67,475	416,293	Philadelphia, Pa.....	406,779	218,187	337,033
Indianapolis, Ind.....	774,739	182,187	986,064	Providence, R. I.....	505,764	285,085	599,000
Jersey City, N. J.....	410,345	91,255	539,700	<b>Saddlery and Harness.</b>			
Kansas City, Mo.....	1,046,263	315,251	1,443,132	Baltimore, Md.....	802,478	451,263	923,503
Lancaster, Pa.....	286,142	39,385	204,621	Boston, Mass.....	691,376	236,311	656,524
Lincoln, Neb.....	649,565	114,154	542,555	Bridgeport, Conn.....	379,752	192,952	295,130
Lowell, Mass.....	366,401	54,560	279,124	Brooklyn, N. Y.....	411,050	143,194	414,524
Louisville, Ky.....	1,825,991	278,231	1,524,567	Buffalo, N. Y.....	361,139	124,129	273,833
Macon, Ga.....	216,310	49,345	239,950	Chicago, Ill.....	1,357,043	676,851	1,486,256
Memphis, Tenn.....	507,185	81,137	436,670	Cincinnati, Ohio.....	1,704,834	1,602,011	3,326,707
Milwaukee, Wis.....	1,075,289	346,142	1,436,134	Denver, Col.....	363,717	96,909	308,669
Minneapolis, Minn.....	1,327,330	258,800	1,226,060	Detroit, Mich.....	331,542	166,934	340,012
Nashville, Tenn.....	874,418	145,023	713,273	Hartford, Conn.....	242,798	265,989	433,398
Newark, N. J.....	406,120	106,150	651,788	Kansas City, Mo.....	252,899	305,376	537,850
New Haven, Conn.....	312,976	70,037	376,012	Knoxville, Tenn.....	294,745	170,840	331,600
New Orleans, La.....	877,079	245,198	1,326,869	Louisville, Ky.....	1,311,675	946,779	1,572,658
New York, N. Y.....	30,845,413	7,476,948	34,253,772	Milwaukee, Wis.....	329,575	121,267	275,702
Oakland, Cal.....	302,000	53,119	324,530	Minneapolis, Minn.....	319,618	126,016	277,096
Omaha, Neb.....	749,636	195,910	920,576	Nashville, Tenn.....	342,757	307,765	571,996
Paterson, N. J.....	246,485	35,797	172,596	Newark, N. J.....	720,354	576,760	1,323,635
Peoria, Ill.....	256,825	59,445	340,667	New Orleans, La.....	556,194	365,051	660,633
Philadelphia, Pa.....	11,073,808	2,909,939	13,397,217	New York, N. Y.....	1,863,176	636,786	1,824,729
Pittsburg, Pa.....	1,901,782	431,764	2,028,443				
Portland, Ore.....	423,309	132,959	676,666				
Providence, R. I.....	422,373	114,495	592,664				
Reading, Pa.....	429,730	61,364	330,178				
Richmond, Va.....	353,906	57,323	383,270				
Rochester, N. Y.....	569,265	133,179	736,096				



CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.	CITY AND STATE.	Capital.	Cost of material.	Goods manufactured.
Omaha, Neb.....	\$280,470	\$108,086	\$276,404	<b>Silverware.</b>			
Philadelphia, Pa.....	1,043,807	523,962	1,245,191	New York, N. Y.....	\$550,650	\$249,382	\$1,822,335
Pittsburg, Pa.....	368,652	115,888	274,643	Philadelphia, Pa.....	285,691	7,493,249	9,146,513
Rochester, N. Y.....	294,641	123,698	238,467	Providence, R. I.....	3,055,770	1,045,860	2,509,869
St. Louis, Mo.....	2,900,018	1,348,947	2,808,961	<b>Slaughtering and Meat Packing, Wholesale.</b>			
St. Paul, Minn.....	558,766	245,535	518,720	Baltimore, Md.....	1,153,856	3,668,147	4,311,412
San Antonio, Texas.....	265,185	140,237	281,798	Brooklyn, N. Y.....	1,055,528	5,348,494	6,284,618
San Francisco, Cal.....	1,610,993	423,570	932,313	Buffalo, N. Y.....	2,558,860	6,466,186	7,719,970
Washington, D. C.....	222,691	50,082	147,245	Chicago, Ill.....	39,278,995	164,739,508	194,119,148
<b>Safes and Vaults</b>				Cincinnati, Ohio.....	2,120,155	5,741,815	6,903,303
Cincinnati, Ohio.....	2,714,813	1,228,709	3,321,257	Cleveland, Ohio.....	676,060	4,330,402	4,810,993
New York, N. Y.....	1,108,422	279,773	767,015	Davenport, Iowa.....	392,900	328,122	409,478
<b>Salt.</b>				Denver, Col.....	222,150	1,415,849	1,625,711
Bay City, Mich.....	507,012	118,184	290,932	Detroit, Mich.....	697,313	2,445,156	2,770,178
Saginaw, Mich.....	797,727	162,988	435,798	Dubuque, Iowa.....	225,180	1,610,155	1,758,374
Syracuse, N. Y.....	1,532,501	48,899	286,103	Indianapolis, Ind.....	925,000	4,621,907	5,403,018
<b>Saws.</b>				Kansas City, Kan.....	8,964,536	32,284,123	39,927,192
Chicago, Ill.....	340,900	143,104	261,216	Louisville, Ky.....	1,333,643	1,877,234	2,375,605
Cincinnati, Ohio.....	243,525	93,170	325,800	Milwaukee, Wis.....	2,174,345	7,261,616	7,990,117
Philadelphia, Pa.....	2,729,988	925,447	1,978,700	Minneapolis, Minn.....	241,200	314,025	468,115
<b>Scales and Balances.</b>				Newark, N. J.....	414,510	2,040,770	2,325,396
New York, N. Y.....	401,979	67,520	276,435	New Haven, Conn.....	369,630	2,597,264	3,043,257
Philadelphia, Pa.....	216,998	63,755	210,414	New York, N. Y.....	3,181,523	16,650,035	19,122,072
<b>Screws, Machine.</b>				Pawtucket, R. I.....	547,100	2,670,000	2,895,191
Worcester, Mass.....	265,600	57,194	214,543	Philadelphia, Pa.....	3,076,759	7,493,249	9,146,513
<b>Sewing Machines and Attachments.</b>				Pittsburg, Pa.....	476,500	1,149,965	1,341,900
Boston, Mass.....	740,157	233,906	741,654	Portland, Ore.....	516,820	1,222,330	1,570,935
Chicago, Ill.....	500,100	174,770	535,965	Providence, R. I.....	299,924	1,520,940	1,695,105
New York, N. Y.....	242,315	38,895	181,050	St. Louis, Mo.....	2,926,386	7,199,619	8,562,430
Philadelphia, Pa.....	680,000	111,400	356,972	St. Paul, Minn.....	463,800	659,636	783,370
<b>Shipbuilding.</b>				San Francisco, Cal.....	474,375	528,773	661,011
Baltimore, Md.....	1,717,757	692,740	1,640,317	Sioux City, Iowa.....	2,313,836	6,872,132	7,589,228
Boston, Mass.....	922,252	487,420	1,346,793	Syracuse, N. Y.....	309,920	414,945	491,288
Brooklyn, N. Y.....	13,532,440	1,063,766	3,425,174	<b>Slaughtering, Wholesale, not including meat packing.</b>			
Buffalo, N. Y.....	1,106,517	311,650	1,012,095	Boston, Mass.....	522,087	2,524,447	2,782,323
Camden, N. J.....	1,417,445	727,011	1,177,222	Brooklyn, N. Y.....	955,360	6,291,955	6,852,736
Chicago, Ill.....	540,831	116,797	336,143	Buffalo, N. Y.....	339,720	1,970,973	2,231,074
Cleveland, Ohio.....	2,568,775	1,394,013	2,973,300	Chicago, Ill.....	551,700	8,828,557	9,487,254
Detroit, Mich.....	362,681	337,627	533,957	Jersey City, N. J.....	1,187,115	10,047,665	10,624,859
Hoboken, N. J.....	473,510	133,470	640,915	Milwaukee, Wis.....	238,711	1,374,055	1,814,849
Jersey City, N. J.....	476,230	61,600	277,016	New York, N. Y.....	5,602,350	23,111,570	31,129,432
Milwaukee, Wis.....	499,683	135,536	367,693	Philadelphia, Pa.....	1,055,766	6,181,217	6,947,985
New York, N. Y.....	1,018,545	476,041	1,322,305	St. Louis, Mo.....	418,185	2,665,020	3,485,684
Philadelphia, Pa.....	1,284,526	425,573	942,423	San Francisco, Cal.....	1,452,979	5,047,023	6,009,403
San Francisco, Cal.....	1,854,748	1,099,133	2,916,373	<b>Soap and Candles.</b>			
Toledo, Ohio.....	240,500	203,565	445,100	Allegheny, Pa.....	744,254	575,063	817,743
Wilmington, Del.....	1,763,163	807,983	1,966,124	Baltimore, Md.....	430,252	359,513	614,124
<b>Shirts.</b>				Boston, Mass.....	530,625	532,450	787,518
Baltimore, Md.....	556,515	597,953	1,191,918	Brooklyn, N. Y.....	662,142	489,701	787,888
Boston, Mass.....	861,898	411,848	775,910	Buffalo, N. Y.....	1,423,035	1,315,423	2,073,547
Bridgeport, Conn.....	247,133	201,977	306,756	Cambridge, Mass.....	641,881	973,362	1,303,870
Brooklyn, N. Y.....	389,104	114,534	338,618	Chicago, Ill.....	4,562,675	7,237,639	9,487,542
Chicago, Ill.....	1,869,575	941,543	1,854,654	Cincinnati, Ohio.....	1,935,609	2,834,975	3,326,480
New York, N. Y.....	4,423,923	3,564,550	7,484,009	Jersey City, N. J.....	1,108,535	756,488	1,554,270
St. Louis, Mo.....	735,515	276,048	534,895	Louisville, Ky.....	431,423	156,260	254,292
San Francisco, Cal.....	511,971	931,766	1,703,773	Milwaukee, Wis.....	402,380	342,952	510,966
Troy, N. Y.....	3,953,237	2,476,156	6,217,785	New Orleans, La.....	211,370	133,477	221,164
<b>Shirts, materials furnished.</b>				New York, N. Y.....	2,559,349	3,099,970	5,513,668
New York, N. Y.....	326,736	9,424	912,207	Philadelphia, Pa.....	2,044,444	1,496,052	2,788,746
<b>Shoddy.</b>				St. Louis, Mo.....	333,797	917,150	1,203,406
Philadelphia, Pa.....	375,813	642,214	853,285	San Francisco, Cal.....	933,800	655,986	992,700
<b>Show Cases.</b>				Syracuse, N. Y.....	215,300	154,850	231,080
Baltimore, Md.....	204,018	129,397	263,246	<b>Soda Water, Apparatus.</b>			
Chicago, Ill.....	377,070	166,130	425,025	New York, N. Y.....	1,539,300	232,653	345,123
New York, N. Y.....	234,969	111,330	263,750	<b>Sporting Goods.</b>			
<b>Silk and Silk Goods.</b>				New York, N. Y.....	356,547	167,033	388,711
Allentown, Pa.....	936,750	1,165,920	1,694,342	Philadelphia, Pa.....	245,540	201,075	342,699
Boston, Mass.....	272,753	91,641	249,000	<b>Springs, Steel, Car, and Carriage.</b>			
Brooklyn, N. Y.....	1,115,987	507,135	1,049,075	Chicago, Ill.....	596,376	213,265	565,000
Chicago, Ill.....	743,263	314,855	783,845	Newark, N. J.....	208,350	159,437	341,931
Jersey City, N. J.....	617,900	563,757	1,066,000	Philadelphia, Pa.....	952,508	654,405	1,065,363
New York, N. Y.....	12,613,994	6,897,943	13,579,462	<b>Stamped Ware.</b>			
Paterson, N. J.....	14,253,491	12,755,523	22,058,624	Brooklyn, N. Y.....	1,772,776	1,393,741	2,221,206
Philadelphia, Pa.....	5,426,920	3,536,922	8,059,604	Chicago, Ill.....	324,475	219,231	429,600
San Francisco, Cal.....	211,543	146,406	271,912	Cleveland, Ohio.....	441,050	209,132	442,000
Yonkers, N. Y.....	472,200	493,395	1,097,530	Newark, N. J.....	1,616,571	905,514	1,840,460
<b>Silversmithing.</b>				New York, N. Y.....	941,300	260,367	826,294
New York, N. Y.....	311,866	107,751	331,650	Philadelphia, Pa.....	901,341	284,318	670,390

CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
<b>Stationery Goods not elsewhere specified.</b>				Covington, Ky.....	\$730,050	\$402,750	\$986,750
Boston, Mass.....	\$664,469	\$260,601	\$477,600	Detroit, Mich.....	1,843,960	2,388,032	4,742,412
Chicago, Ill.....	220,150	44,856	121,396	Louisville, Ky.....	1,562,953	2,220,314	5,145,208
Holyoke, Mass.....	432,283	403,714	572,277	Milwaukee, Wis.....	886,374	353,896	1,212,668
New York, N. Y.....	3,276,208	1,715,213	3,600,138	New York, N. Y.....	1,566,100	614,043	2,107,595
Philadelphia, Pa.....	1,362,945	1,923,053	2,560,948	Petersburg, Va.....	1,227,920	1,116,396	2,422,141
<b>Steam Fittings and Heating Apparatus.</b>				Philadelphia, Pa.....	815,225	296,555	779,992
Boston, Mass.....	1,106,709	996,785	1,955,765	Quincy, Ill.....	273,215	221,975	578,500
Bridgeport, Conn.....	1,227,022	524,487	1,208,420	Richmond, Va.....	2,845,375	1,833,964	4,598,269
Chicago, Ill.....	2,895,373	1,552,224	3,921,738	St. Louis, Mo.....	4,323,470	7,641,668	4,354,165
Cincinnati, Ohio.....	225,500	52,616	259,500	<b>Tobacco, Cigars and Cigarettes.</b>			
Detroit, Mich.....	613,235	473,570	1,017,625	Albany, N. Y.....	534,470	277,739	709,861
Jersey City, N. J.....	1,032,450	391,225	858,000	Allegheny, Pa.....	427,138	190,914	737,619
Milwaukee, Wis.....	729,903	234,676	757,959	Baltimore, Md.....	1,962,407	938,451	2,690,086
New York, N. Y.....	3,123,702	2,137,441	4,181,235	Binghamton, N. Y.....	1,815,302	1,055,480	2,733,160
Philadelphia, Pa.....	672,227	333,950	823,944	Boston, Mass.....	1,440,379	1,170,668	2,360,985
Pittsburg, Pa.....	248,934	135,695	349,970	Brooklyn, N. Y.....	2,180,724	904,046	2,465,274
St. Louis, Mo.....	328,515	295,613	514,517	Buffalo, N. Y.....	729,845	277,160	818,858
Utica, N. Y.....	382,420	113,245	323,938	Chicago, Ill.....	2,669,734	1,806,383	4,167,419
<b>Steam Packing.</b>				Davenport, Iowa.....	408,691	163,571	475,607
New York, N. Y.....	340,300	78,530	223,500	Denver, Col.....	313,661	150,870	441,230
<b>Stencils and Brands.</b>				Dayton, Ohio.....	267,600	330,756	851,303
New York, N. Y.....	212,929	59,540	219,522	Detroit, Mich.....	1,187,339	757,297	1,893,479
<b>Stereotyping and Electrotyping.</b>				Indianapolis, Ind.....	236,256	117,596	320,334
Boston, Mass.....	218,543	58,234	274,826	Jersey City, N. J.....	243,466	103,976	285,736
Chicago, Ill.....	332,250	85,765	367,000	Kingston, N. Y.....	895,219	481,979	1,188,555
New York, N. Y.....	693,535	183,094	743,100	Lancaster, Pa.....	532,347	424,670	1,131,802
Philadelphia, Pa.....	237,115	49,139	253,569	Louisville, Ky.....	404,955	240,740	641,461
<b>Sugar and Molasses, refining.</b>				Milwaukee, Wis.....	905,449	450,747	1,258,938
Brooklyn, N. Y.....	3,999,510	14,817,012	16,629,982	Minneapolis, Minn.....	296,471	217,134	564,544
Chicago, Ill.....	438,000	1,239,232	1,427,312	Newark, N. J.....	542,412	279,556	718,350
New Orleans, La.....	1,357,050	10,595,433	11,737,323	New Haven, Conn.....	221,386	93,502	292,347
Philadelphia, Pa.....	8,207,655	41,835,565	46,598,524	New Orleans, La.....	652,877	509,798	1,569,145
San Francisco, Cal.....	5,559,540	20,822,965	22,673,350	New York, N. Y.....	20,944,585	14,112,568	33,452,430
<b>Surgical Appliances.</b>				Philadelphia, Pa.....	5,585,292	3,426,066	8,263,222
New York, N. Y.....	203,532	40,122	146,706	Pittsburg, Pa.....	617,752	243,264	1,043,393
Philadelphia, Pa.....	443,422	151,600	390,350	Reading, Pa.....	504,110	433,429	1,078,517
<b>Tinsmithing and Copersmithing and Sheet-iron Working.</b>				Rochester, N. Y.....	1,113,890	691,349	1,607,131
Allegheny, Pa.....	222,819	83,207	209,932	St. Louis, Mo.....	1,530,442	555,833	11,553,401
Baltimore, Md.....	2,742,104	3,043,143	5,247,537	St. Paul, Minn.....	411,127	206,767	532,181
Boston, Mass.....	1,663,057	730,842	1,861,722	San Francisco, Cal.....	2,777,975	593,001	2,792,795
Brooklyn, N. Y.....	2,063,907	1,309,111	2,912,073	Springfield, Mass.....	234,688	183,871	481,440
Buffalo, N. Y.....	1,233,834	834,272	1,638,966	Syracuse, N. Y.....	771,502	303,253	910,110
Cambridge, Mass.....	223,527	137,608	319,613	Troy, N. Y.....	421,994	173,865	406,794
Chicago, Ill.....	4,193,970	2,590,224	5,332,354	Utica, N. Y.....	263,564	176,798	443,699
Cincinnati, Ohio.....	1,120,194	547,310	1,313,501	Wheeling, W. Va.....	211,313	111,467	461,240
Cleveland, Ohio.....	300,770	210,493	463,945	York, Pa.....	309,527	133,098	446,221
Detroit, Mich.....	366,726	193,748	404,953	<b>Tobacco Stemming and Rehandling.</b>			
Duluth, Minn.....	236,205	203,776	339,152	Lancaster, Pa.....	1,096,846	1,507,680	1,970,926
Indianapolis, Ind.....	296,737	207,040	345,767	Louisville, Ky.....	745,342	1,117,462	1,468,060
Kansas City, Mo.....	249,487	133,487	321,331	Richmond, Va.....	756,889	1,363,816	1,725,771
Louisville, Ky.....	323,394	226,673	485,121	<b>Tools not elsewhere specified.</b>			
Milwaukee, Wis.....	1,192,863	909,531	1,547,321	Bridgeport, Conn.....	336,795	63,553	173,683
Minneapolis, Minn.....	566,567	222,859	571,731	Cleveland, Ohio.....	520,529	182,673	475,530
New Orleans, La.....	458,471	233,449	619,256	Newark, N. J.....	368,375	68,026	367,697
New York, N. Y.....	4,032,262	2,604,234	6,191,177	Philadelphia, Pa.....	1,269,141	579,602	1,243,895
Omaha, Neb.....	202,395	98,643	278,750	Rochester, N. Y.....	275,745	25,579	110,500
Philadelphia, Pa.....	3,373,400	1,865,441	4,081,833	St. Louis, Mo.....	273,335	131,352	237,532
Pittsburg, Pa.....	649,401	134,822	502,567	Worcester, Mass.....	417,396	98,103	379,115
Portland, Ore.....	276,700	225,630	389,940	<b>Toys and Games.</b>			
Providence, R. I.....	313,315	241,323	491,730	Brooklyn, N. Y.....	351,152	87,124	311,340
Rochester, N. Y.....	492,461	271,392	613,927	New York, N. Y.....	744,592	439,143	904,230
St. Louis, Mo.....	1,737,938	1,116,247	2,369,540	Philadelphia, Pa.....	245,754	76,193	230,576
St. Paul, Minn.....	567,776	369,187	641,332	<b>Trunks and Valises.</b>			
San Francisco, Cal.....	1,937,416	1,159,513	1,852,979	Boston, Mass.....	463,571	245,818	433,413
Syracuse, N. Y.....	272,023	152,367	321,330	Chicago, Ill.....	519,900	157,802	333,700
Toledo, Ohio.....	235,370	333,328	570,500	Cincinnati, Ohio.....	402,645	183,845	510,793
Trenton, N. J.....	266,040	133,843	319,665	Detroit, Mich.....	274,973	132,818	280,000
Washington, D. C.....	673,456	311,602	700,410	Louisville, Ky.....	423,760	197,333	434,292
<b>Tobacco, Chewing, Smoking, and Snuff.</b>				Milwaukee, Wis.....	926,048	256,090	614,054
Baltimore, Md.....	2,246,044	1,534,205	3,216,247	Newark, N. J.....	1,339,050	823,032	1,774,113
Brooklyn, N. Y.....	357,243	610,519	1,233,991	New York, N. Y.....	1,167,443	493,203	1,173,845
Chicago, Ill.....	934,495	500,341	1,436,272	Philadelphia, Pa.....	539,532	266,371	540,967
				St. Louis, Mo.....	443,930	196,612	501,150
				San Francisco, Cal.....	316,995	179,713	358,057
				<b>Type Foundry.</b>			
				Baltimore, Md.....	362,750	35,240	162,200
				Boston, Mass.....	243,314	37,943	186,315
				Chicago, Ill.....	646,545	466,240	765,000
				New York, N. Y.....	1,164,879	295,136	733,260
				Philadelphia, Pa.....	1,145,243	123,630	666,553



CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
<b>Typewriters and Supplies.</b>				Troy, N. Y.....	\$224,500	\$155,730	\$251,694
New York, N. Y.....	\$290,109	\$161,881	\$572,982	Wilkesbarre, Pa.....	868,090	560,701	539,284
<b>Umbrellas and Canes.</b>				Worcester, Mass.....	623,658	292,163	596,973
Boston, Mass.....	357,025	392,897	569,287	<b>Wood, Turned and Carved.</b>			
Brooklyn, N. Y.....	220,889	82,780	244,296	Brooklyn, N. Y.....	370,679	150,272	411,626
New York, N. Y.....	2,758,370	2,443,363	4,905,585	Chicago, Ill.....	236,893	115,824	382,559
Philadelphia, Pa.....	3,698,455	3,391,188	5,742,901	Cincinnati, Ohio.....	341,153	155,113	360,223
<b>Upholstery Materials.</b>				Louisville, Ky.....	233,613	198,980	379,250
Cincinnati, Ohio.....	228,500	150,670	298,860	New York, N. Y.....	663,777	210,876	815,970
New York, N. Y.....	563,309	388,755	804,485	Philadelphia, Pa.....	448,910	117,308	453,621
Philadelphia, Pa.....	1,009,490	696,526	1,302,461	<b>Woodenware not elsewhere specified.</b>			
<b>Varnish.</b>				Philadelphia, Pa.....	221,612	98,442	185,750
Boston, Mass.....	241,521	190,384	325,534	<b>Wool Hats.</b>			
Brooklyn, N. Y.....	1,540,073	1,058,247	1,849,984	Reading, Pa.....	819,799	558,898	1,025,976
Chicago, Ill.....	1,343,071	794,978	1,238,319	<b>Woolen Goods.</b>			
Cincinnati, Ohio.....	290,985	201,565	325,250	Camden, N. J.....	652,335	449,616	743,369
Cleveland, Ohio.....	357,300	329,205	390,602	Chester, Pa.....	1,099,408	496,525	916,401
Long Island City, L. I.....	2,017,965	817,716	1,882,850	Holyoke, Mass.....	1,638,081	814,542	1,475,910
Newark, N. J.....	2,209,738	848,841	1,887,161	Lewiston, Me.....	421,366	240,799	417,960
New York, N. Y.....	1,321,766	900,141	1,455,929	Louisville, Ky.....	2,064,888	1,056,206	1,860,974
Philadelphia, Pa.....	474,802	454,012	751,979	Lowell, Mass.....	3,317,591	1,602,658	2,717,502
<b>Vault Lights and Ventilators.</b>				Pawtucket, R. I.....	1,288,444	716,044	1,062,859
New York, N. Y.....	220,543	147,860	328,013	Philadelphia, Pa.....	16,033,111	14,191,203	21,919,781
<b>Vinegar and Cider.</b>				Trenton, N. J.....	1,115,561	698,220	1,342,400
Brooklyn, N. Y.....	229,312	112,224	255,138	Woonsocket, R. I.....	3,130,945	1,019,463	1,921,151
Chicago, Ill.....	658,580	264,315	539,794	Worcester, Mass.....	1,458,599	835,549	1,374,357
Milwaukee, Wis.....	369,289	157,504	297,518	<b>Worsted Goods.</b>			
St. Louis, Mo.....	469,808	225,982	504,499	Camden, N. J.....	1,075,270	1,154,462	1,668,662
<b>Watch and Clock Materials.</b>				Chester, Pa.....	648,435	811,630	1,249,865
Newark, N. J.....	216,400	159,421	267,500	Fitchburg, Mass.....	1,674,715	1,856,396	2,567,869
<b>Watch Cases.</b>				Lawrence, Mass.....	11,977,697	6,187,575	9,970,336
Boston, Mass.....	228,773	166,097	262,273	Lowell, Mass.....	847,535	708,143	1,209,815
Brooklyn, N. Y.....	631,830	933,235	1,558,993	New York, N. Y.....	564,400	285,640	428,270
Newark, N. J.....	641,987	651,354	1,004,584	Philadelphia, Pa.....	13,644,406	9,398,645	14,737,418
New York, N. Y.....	282,560	371,994	628,660	Providence, R. I.....	12,127,524	10,725,419	17,605,831
Philadelphia, Pa.....	1,565,812	1,155,123	1,914,222	Woonsocket, R. I.....	815,300	746,622	1,030,950
<b>Watch, Clock, and Jewelry Repairing.</b>				<b>All other Industries.</b>			
Baltimore, Md.....	264,579	46,686	219,248	Akron, Ohio.....	2,795,628	1,558,880	2,868,102
Boston, Mass.....	609,668	48,683	418,711	Albany, N. Y.....	4,728,496	3,434,447	6,181,053
Brooklyn, N. Y.....	381,576	68,284	281,176	Allegheny, Pa.....	6,968,359	8,082,316	6,088,130
Buffalo, N. Y.....	280,045	34,583	166,686	Allentown, Pa.....	1,824,263	1,172,311	1,733,538
Chicago, Ill.....	909,207	122,511	605,903	Altoona, Pa.....	7,079,611	5,598,635	8,739,991
Cincinnati, Ohio.....	422,250	110,147	397,260	Atlanta, Ga.....	3,838,500	1,629,599	3,888,901
Minneapolis, Minn.....	222,812	60,697	179,280	Auburn, N. Y.....	2,754,450	1,639,391	2,795,236
New Orleans, La.....	202,259	36,788	169,613	Augusta, Ga.....	1,336,922	659,702	1,422,208
New York, N. Y.....	1,235,055	126,008	770,513	Baltimore, Md.....	20,058,305	8,408,774	13,456,577
Philadelphia, Pa.....	1,272,228	167,945	827,490	Bay City, Mich.....	875,397	867,002	1,379,148
Rochester, N. Y.....	216,571	53,600	116,742	Binghamton, N. Y.....	2,829,256	1,503,207	2,828,487
St. Louis, Mo.....	411,220	49,339	251,838	Birmingham, Ala.....	1,305,540	1,001,743	1,624,709
San Francisco, Cal.....	334,110	39,818	209,225	Bloomington, Ill.....	1,307,536	1,081,846	1,849,991
Washington, D. C.....	234,333	66,220	186,541	Boston, Mass.....	12,959,468	19,796,719	29,511,346
<b>Watches.</b>				Bridgeport, Conn.....	9,971,499	3,516,832	6,944,242
New York, N. Y.....	257,595	53,507	205,500	Brookton, Mass.....	835,089	544,525	1,064,527
<b>Whalebone and Rattan.</b>				Brooklyn, N. Y.....	22,568,855	19,362,767	26,166,416
New York, N. Y.....	288,050	433,410	537,500	Buffalo, N. Y.....	8,788,628	6,169,347	9,424,130
<b>Window Shades.</b>				Burlington, Iowa.....	1,794,273	470,703	2,178,209
Brooklyn, N. Y.....	584,000	345,923	1,560,818	Cambridge, Mass.....	10,335,473	12,701,763	18,367,522
Chicago, Ill.....	380,320	320,448	580,010	Camden, N. J.....	6,460,455	3,751,912	6,371,053
New York, N. Y.....	1,606,399	1,672,623	2,579,499	Canton, Ohio.....	4,569,613	2,246,772	5,662,052
Philadelphia, Pa.....	512,757	402,317	690,894	Charleston, S. C.....	2,899,235	1,854,526	3,192,034
<b>Wirework, including Wire Rope and Cable.</b>				Chattanooga, Tenn.....	2,109,949	1,036,864	2,366,234
Boston, Mass.....	204,125	51,280	181,267	Chelsea, Mass.....	3,506,926	1,888,265	3,069,527
Brooklyn, N. Y.....	496,742	287,582	560,752	Chester, Pa.....	3,040,635	2,468,361	4,162,887
Chicago, Ill.....	708,480	377,241	893,299	Chicago, Ill.....	6,658,431	8,802,667	14,625,958
Cincinnati, Ohio.....	360,694	505,310	750,456	Cincinnati, Ohio.....	6,287,414	5,934,996	9,416,210
Cleveland, Ohio.....	316,518	329,719	495,400	Cleveland, Ohio.....	14,010,255	9,888,549	16,167,471
Covington, Ky.....	236,070	296,350	607,780	Cohoes, N. Y.....	7,685,170	2,499,615	4,658,549
Detroit, Mich.....	212,583	71,700	255,810	Columbus, Ohio.....	5,549,610	3,067,049	5,815,031
Holyoke, Mass.....	288,060	81,459	224,531	Council Bluffs, Iowa.....	511,017	435,087	864,861
New Haven, Conn.....	261,480	91,042	229,282	Covington, Ky.....	3,100,563	2,306,026	4,019,227
New York, N. Y.....	1,069,414	324,095	1,170,745	Dallas, Texas.....	2,264,679	914,028	2,270,493
Philadelphia, Pa.....	470,069	130,158	412,294	Davenport, Iowa.....	3,001,605	1,733,470	2,727,664
St. Louis, Mo.....	690,150	255,792	501,235	Dayton, Ohio.....	4,140,605	3,194,687	5,869,769
San Francisco, Cal.....	1,005,445	798,974	1,053,531	Denver, Col.....	5,256,887	3,023,036	6,454,456
				Des Moines, Iowa.....	1,904,562	2,406,423	3,258,533
				Detroit, Mich.....	8,296,766	4,306,233	7,761,962
				Dubuque, Iowa.....	2,235,568	1,188,119	2,227,738
				Duluth, Minn.....	2,345,902	8,011,096	4,142,875
				Elizabeth, N. J.....	6,242,425	3,327,407	7,609,179
				Elmira, N. Y.....	3,297,566	1,581,737	3,032,834
				Erie, Pa.....	5,839,083	2,149,894	4,892,564
				Evansville, Ind.....	2,367,379	862,318	1,837,984
				Fall River, Mass.....	1,373,218	1,425,066	2,137,931



CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.	CITY AND STATE.	Capital.	Cost of material.	Goods manu- factured.
Fitchburg, Mass.....	\$1,530,710	\$1,067,858	\$2,075,725	Sioux City, Iowa.....	\$1,512,565	\$1,090,191	\$1,896,550
Fort Wayne, Ind.....	1,460,620	835,180	1,656,180	Somerville, Mass.....	3,489,766	3,186,749	4,642,228
Fort Worth, Texas.....	1,512,187	546,786	1,639,056	South Bend, Ind.....	1,719,956	1,248,528	2,496,912
Galveston, Texas.....	4,086,840	2,061,815	3,080,435	Springfield, Ill.....	2,378,054	2,651,826	3,850,658
Gloucester, Mass.....	869,629	535,225	886,242	Springfield, Mass.....	7,491,014	2,014,608	4,989,527
Grand Rapids, Mich.....	3,622,147	1,427,977	3,470,513	Springfield, Mo.....	244,221	52,345	160,040
Harrisburg, Pa.....	3,531,693	2,547,493	5,144,118	Springfield, Ohio.....	2,052,609	886,945	1,789,527
Hartford, Conn.....	7,626,550	3,519,290	7,081,417	Syracuse, N. Y.....	5,815,997	3,582,630	6,371,563
Haverhill, Mass.....	1,145,829	1,077,103	1,999,558	Tacoma, Wash.....	2,036,418	2,034,228	3,145,043
Hoboken, N. J.....	1,999,210	1,573,955	2,866,895	Taunton, Mass.....	1,111,893	1,162,994	1,814,959
Holyoke, Mass.....	3,790,924	2,680,749	4,860,925	Terre Haute, Ind.....	2,852,611	2,697,380	7,551,225
Houston, Texas.....	2,234,261	1,936,104	3,281,828	Toledo, Ohio.....	4,194,494	2,643,552	4,921,822
Indianapolis, Ind.....	4,919,290	2,822,450	5,862,625	Topeka, Kan.....	1,585,878	1,132,370	2,289,386
Jackson, Mich.....	1,434,198	943,103	1,904,244	Trenton, N. J.....	5,567,543	4,075,445	6,687,194
Jersey City, N. J.....	8,031,809	4,108,748	8,090,810	Troy, N. Y.....	3,940,448	1,022,756	3,824,165
Johnstown, Pa.....	12,477,306	12,432,021	16,937,596	Utica, N. Y.....	4,458,815	1,670,322	3,163,712
Joliet, Ill.....	7,866,883	7,245,417	9,636,515	Washington, D. C.....	12,401,953	1,680,479	4,427,603
Kansas City, Kan.....	454,674	197,522	438,565	Waterbury, Conn.....	7,351,152	2,866,665	5,501,608
Kansas City, Mo.....	5,346,107	4,308,566	6,585,182	Wheeling, W. Va.....	1,833,157	1,206,856	2,501,543
Kingston, N. Y.....	562,730	193,916	413,512	Wichita, Kan.....	2,247,590	2,577,405	3,821,858
Knoxville, Tenn.....	1,346,108	1,225,022	2,226,674	Wilkesbarre, Pa.....	3,174,432	2,067,858	3,810,060
La Crosse, Wis.....	941,165	138,473	1,062,306	Williamsport, Pa.....	2,919,054	1,668,468	3,262,499
Lancaster, Pa.....	1,445,016	1,041,081	1,857,245	Wilmington, Del.....	5,723,773	3,457,229	5,966,961
Lawrence, Mass.....	2,495,466	1,833,771	2,560,941	Wilmington, N. C.....	1,432,494	642,853	1,187,990
Lewiston, Me.....	1,505,632	1,226,769	2,201,552	Woonsocket, R. I.....	1,550,643	1,326,530	2,002,405
Lexington, Ky.....	800,996	364,589	785,642	Worcester, Mass.....	10,993,504	8,718,937	14,883,975
Lincoln, Neb.....	1,040,977	655,404	1,250,090	Yonkers, N. Y.....	2,202,083	1,555,794	2,481,111
Lincoln, R. I.....	989,162	603,402	1,130,769	York, Pa.....	1,568,858	1,303,925	2,150,660
Little Rock, Ark.....	917,019	263,378	810,236	Youngstown, Ohio.....	1,471,214	1,921,537	2,632,848
Long Island City, N. Y.....	8,785,058	8,016,373	10,911,688	Zanesville, Ohio.....	1,520,692	1,265,677	1,974,486
Los Angeles, Cal.....	2,760,353	1,019,056	2,015,430				
Louisville, Ky.....	3,117,517	2,331,858	3,935,752				
Lowell, Mass.....	7,118,802	3,835,722	5,873,815				
Lynn, Mass.....	5,739,820	2,411,278	5,505,004				
McKeesport, Pa.....	10,682,111	10,397,088	16,854,676				
Macon, Ga.....	2,402,488	1,118,150	1,918,344				
Malden, Mass.....	7,332,848	5,329,766	8,187,164				
Manchester, N. H.....	6,657,733	3,757,011	5,635,118				
Memphis, Tenn.....	3,252,560	1,488,423	2,878,604				
Meriden, Conn.....	3,355,444	1,091,353	2,772,867				
Milwaukee, Wis.....	8,804,410	4,779,831	8,460,196				
Minneapolis, Minn.....	5,694,022	4,018,911	6,527,090				
Mobile, Ala.....	604,763	277,707	542,777				
Montgomery, Ala.....	1,128,100	1,152,199	1,790,169				
Muskegon, Mich.....	1,144,148	1,015,236	1,468,433				
Nashville, Tenn.....	5,574,050	4,443,494	6,732,704				
New Albany, Ind.....	1,545,738	868,186	1,572,130				
Newark, N. J.....	8,529,245	3,857,169	7,616,021				
New Bedford, Mass.....	3,771,983	1,344,575	3,495,051				
Newburg, N. Y.....	3,524,395	1,528,832	2,944,945				
New Haven, Conn.....	7,173,349	3,035,340	9,209,470				
New Orleans, La.....	6,317,308	1,632,117	3,360,023				
Newport, Ky.....	1,445,846	806,058	1,603,098				
Newton, Mass.....	3,310,302	1,466,313	2,502,122				
New York, N. Y.....	11,647,505	8,307,789	13,170,026				
Norfolk, Va.....	930,992	371,110	820,426				
Oakland, Cal.....	4,616,926	2,127,659	3,907,553				
Omaha, Neb.....	11,469,733	23,974,132	29,581,790				
Oshkosh, Wis.....	1,130,254	533,159	1,198,420				
Oswego, N. Y.....	3,623,538	2,358,655	3,953,355				
Paterson, N. J.....	5,650,633	3,584,776	6,696,547				
Pawtucket, R. I.....	2,839,009	1,260,021	2,433,818				
Peoria, Ill.....	9,700,437	5,480,255	46,092,018				
Petersburg, Va.....	865,754	827,173	1,253,352				
Philadelphia, Pa.....	12,729,648	7,117,868	12,569,087				
Pittsburg, Pa.....	8,938,173	5,693,698	9,855,563				
Portland, Me.....	2,784,139	2,221,022	3,551,121				
Portland, Ore.....	6,423,714	2,080,291	3,664,457				
Poughkeepsie, N. Y.....	2,710,701	1,532,606	2,759,856				
Providence, R. I.....	16,158,193	6,710,084	12,853,589				
Pueblo, Col.....	745,393	310,749	730,763				
Quincy, Ill.....	1,787,590	910,296	1,867,605				
Racine, Wis.....	2,408,011	1,082,969	2,175,577				
Reading, Pa.....	4,714,262	6,223,457	9,336,527				
Richmond, Va.....	3,657,142	2,624,493	4,733,454				
Rochester, N. Y.....	6,821,065	4,975,187	8,694,151				
Rockford, Ill.....	3,393,269	1,606,234	3,020,065				
Sacramento, Cal.....	3,492,761	3,396,196	5,477,360				
Saginaw, Mich.....	1,349,653	1,129,172	1,719,448				
St. Joseph, Mo.....	2,398,414	3,791,914	4,977,573				
St. Louis, Mo.....	19,477,921	12,287,068	22,000,384				
St. Paul, Minn.....	7,322,916	2,784,461	5,092,080				
Salem, Mass.....	3,394,245	1,289,788	2,318,290				
Salt Lake, Utah.....	1,352,966	815,466	1,450,019				
San Antonio, Texas.....	554,089	501,840	949,640				
San Francisco, Cal.....	19,760,270	5,013,338	9,667,921				
Savannah, Ga.....	2,049,859	665,617	1,344,467				
Scranton, Pa.....	2,573,763	2,018,132	3,986,991				
Seattle, Wash.....	564,115	319,627	751,576				

**Summary.**—This statement is intended to exhibit briefly, for rapid reference, the cities most prominent in the matter of capital invested and goods manufactured at the taking of the eleventh census, in 1890, under some of the most important headings. Attention is directed to the explanatory remarks at the beginning of this article.

**Agricultural Implements.**—In 1890, Chicago, Springfield, Ohio, Auburn, N. Y., Akron, Ohio, and Racine, Wis., were, in the matter of capital, much in advance of the 18 other cities mentioned under this heading. In value of products or goods manufactured, it will be noted that Chicago, Springfield, and Auburn take leading rank, followed by South Bend, Akron, and Canton, Ohio. Twelve cities have more than \$1,000,000 invested, and the product in 10 cities exceeds that amount.

**Boots and Shoes: Factory Product.**—In capital in 1890, Lynn, Mass., Haverhill, Mass., Philadelphia, Pa., and St. Louis, Mo., took the lead. In value of goods manufactured, the most important cities were Lynn, Haverhill, Chicago, Philadelphia, and Cincinnati. Of 28 cities mentioned, 13 have a capital exceeding \$1,000,000, and in 20 cities the value of products exceeds that amount.

**Carriages and Wagons.**—The 5 leading cities in capital invested were South Bend, Ind., Cincinnati, Chicago, New York, and St. Louis. The largest amounts under value of products or goods manufactured were shown for Cincinnati, Chicago, New York, St. Louis, and Columbus. Of 58 cities given, the capital in 16 is beyond \$1,000,000, and in 15 cities the value of products exceeds that amount.

**Clothing, Men's.**—New York, Chicago, Boston, Cincinnati, and Baltimore were millions ahead of other cities in the amount of capital invested under this heading, the same cities also leading in value of products. Thirty-one cities are mentioned, and of these the capital invested in 15 cities (1890) exceeds \$1,000,000. In value of



products, 18 cities report amounts aggregating more than that sum.

*Clothing, Women's.*—New York is reported as having by far the largest amount of capital invested in this industry. The other cities nearest in rank are Chicago, Philadelphia, Cincinnati, and San Francisco. The first 4 named are also highest in value of products, Cleveland being the fifth. Of the 14 cities reported, the capital in 7 cities (1890) is more than \$1,000,000, and the value of products in 8 cities exceeds that amount.

*Cotton Goods.*—Fall River, Mass., is the most conspicuous in the matter of capital invested, those cities coming nearest being Lowell, Mass., New Bedford, Mass., Manchester, N. H., and Philadelphia. In value of products the cities rank as follows: Fall River, Lowell, Philadelphia, Manchester, N. H., and New Bedford, Mass. Among 27 cities in the list 21 employed (1890) more than \$1,000,000 capital, and the value of products in 20 cities exceeded that amount.

*Grist-mill Products.*—Minneapolis, St. Louis, New York, Akron, Ohio, and Milwaukee, Wis., take the lead in capital invested. Minneapolis, St. Louis, New York, Chicago, and Rochester, N. Y., take rank in the order named as to value of products. Of the 48 cities given under this industry, the capital in 9 cities is more than \$1,000,000, and in 33 cities the value of products exceeds this amount.

*Foundry and Machine-shop Products.*—The 5 cities leading in capital invested were Philadelphia, Chicago, New York, Brooklyn, and St. Louis. The ranking in value of products for the same year was as follows: Chicago, Philadelphia, New York, Brooklyn, and St. Louis. The number of cities given under this heading is 128. Of these, the amount of capital in 61 cities exceeds \$1,000,000, and in 59 cities the value of products or goods manufactured exceeds that amount.

*Iron and Steel.*—Pittsburg, Chicago, Cleveland, Ohio, Scranton, Pa., and Youngstown, Ohio, hold the highest rank in amount of capital invested and value of products. Out of 19 cities given, the capital invested and value of products in 18 exceeds \$1,000,000.

*Leather.*—The 5 leading cities in capital invested under this heading are Milwaukee, Wis., Chicago, Cincinnati, Louisville, Ky., and Allegheny, Pa. Those highest in rank in value of products are Milwaukee, Chicago, Cincinnati, Allegheny, and Louisville. Ten cities of the 20 included in the list have more than \$1,000,000 capital invested, and in 12 cities the value of products exceeds that amount.

*Liquors, Malt.*—In amount of capital invested in the manufacture of malt liquors, New York holds first place. Next in order of rank are Philadelphia, Chicago, St. Louis, and Milwaukee. In value of products the cities rank thus: New York, St. Louis, Brooklyn, Milwaukee, and Philadelphia. There are 54 cities mentioned. Of these, the capital invested in 28 is more than \$1,000,000; the value of products in 24 cities exceeds that amount.

*Lumber and Similar Products.*—The principal cities in the matter of capital were Minneapolis, Minn., Muskegon, Mich., Williamsport, Pa., Bay

City, Mich., and Saginaw, Mich. In value of products, Minneapolis, Bay City, Muskegon, Oshkosh, Wis., and Williamsport are most conspicuous. Thirty-nine cities are shown, and of this total 22 had (1890) more than \$1,000,000 capital invested, and the value of products in 19 cities exceeded that amount.

*Printing and Publishing, Book and Job.*—In this industry New York, Philadelphia, and Chicago are far ahead of any other cities. The 2 next in capital invested are St. Louis and Cincinnati. In value of products the cities rank as follow: New York, Chicago, Philadelphia, Cincinnati, and Washington, D. C. Of the 45 cities given under this heading, the amount of capital invested and value of products in 10 is more than \$1,000,000.

*Other Industries.*—The same method of comparison can readily be adopted with reference to the other industries given by cities in detail. Among the most important not included above, but well worthy of examination, are bookbinding, brick and tile, chemicals, furniture, jewelry, shipbuilding, silk and silk goods, slaughtering and meat packing, woolen goods, and worsted goods. As a matter of fact, the cities in many instances do not hold the same rank in the several industries to-day that they held when the eleventh census was taken; but the scope of the investigation was so broad, and the ground to be covered so extensive, that the figures given have but recently been made available in corrected form. State statistics of more recent date will, in many instances, be found under the State name in each year's issue of the "Annual Cyclopædia." The figures given in this article are the latest Federal statistics, and will remain so until the taking of the twelfth census, in 1900.

**MARYLAND**, a Middle Atlantic State, one of the original thirteen, ratified the Constitution April 28, 1788; area, 12,210 square miles. The population, according to each decennial census, was 317,728 in 1790; 341,548 in 1800; 380,546 in 1810; 407,350 in 1820; 447,040 in 1830; 470,019 in 1840; 583,034 in 1850; 687,049 in 1860; 780,894 in 1870; 934,945 in 1880; and 1,042,390 in 1890. Capital, Annapolis.

**Government.**—The following were the State officers during the year: Governor, Frank Brown, Democrat; Secretary of State, Edwin Gott; Comptroller, Marion de Kalb Smith; Treasurer, Spencer C. Jones; Insurance Commissioner, Thomas J. Keating; Superintendent of Public Instruction, E. B. Prettyman; Adjutant General, Henry Kyd Douglas; Attorney General, John P. Roe; Chief Justice, J. M. Robinson; Clerk of the Supreme Court, J. Frank Ford.

**Finances.**—The balance in the treasury at the close of the fiscal year, Sept. 30, 1894, was \$550,074.47, the receipts during the year were \$2,609,244.09; total, \$3,159,318.56. The amount of disbursements during the year was \$2,454,750.37. This is less than the sum of disbursements during the previous fiscal year by \$170,329.41, and the balance in the treasury Sept. 30, 1895, was \$704,568.19.

The amount remaining to the credit of the Free School fund at the close of the fiscal year 1894 was \$5,843.50. The receipts during the last fiscal year on account of the same fund were

\$73,300.65. The disbursements from this fund for the same period amounted to \$77,144.15, leaving a balance Sept. 30, 1895, of \$2,000.

The receipts on account of the several sinking funds during the fiscal year were as follow: general fund, \$24,216.70; for defence redemption loan, \$346,200.17; for the exchange loan, 1889, \$6,641.38; for the exchange loan, 1886, \$10,115; total, \$387,173.25.

The funded debt of the State at the close of the fiscal year 1895 was \$8,684,986.24. The productive assets and the investments to the credit of the sinking funds aggregate \$5,679,733.11. No allowance is here made for the amounts overdue from incorporated institutions, collectors of taxes and other accounting officers, aggregating \$684,812.69, nor for the difference between par value and market value of the assets. If these were treated at the market value, the net debt of the State would be practically extinguished.

**Taxation and Valuation.**—The assessment of real and personal property for the fiscal year 1895 was \$534,930,476, being greater by \$5,792,393 than that of 1894.

The levy for State taxes for 1895 on real and personal property, at 17½ cents on each \$100, amounted to \$949,501.59. From collectors was received during the fiscal year \$908,411.18, an increase of \$33,252.29 over the receipts of 1894.

From railroads and other corporations was received, as a tax on gross receipts during the year, \$131,788.71, being \$4,471.59 less than was received in 1894. From the tax on the capital stock of incorporated institutions the receipts were \$77,495.30, a decrease of \$8,720.58. For licenses and from tax on premiums paid to insurance companies \$124,401.48 was collected, an increase of \$3,398.58 over receipts from the same source during 1894. Registers of wills paid in \$141,599.82, \$23,875.84 more than the preceding year, and clerks of court \$896,100.83.

The levy for public schools, at 10½ cents on each \$100, amounted to \$561,677; the receipts from all sources during 1895 were \$608,629.74; the balance from 1894, was \$264,826.71; the total disbursements during the fiscal year 1895 were \$601,088.04, leaving a balance of public-school money applicable to school year beginning Oct. 1, 1895, of \$272,368.41, on which date \$102,625 was distributed to white schools and \$25,000 to colored schools.

Under the provisions of the oyster act of 1894 the revenue of the oyster fund has increased, while there has been a decrease in expenditures. The receipts for 1895 were \$64,994.09, being greater than the receipts for the previous year by \$20,345.40. The disbursements for the same period were \$61,410.42, leaving a balance for 1895 of \$3,583.67. Included in these disbursements is \$4,306.99 balance due on 1894 and other sums aggregating \$10,457.27, so that the actual disbursement on account of maintenance of the oyster police fishery force for the fiscal year was \$50,953.15, and the revenue above this amount \$14,040.94.

**Education.**—In the year ended July 31, 1895, the number of persons in the counties of Maryland between the ages of five and twenty years was 230,876; in Baltimore city, 140,016. The colored school population in the counties num-

bered 62,091; in Baltimore, 20,594. For the support of the schools the counties received from the State \$441,587.95, and from local taxation \$537,454.67. Baltimore received from the State \$214,726.14, and from local taxation \$793,658.49. The total of disbursements for schools in the counties was \$1,263,487.71; for Baltimore city, \$1,125,759.91.

**State Institutions.**—Under an act of the last Legislature \$75,000 was appropriated to the purchase of a site and buildings for a second hospital for the insane, and \$25,000 as a maintenance fund. In September \$50,000 was paid for 530 acres in Carroll County, near Sykesville, on which are the historic Patterson mansion and other buildings, now in process of preparation for patients. A resident physician was selected whose salary was fixed at \$2,500.

At the Maryland Blind Asylum a new building, 82 feet long and 3 stories high, was completed this year. In this institution at the end of the fiscal year there were 23 pupils.

For its hospitals, asylums, and reformatories the State paid out, during 1895 more than a quarter of a million dollars.

**Savings Banks.**—An act of 1894 provides that in October, 1895, and every second year thereafter, there shall be sent to the Comptroller by the treasurer of every savings institution in the State, a sworn statement giving the name of every depositor not known to said treasurer to be living, who has not added to or decreased his deposit during the preceding twenty years, with the amount standing to his credit. Several banks in the city of Baltimore this year complied with this provision. The number of depositors in the savings banks during 1895 was 148,342, who had to their credit \$45,490,279.

**Chesapeake and Ohio Canal.**—From two acts passed at the session of 1894, making provision for payment of certain obligations against this canal, the Governor withheld his signature, with the desire to have all particulars of the indebtedness determined. Without interest, the obligations are found to amount to \$176,324.65. Within the year the Board of Public Works offered for sale the State's interest in the canal, and the two bids submitted, the higher being of \$526,000 with certain conditions, were rejected, and other bids were invited. As litigation affecting the State's interest had not been determined in December, the board then adopted resolutions that any bids that might thereafter be tendered to the board be returned to the bidders unopened, and advising that the property be sold at auction to the highest bidder.

**Mineral Production.**—The Bureau of Mines and Mining, of the Geological Survey, in its reports of 1895 states that for 1894 the coal output was 3,501,428 short tons, valued at \$2,687,270; the value of the marble output was \$175,000; of the limestone, \$672,786; the granite was worth \$308,966; and the slate, \$69,138.

**Industrial Statistics.**—The third annual report of the Bureau of Industrial Statistics states that in the sweat shops of Baltimore during 1894 wages were reduced 50 per cent., and compensation for female labor was brought to starvation figures; while in none of the shops did the employees make more than half time. As to the value of personal estates, the following



figures are given: During the period from 1888 to 1893, inclusive, 5,914 estates were probated, the value of which was \$59,055,568. Of these, 89, or 1.5 per cent., were over \$100,000, and aggregated \$25,836,140, or 44 per cent. of the whole value. The estates under \$10,000, to the number of 5,045, aggregated \$9,941,531, while the 869 estates over \$10,000 aggregated \$49,114,037.

**Soldiers' Monument.**—Congress in February appropriated \$40,000 for a monument in Baltimore to Gen. William Smallwood and other



Maryland heroes of the Revolutionary War. The money is to be expended under the direction of the Maryland Society, Sons of American Revolution.

**Electric Railways.**—The Maryland and Columbia Electric Railway Company this year began the construction of an electric railway between Baltimore and Washington, which is said to be the American pioneer of electric trunk-line railroads and the beginning of a great system that will connect New York and New Orleans. The company received its charter in 1892. The line now under construction extends from Baltimore to Washington, 37 miles. It will be laid with double tracks of 85-pound "T" rails, standard gauge. The bed will be similar to that of the Pennsylvania system, and the design is that the passenger coaches shall correspond to those now running on steam railways. The authorized capital stock is \$4,000,000, and it has been bonded for \$6,000,000.

The Baltimore and Ohio Railroad has in operation a 96-ton electric locomotive, which handles its freight traffic through the belt-line tunnel at Baltimore. Other engines of the same type will soon be in service, whose duty it will be to haul every day about 100 trains, weighing from 500 to 1,200 tons, 3 miles through the tunnel.

**Political.**—The election in November was to fill the offices of Governor, Comptroller, and Attorney-General, and members of the Legislature.

The Democratic State Convention met in Baltimore, July 31, and framed a platform which declared its "unabated confidence in the wisdom, patriotism, and fidelity of President Cleveland," denounced the McKinley tariff law, and said: "In its stead we have a law which, while not containing all that the advanced advocates of tariff reform hoped would be secured, gives us, nevertheless, the best tariff which the country

has had for thirty-five years, and enables us to exult in the accomplished fact that under its practical operation we have come to the full enjoyment of the blessings of restored confidence and renewed prosperity in all branches of industry, while at the same time the national Treasury will be supplied with revenues sufficient to meet all obligations of the Government and maintain unimpaired its high credit at home and abroad." The administration of Gov. Brown was commended, and the following resolution was adopted:

Regarding uniform and equal taxation as a matter of controlling and paramount obligation, we call especial attention to the necessity of reassessment, and pledging the party, through its delegates in convention assembled, to an unqualified fulfillment of this pledge, we further recommend and appeal to the Democratic voters of the State to exact of their representatives on the Democratic tickets a solemn promise to carry out the wishes of the people for a fair and equitable assessment of the entire property of the State.

John E. Hurst was nominated for Governor, Marion de Kalb Smith for Comptroller, and Charles C. Crothers for Attorney-General.

The State Convention of Prohibitionists met in Glyndon, Aug. 1. The platform declared anew for absolute suppression of the sale of liquor as a beverage; favored an income tax; declared that import duties should be levied primarily upon luxuries; desired a currency of gold, silver, and paper, all of equal value, and to be secured by the Government; declared that United States Senators should be elected by direct vote of the people, and that immigration should be restricted; favored the system of legislation known as initiative and referendum, observance of the Sunday law, restriction of child labor and working hours for women in factories, and general weekly payment of wages; laws for reassessment of the property of the State; placing public roads under State supervision; and woman suffrage. Joshua Levering was nominated for Governor; J. L. Nicodemus, for Comptroller; and W. Frank Tucker, for Attorney-General.

The Republican State Convention met in Baltimore, Aug. 15. Its platform declared that a Republican victory in the State would insure to the people the prompt passage of a reassessment law so framed that every person holding property in the State should contribute his proportion of public taxes for the support of the Government, according to his actual worth in real or personal property; urged the necessity for the adoption of an amendment of the State Constitution, effectually limiting the debt-incurring capacity of cities and counties; promised that a free and fair expression of the public will at the polls should be made possible, and control of the machinery of their election be restored to the people of the several counties; that registration should be made annual in Baltimore, and quadrennial, with annual revision, in the counties; that the supervisory powers of the courts over the action of the registers should be made effective and not illusory, and that the right to places on the official ballot should be secured to the nominees of independent citizens, as well as to those of the regular party organizations; promised to secure such amendments of

the school laws as should exclude politics from school management and secure free schoolbooks to the pupils, and to submit to popular vote the question whether appointments to the police, fire, and all other departments of public service should be in accordance with the principles of the merit system; and condemned the partisan management of the oyster police force, and denounced every effort to deprive the people of their independent rights to the public oyster beds and the leasing and selling of them. Lloyd Lowndes was nominated for Governor; Robert P. Graham, for Comptroller; and Harry M. Clabough, for Attorney-General.

At the election in November the Republican ticket was successful, the vote cast being as follows: Lloyd Lowndes, Republican, 124,936; John E. Hurst, Democrat, 106,169; Joshua Levering, Prohibitionist, 7,719; and for Henry F. Andrews, candidate of the Populist and Labor parties, 1,381. The Governor's plurality was 18,767. The Republican candidates for Comptroller and Attorney-General also were elected. The composition of the Legislature of 1896 is: In the Senate, 12 Republicans and 14 Democrats; in the House, 70 Republicans and 21 Democrats.

**MASSACHUSETTS**, a New England State, one of the original thirteen; ratified the Constitution Feb. 6, 1788; area, 8,315 square miles. The population, according to each decennial census, was 378,787 in 1790; 422,845 in 1800; 472,040 in 1810; 523,159 in 1820; 610,408 in 1830; 737,699 in 1840; 994,514 in 1850; 1,231,066 in 1860; 1,457,351 in 1870; 1,783,085 in 1880; and 2,238,943 in 1890. By the State census of 1895 it was 2,500,183. Capital, Boston.

**Government.**—The following were the State officers during the year: Governor, Frederick T. Greenhalge; Lieutenant Governor, Roger Wolcott; Secretary of State, William M. Olin; Treasurer, Henry M. Phillips till April, when he resigned and was succeeded by Edward P. Shaw; Auditor, John W. Kimball; Attorney-General, Hosea M. Knowlton; Adjutant General, Samuel Dalton, all Republicans; Chief Justice of the Supreme Court, Walbridge A. Field; Associate Justices, Charles Allen, Oliver W. Holmes, Marcus P. Knowlton, James M. Morton, John Lathrop, and James M. Barker.

**State Census.**—This was taken during the year, giving a total of 2,500,183 for the population of the State and 560,802 for the number of legal voters. By counties the population was as follows: Barnstable, 27,654; Berkshire, 86,292; Bristol, 219,019; Dukes, 4,238; Essex, 330,393; Franklin, 40,145; Hampden, 152,938; Hampshire, 54,710; Middlesex, 499,217; Nantucket, 3,016; Norfolk, 134,819; Plymouth, 101,498; Suffolk, 539,799; Worcester, 306,445. The population of Boston is 496,920; Worcester, 98,767; Fall River, 89,203; Lowell, 84,367; Cambridge, 81,643; Lynn, 62,354; New Bedford, 55,251; Somerville, 52,200; Lawrence, 52,164; Springfield, 51,522; Holyoke, 40,322; Salem, 34,473; Brockton, 33,165; Chelsea, 31,264; Haverhill, 30,209; Malden, 29,708; Gloucester, 28,211; Newton, 27,590; Taunton, 27,115; Fitchburg, 26,409.

**Valuations.**—The total valuation of assessed estate, May 1, 1895, was \$2,542,348,993, the real

estate being valued at \$1,964,834,106 and the personal property at \$577,514,887. Of the real estate, the value of land, excluding buildings, was \$973,660,883. Of the personal estate, \$38,355,674 was resident bank stock. The number of persons assessed was 922,850, of whom 492,386 were for poll tax only. The number of non-residents assessed was 81,058. The tax for State, county, and city or town purposes, including overlappings, was \$38,084,609. The number of dwellings was 404,388; of horses, 195,483; of cows, 175,016; of sheep, 39,843, of swine, 37,994; of neat cattle other than cows, 36,817; of fowls, 536,244. The number of residents assessed on property in Boston was 47,566; of nonresidents, 4,701; the number assessed for poll tax only was 124,207. The value of assessed real estate in Boston was \$744,751,050; and of personal estate, \$206,616,878.

**Charities.**—The total number of insane under supervision of the State Board of Lunacy and Charity was: In hospitals and asylums, 5,763; in town almshouses, 803; in private families, 202. The total receipts at the 6 State hospitals were \$811,503.47; the expenditures \$819,217.95. The weekly cost of patients was \$3.29. There were 327 recoveries and 446 deaths. The asylum at Medfield is nearly finished.

The State Primary School, at Monson, was closed July 1. It has been maintained twenty-nine years as a place of maintenance and education for boys and girls who must otherwise have been in the almshouse, during which time it has received over 6,000 inmates. The plan of boarding pupils out was adopted in part in 1882 and extended from time to time. There were 110 inmates at the time of closing, most of them juvenile offenders. The current expenses of the school during its last nine months were \$24,012.92, giving a *per capita* cost of \$7.06, this high rate being due to the sudden changes of plan in reference to carrying on the school.

The Lyman School, at Westborough, for reforming boy offenders is in its forty-ninth year. The aggregate number in the school within the year was 436, and the average was 240. Besides the 264 boys in the school at the close of the year there were 635 others who had left the school either on probation or by transfer to other institutions. The total appropriation was \$61,160. The expenditures from Oct. 1, 1894, to Sept. 30, 1895, were \$57,237.58; the gross *per capita* was \$4.46.

In the State Industrial School for Girls, at Lancaster, there were 367 in custody in the school and out on probation at the beginning of the year. During the year 65 who had been placed out were recalled and 72 were committed; the average number at the school was 116. The cost of the school from Sept. 30, 1894 to Sept. 30, 1895, was \$28,801, a *per capita* of \$4.62. A new house was opened in June, and the girls are now divided into 5 families.

At the State Hospital for Dipsomaniacs and Inebriates, at Foxborough, there were 110 inmates at the beginning of the year, 212 admitted, and 129 remaining Sept. 30, 1895. The State appropriation was \$20,000; the whole expense, \$52,838.64. This institution is reported in an unsatisfactory condition. Patients continue to escape in large numbers.



The School for the Feeble-minded, at Waltham, had 423 inmates at the end of the year. The average *per capita* cost is \$3.15 weekly. The admissions are fewer than the applications, on account of lack of room and funds.

In the Hospital Cottages for Children, at Baldwinville, there were 109 patients at the beginning of the year and 105 at the end. The expenses were \$27,797.68.

The Legislature of 1885 passed an act to establish a hospital for epileptics at Monson, on the premises occupied by the State Primary School. Building will be begun in the spring.

The report of the Perkins Institution and Massachusetts School for the Blind gives the number of pupils in the institution as 153, and in the kindergarten 64. A class of 4 was graduated in June, the exercises being held in the Boston Theater before an audience of more than 2,500 persons.

The number admitted to the State Almshouse, at Tewksbury, was 3,071. The average number was 1,167. The expenditures were \$138,802.76, and the weekly *per capita* cost \$2.29.

The whole number of poor receiving relief in the State for the year ending Sept. 30, 1895, was 74,466, and the cost was \$2,631,221.

**Prisons.**—In the year ending Sept. 30, 1895, the State Prison received 172 prisoners and discharged 141, leaving 700, the highest number since 1880, and 34 more than at the end of the previous year. The cost of support was \$138,475.02, and the labor of the prisoners yielded a profit to the State of \$28,903.29, making the cost to the State \$109,571.73.

The Reformatory Prison for Women received 334 prisoners, and at the close of the year there were 336 remaining, 13 more than in the preceding year and the highest number since 1879. The expenditures were \$58,430, and the net cost of support \$39,181.06, the labor having amounted to \$16,775.96 and sales making up the balance. The net cost for each prisoner was \$128.89.

At the Massachusetts Reformatory 815 prisoners were received, and the number remaining at the close of the year was 1,011. The average age of those committed was twenty-one years. There was expended for maintenance for the year \$209,211.72. The net cost was \$162,743.65; the average population was 1,036, making the gross *per capita per diem* cost \$0.553.

The average number of prisoners in the county prisons was 3,190, and the expenditures were \$470,411.62. The gross cost for each prisoner varied from \$98.22 at the Springfield Jail and House of Correction to \$304.91 at the Edgartown Jail, where the average number of prisoners was only 2. The net cost varied from \$76.96, at the Salem House of Correction, with an average of 145, to \$304.91, at Edgartown. The largest number was at the Boston House of Correction, where the *per capita* cost was \$116.32 net.

The Boston House of Industry had an average of 1,491 prisoners; the expenditures were \$157,491.33, and the receipts \$48,322.78.

The State farm had an average number of 1,002, of whom 529 were convicts, the remainder paupers and lunatics. The expenditures were \$98,502, and the receipts \$5,908.

The whole number of prisoners in all the prisons within the year was 44,376, of whom 36,748

were discharged or otherwise withdrawn during the year, leaving 7,628 in custody Sept. 30, 1895.

**Civil Service.**—The annual report of the commission, made in October, shows that the present classified service, ever increasing and varying, includes, outside of the labor service, about 5,500 public servants, drawing from the public treasuries of the Commonwealth and her cities an aggregate annual compensation of over \$4,000,000. The expense of the commission in classifying, examining, and certifying applicants for these offices is less than half of 1 per cent. of their compensation. Of those examined, 1,551 passed and 785 were appointed, of whom 158 were women. The number of veterans appointed under the Veteran Exemption law passed by the last Legislature was 124, against 59 in 1894.

**Against Prize Fighting.**—The jury, in a trial in the Superior Criminal Court for prize fighting, having decided that the defendants had not engaged in a fight, but only a boxing match, the movement against this sort of exhibition has been spreading with great rapidity. Protests were heard all over the State, and Sept. 30 a meeting called by the Christian Endeavor Union was held in the People's Temple, Boston, at which resolutions were adopted expressing sympathy with the Governor of Texas in his efforts to prevent prize fighting in his State, and commending the police commissioners in Boston for their action in making the arrests.

**Good Roads.**—The State Highway Commission had constructed 89 miles of first-class roads before the end of the year. The plan is to join the centers of trade and connect with through roads in adjoining States by means of these highways. They will be of varying width, some 18 feet wide, some 15, while in more thinly settled districts they may be not more than 9 feet, with wider portions at intervals.

**Strikes.**—Haverhill was the scene of labor trouble throughout the year on account of disagreements as to wages in the shoe factories. There was a strike at Waltham in August involving over 300 employees, mostly spinners. At Fall River there was trouble between the Spinners' and the Weavers' Union, and at Amesbury 400 weavers struck in June. There was a strike of spinners at Andover in May.

**Celebrations.**—Manchester, in Essex County, celebrated the two hundred and fiftieth anniversary of its settlement, July 18, with an historical entertainment representing the "Arabella" bringing Gov. Winthrop and his meeting with the Naumkeags and Masconomos, and with other festivities. A collection of antiquities of the town was exhibited. In connection with the anniversary a history of Manchester has been published by the town.

The Nantucket Historical Society held July 9-11 a celebration of the one hundredth anniversary of the change of name of the town from Sherburne to Nantucket, with boat races, a banquet, and literary exercises.

The Pilgrim Society celebrated Dec. 21 the two hundred and seventy-fifth anniversary of the landing of the Pilgrims at Plymouth. Hon. George F. Hoar was the orator of the day, and Richard H. Stoddard the poet.

Lawrence celebrated the semicentennial of the

founding of the city Sept. 16 and 17 with literary exercises, athletic exhibitions, a regatta, a parade, and a banquet.

The Third Army Corps held a reunion at Hadley May 7 and placed a tablet on the house where Gen. Joseph Hooker was born, in 1814. Gen. Sickles addressed 3,000 people in a tent on the green in front of the house.

**Fisheries.**—A controversy arose in February over a cargo of herring which were bought in Newfoundland by United States fishermen. Free entry was claimed for the herring and sustained by the collector at Gloucester, where the vessel touched; but at Boston, where it entered, the collector assessed a duty. A reference to the Board of General Appraisers brought out the decision that the fish, having been taken by Newfoundland fishermen and delivered salted, were subject to duty.

Interest in whaling in Hudson Bay has revived in New Bedford, and more vessels went to that locality during the year, some with the intention of wintering there.

The halibut fishing in Greenland waters was reported a failure this year. Ice, fog, and rain interfered with operations. Large receipts from the Grand Bank, however, were reported, where it is said a new fishing ground has been found and halibut have been taken in great abundance.

**Legislative Session.**—This began Jan. 3 and ended June 5. Hon. George F. Hoar was re-elected to the United States Senate by a vote of 180 in the House and 34 in the Senate, against 39 and 4 for John E. Russell.

During the session the Governor signed 504 acts and 127 resolves, vetoed 16 bills, and allowed 2 to become laws by statutory limitation, withholding his signature. The most important among the measures passed was the act to provide for a metropolitan water supply. It creates a water board, who are to construct, maintain, and operate a system of metropolitan water works and provide thereby a sufficient supply of pure water for the cities of Boston, Chelsea, Everett, Malden, Medford, Newton, and Somerville, and the towns of Belmont, Hyde Park, Melrose, Revere, Watertown, and Winthrop, which cities and towns shall constitute the Metropolitan Water District. Bonds may be issued on the request of the board to an amount not exceeding \$27,000,000.

An act to revise the charter of Boston provides that the mayor shall be elected for the term of two years. The election department, the fire department, the water department, and the institutions department are created as departments of the city, and officers are designated to have them in charge. The offices of registrars of voters and the board are abolished, and their duties devolve upon the Boston Ballot-law Commission, made up of 4 election commissioners, 2 of the party that cast the highest vote at the election next preceding their appointment, and the other 2 of the party casting the next highest vote. There is to be 1 fire commissioner, 1 water commissioner, and 1 institutions commissioner, the corresponding boards being abolished. The offices of inspectors of milk, vinegar, provisions, and animals intended for slaughter are abolished, and their

duties devolve on health inspectors appointed by the city board of health. Other departments and offices abolished are the surveying department and office of surveyor, the architect department and office of city architect, and the board of survey, their work being given to the city engineer, the superintendent of public buildings, and the street commissioners.

The charters of several other cities were amended.

An act to be known as "the Caucus act of 1895" provides strict rules for the control of political committees and caucuses. Some changes were made in the registration law.

Provision was made for establishing textile schools for instruction in the theory and practical art of textile and kindred industries in cities having 450,000 or more spindles.

Other acts of the session were:

Appropriating \$50,000 for expenses in connection with the extermination of contagious diseases among animals.

Appropriating \$125,000 for taking the decennial census, in addition to the \$25,000 appropriated in 1894.

Requiring specifications of the character of work required and rate of compensation to be furnished to persons employed in cotton, worsted, and woolen factories.

Incorporating the city of North Adams.

Authorizing savings banks to invest in and loan upon bonds of the States of Missouri and Minnesota and such cities thereof as have a population of 30,000 or more and whose net indebtedness does not exceed 5 per cent. of their assessed valuation.

Requiring school committees to furnish public schools with national flags.

Providing for the seizure and disposition of property found where opium is smoked or sold or given away to be smoked, and for punishment of persons there found present.

Exempting disabled soldiers and sailors from taxation upon \$2,000 worth of property, provided the whole estate does not exceed \$5,000, exclusive of property otherwise exempted.

To prevent fraudulent transfer of property by insolvent debtors.

Providing that tenement houses in Boston shall have adequate open spaces.

Providing for the teaching of illiterate prisoners.

Providing that any political party which at the five annual State elections next preceding shall have east for any office voted for at a State election as large a number of votes as equals the number of petitioners required to nominate for that office by nomination papers, may nominate candidates for any such office, and shall be entitled to have the names of its candidates printed on the official ballot, subject only to such restrictions as apply to a party that casts 3 per cent. of the vote for governor.

Prohibiting the sale of intoxicating liquors on Feb. 22 and July 4.

Making certain army nurses eligible to receive State aid.

Authorizing the appointment of a registrar of labor by the civil-service commissioners, at a salary of \$2,000.

Imposing fine or imprisonment for feeding food animals with garbage refuse or offal.

To regulate the observance of Sunday, providing that no entertainment shall be given on that day for which a fee is charged, unless the proceeds are to be exclusively devoted to charitable or religious purposes, and imposing a fine of \$5 on any person attending such a performance, and \$50 on any one who gives or takes part in it, and \$500 on the owner of any hall where this law is violated. The \$50



fine is imposed also on any one who on the Lord's Day keeps open his shop, warehouse, or workhouse, or does any manual labor, business, or work, except works of necessity and charity.

Exempting veteran soldiers and sailors from the payment of fees for auctioneers' licenses.

Incorporating the Massachusetts Ship Canal Company.

Giving preference to veterans for employment in the public service.

Providing that any person or corporation engaged in manufacturing, which requires from persons in his or its employ, under penalty of forfeiture of a part of the wages earned by them, a notice of intention to leave such employ, shall be liable to the payment of a like forfeiture if he or it discharges without similar notice a person in such employ.

Amendments to the Constitution were proposed by which State elections are to be held biennially and State officers and members of the General Court are to be chosen for terms of two years. A person shall be eligible as Treasurer and Receiver General for three successive terms, and no more. If the amendments are agreed to by the General Court next to be chosen they will be submitted to the people, and if they are ratified the first election to which the change will apply will be that of November, 1898.

Other resolves were :

Relative to national legislation for the suppression of the lottery traffic.

In favor of uniform hours of labor throughout the country.

To provide for the preservation of the Bullfinch Statehouse on Beacon Hill.

To provide for printing and distributing the "Massachusetts Military and Naval History," by Thomas W. Higginson, State historian.

Directing the payment of a sum not exceeding \$150,000, to be expended under the direction of the State Board of Agriculture, for continuing the work of exterminating the gypsy moth.

For marking and mapping the line between Massachusetts and New Hampshire.

The Committee on Mercantile Affairs spent ten days in the South, investigating the conditions of cotton manufacture with a view of determining what measures should be taken to prevent New England mills from being removed to the South. The experience of manufacturers seems to have led them to the conclusion that, while the South has several natural advantages over the North in this respect, such as the nearness of the cotton fields, an equable climate, daylight all the year to work by, and abundant water power, and has now, in addition, cheaper coal and cheaper labor, one great source of advantage is the result of labor legislation in Massachusetts by which the hours are shortened and employers are harassed by such bills as the Employers' Liability bill and the Weavers' Specification bill: sixty-six hours' work against fifty-eight makes a great difference. Moreover, the offers from the Southern States include exemption from taxation for ten years.

In a report of the Commission on the Unemployed, made to the Legislature, several propositions for relief are discussed. The conclusion is that neither State factories nor State farms are practicable. After considering the suggestion that public works should be constructed directly by the public authorities, and that no work

should be done by contract, the commission concludes that it is only in exceptional instances that a city can do its work as cheaply as a private employer of labor; and that "a rate of wages fixed in certain public departments higher than that earned by the average laborer elsewhere is an evil in several ways." The committee do not, therefore, recommend legislation restricting the rights of cities to let work by contract. They find that the evil of nonemployment is greatly aggravated by the influx of nonresidents and sometimes aliens, and that it should be the policy of municipalities and public bodies making contracts to secure the employment of residents as far as possible, and to prevent the introduction of large gangs of nonresidents, and to prevent also the sending of work out of the State, even though at a reduction of expense.

**Political.**—The Democratic State Convention met at Worcester, Oct. 2, and nominated the following: For Governor, George F. Williams; Lieutenant Governor, James S. Grinnell; Secretary of State, Edward J. Flynn; Treasurer, Eben S. Stevens; Auditor, Alfred C. Whitney; Attorney-General, Henry F. Hurlburt. A platform was adopted commending the national Administration "for its dignified, energetic, and patriotic management of our foreign affairs, for the economies and reforms effected in all branches of the Federal service and many appointments in civil service, particularly the recent order affecting the consular service," congratulating the manufacturing interests of the State on the successful operation of the present tariff, declaring that the increase of exports under the reduced duties will furnish sufficient revenue for the Government, and denouncing the efforts of the Republican party to reopen the tariff question; it demanded the maintenance of the existing gold standard, opposed free coinage of silver and any further purchase of silver bullion by the Government, declared that the Government should not "carry on a banking business," "that the untaxed notes of State or national banks shall be the only credit currency, and that the Government shall, with the development of a banking system adequate to the demands of trade, retire as rapidly as possible all United States paper money."

Home rule for cities was favored, and the Republican party was denounced for its efforts "to centralize the police power of cities in the Governor of the State."

The Republican Convention was held in Boston Oct. 5. There were two candidates for the gubernatorial nomination—Gov. Greenhalge and Elijah A. Morse. The vote stood: Greenhalge, 1,363; Morse, 391. The other nominations were: For Lieutenant Governor, Roger Wolcott; Secretary of State, William M. Olin; Treasurer, E. P. Shaw; Auditor, J. W. Kimball; Attorney-General, Hosea M. Knowlton. The platform condemned the tariff policy of the Democratic party, and said that "the Republican party is not pledged to any schedule, but offers to each American industry such protection as shall equalize differences in price of labor," and that "the farmer and the miner are as much entitled to it as the manufacturer," and that "if Republicans were liberal in appropriations they furnished revenue to meet them, and steadily re-

duced the public debt. The last Congress provided a revenue shamefully inadequate, and by the issue of bonds shifted to the succeeding administrations the burden of their outlay." On the currency question the platform declared that the Government should maintain each dollar which it issues on a par with its standard gold dollar, and should not permit the free coinage of silver at any ratio not established by international agreement; expressed regret that the Democratic majority in Congress has forced the national Treasury to a humiliating dependency on private bankers, and believed that there should be legislation to protect the metallic reserve from concerted attacks of speculators; declared in favor of the Monroe doctrine, civil-service reform, restricted immigration, and increasingly rigid liquor laws.

On State issues, the resolutions urged that Representatives in Congress endeavor to secure improvements in Boston harbor, that the laws for regulating State corporations be extended to those of other States doing business in Massachusetts, and that additional laws be passed for promoting road improvement and for suppressing prize fights.

Tickets were also placed in the field by the People's, the Prohibition, and the Socialist-Labor parties.

At the election, Nov. 5, the Republican ticket was successful. Following is the vote for Governor: Greenhalge, Republican, 186,280; Williams, Democrat, 121,599; Kendall, Prohibitionist, 9,170; Brown, Populist, 7,786; Ruther, Socialist-Labor, 3,249.

On the question of granting municipal suffrage to women the vote stood: Male vote—yes 86,970, no 186,976; female vote—yes 22,204, no 861.

The State Legislature for 1896 stands: Senate, 33 Republicans and 7 Democrats; House, 180 Republicans and 59 Democrats.

The Supreme Court handed down a decision in October that the Australian ballot law is constitutional.

At the municipal elections in December Democratic mayors were elected in Boston, Newburyport, and Lowell, while in Beverly, Lynn, Salem, Chelsea, and Cambridge Republican mayors were chosen. In Everett and Worcester, Citizens' tickets were successful. On the vote for license, Boston, Lowell, Worcester, and Newburyport gave majorities in favor, and Beverly, Cambridge, Chelsea, Everett, Lynn, Medford, and Salem majorities against license.

**MENNONITES.** The 12 branches of the Mennonite Church report for 1895, according to the tables given in the "Independent," New York, 950 ministers, 600 churches, and 47,669 communicant members. The largest of these branches are the Mennonites, 18,378 members, and the Amish, 10,700 members. These two branches, between which a close affiliation has been developed, report, together, a gain during the year of more than 2,000 members. A committee representing the several State and district conferences is engaged in arranging for the holding of a general conference of the two branches. If it is successful in bringing this meeting about in 1896, the event will mark the two hundredth anniversary of the division of the Mennonite Church, which took place in 1696. The year's

contributions of these two branches for mission and other purposes amounted to a little less than \$9,000. A home for orphans has been provided near Orville, Ohio, and a commodious school building has been erected at Elkhart, Ind. Several young men are preparing themselves for medical foreign missionary work.

The Mennonite Brethren in Christ (40 ministers, 54 churches, and 4,000 members) report about 500 accessions to church membership and contributions of \$28,629 for mission and charitable purposes. Eight new home-mission stations were founded during the year; an orphan home has been established at Berlin, Ontario; and a foreign mission has been begun at Wuhu, China, with 1 missionary, to whom others are to be added.

The General Conference of Mennonites (100 ministers, 50 churches, and 6,000 members) returns an increase during the year of nearly 1,000 members. It has an Indian mission station at Cantonment, Oklahoma, has opened another among the Cheyenne Indians, and is about to open an orphans' home at Bluffton, Ohio.

The Bundes Conference of Mennonites (37 ministers, 12 churches, and 2,000 members) has made an appropriation for a mission school among the Comanche Indians, and has sent its first foreign missionary to Africa.

The Light and Hope Society, of which Elder J. A. Sprenger, of the Swiss Mennonite Church, is president, sustains deaconesses' homes in Chicago, Ill., and Cleveland, Ohio, and an orphans' home at Berne, Ind.

**METALLURGY. Iron and Steel.**—The nature and properties of malleable cast iron have not been studied with sufficient thoroughness. Now that larger uses have been found for it in railroad-car couplers, etc., than the smaller articles to which it had been applied, its qualities have become a subject of more importance. Mr. H. R. Stanford supplements an account he gives of the process of manufacture with a few general conclusions. Next to iron, the most important element in malleable cast iron is carbon. A high percentage of this substance is necessary for fluidity—a quality of prime importance. For strength and malleability, the unannealed castings must have no graphitic carbon, but the total percentage must be in the combined state. Variations in these qualities and in the fracture are described as connected with the larger or smaller section of the mold. The chemical action in the furnace seems to be primarily the combining of the graphitic carbon of the charge with the iron, a combination made possible in the fused mass by the temperature, and a small burning out of carbon and slagging out of silicon and manganese. The secret of mixing is in using material containing combined and graphitic carbon in such proportions that at the temperature best adapted for pouring the graphitic carbon shall all have combined with the iron. The definition might be given for malleable cast iron that it is essentially a mixture of malleable iron and graphitic carbon, the carbon being in finely divided or atomic particles, and the iron being the matrix for those particles. Gray iron differs from malleable cast iron in that the carbon, instead of being in atomic particles, is in crystals,



and those crystals cut the iron structure and make it discontinuous. In malleable cast iron the strength of the product depends on the continuous cellular iron structure, and its malleability and ductility are limited by the non-deformable particles of graphite that occupy the cells. The process of making malleable cast iron is then, first, to make the hard, brittle carbide of iron, which is a stable compound at ordinary temperature; and, second, to change the carbon to the graphitic state by annealing. After carbon, sulphur is the most important element in malleable cast iron. It tends to hold the carbon in combination with the iron, and gives a stronger product in consequence of the semi-steel which it produces; but it is undesirable because of the hindrance it offers to annealing. General conclusions are not yet warranted regarding the effect of manganese and phosphorus, further than that phosphorus seems to be a very passive element.

A secondary or subcrystallization of iron has been observed by Thomas Andrews in the course of a research with high microscopic powers on the microcrystalline structure of large masses of wrought iron. The normal primary crystals of the iron, or those which have hitherto been regarded as constituting the ultimate structure of the metal, were found to inclose a formation consisting of very minute and much smaller crystals of pure iron, also belonging to the regular order of crystallization. These crystals sometimes manifested the hexagonal form, the predominant angle being about  $120^\circ$ , and often they assumed the form of simple cubes. They were contained within the area of the larger primary crystals. The markings of their intercrystalline shapes or junctions were very clearly defined, but they were exceedingly minute. The author estimates that there were approximately 1,000,000,000 of the secondary crystals within a cubic inch of the metallic iron. In further experiments the author found, with still higher powers, that the secondary crystals sometimes inclosed a still more minute form of crystals of pure iron, of the cubical form, which may hence be regarded as constituting a tertiary system of crystallization. All these crystalline modifications appear to be connected with the regular system of crystallization.

An allowance of  $\frac{1}{8}$  inch per foot of the dimensions of the casting is usually made by iron molders and founders for contraction or cooling; but, according to Thomas D. West, experience teaches that there may be a difference in the contraction on any two forms that differ in their proportions, even when poured with the same iron. The form of the mold and the manner in which it is made and the casting is cooled also have much to do with the size of the casting, as compared with the pattern. When this difference in contraction is observed it is found that a heavy casting or parts will contract less than a light one when conditions permit free contraction to take place. It also appears, according to Mr. West, that the length of time occupied in cooling a casting after the molten metal has solidified may often be more effective in causing different degrees of contraction and hardness than any varying percentages of sulphur, silicon, etc., which exist in ordinary foundry iron.

The author further finds that a reverse condition occasionally prevails, and the castings prove to be larger than the patterns from which they were made, or the iron "stretches." This expansion or stretching takes place at the moment of solidification, and is supposed to be due to artificial influences exerted by conditions in casting, cooling, and forms of patterns, to overcome or retard free contraction. The subject is further and more fully discussed in a paper read by Mr. West at the meeting of the Western Foundrymen's Association, in Chicago, Nov. 20, 1895.

The mean results of experiments by De Volson Wood to determine the effect of subjecting iron to stress while hot indicate that a slight diminution of strength is caused by stretching the metal while in that condition, but if the stress does not exceed one quarter of the ultimate strength, the loss of strength is scarcely more than  $\frac{1}{4}$  per cent.

The results of certain experiments by M. Moissan, in which carbon in melted cast iron was displaced by boron and by silicon, go to show that cast iron when fused is subject to precipitations and replacements quite analogous to those which occur in aqueous solutions. When the displacement of carbon is not complete there exists a position of chemical equilibrium between silicide and carbide of iron, which varies with the temperature and with the impurities in the bath.

Seeking to obtain, with aluminum as a reagent, a pure iron, Mr. E. A. Hadfield formed an alloy of iron and 36 per cent. of aluminum which was hard enough—without a trace of carbon in it—to scratch glass. Proceeding with his experiments and working with ferrous oxide and granulated aluminum, a sample of iron 99.75 per cent. pure was obtained at a cost of about 36 cents per pound.

The results of investigations by T. Wrightson with iron and steel at welding temperatures lead to the conclusion that wrought iron at a welding temperature possesses the same property of cooling under pressure which was proved by Lord Kelvin to exist in freezing water, on which demonstration the generally received theory of regelation depends. The author distinguishes the process of melting together of metals from that of welding. Either process forms a junction, but the latter takes place at a temperature considerably below the melting point. The property of welding in iron appears, therefore, to depend, as in the case of regelation in ice upon the critical condition that exists over a limited range of temperature between the molten and the plastic state.

Some observations described by M. C. Charpy had reference to the questions of the relation between the physico-chemical phenomenon known as recalcence and the change in the mechanical properties of steel by hardening, and of the importance of the escapes of heat called by Osmond "critical points  $a_2$   $a_3$ ," which take place in iron at temperatures of about  $745^\circ$  C. and  $860^\circ$  C. respectively. The results indicated that the change in the mechanical properties is always caused, to an almost complete extent, at an approximate temperature within a very narrow limit of  $700^\circ$  C. In all the specimens tested the

process of hardening resulted in similar modifications—increase in breaking load, decrease in elongation, and increase in the resistance to bending and impact. The extent of these modifications varies notably with the chemical composition of the metal and with the nature of the hardening bath. A further conclusion is that, generally speaking, if a metal is heated to a temperature higher than  $700^{\circ}\text{C}$ ., there is a risk of its not being hardened, while if it is heated to a temperature of more than  $750^{\circ}$  or  $800^{\circ}\text{C}$ . there is no longer any great advantage to be gained. The result is regarded as showing that the elementary phenomenon of hardening is very simple, and that the only difficulties to be overcome are concerned with the equal heating and complete transformation of large pieces of material.

By a strict observance of the rule that a steel casting should, as far as possible, be of uniform thickness foundries have been able to make within the past few years castings 20 feet long by 10 feet wide, which would have previously been considered almost impossible. Yet, while perfectly satisfactory large steel castings can be obtained, good small ones are much less easily produced. Mr. H. L. Gantt says that this is because in the necessarily large meltings of the open-hearth furnaces, where most of this work is done, the metal becomes cooled during the many pourings required for the smaller castings. The difficulty is overcome by the use of a small Bessemer converter, "from which we may get 2 or 3 tons of metal as hot as we may wish it. Add to this the fact that we can get from the converter that quantity of metal of any composition we may desire every half hour throughout the day, and we realize the advantage of the Bessemer process for making small and medium weight castings." Among the other advances recently made in casting steel Mr. Gantt mentions a method for making a casting having one or more faces of a steel much harder than the body of the casting. The process consists in lining such faces of the mold as will be adjacent to the parts of the casting it is desired to harden with a metallic alloy in a crushed or powdered state, capable of being melted and absorbed by the molten steel in contact with it, and of such a nature as to impart to the steel a hard face or a face of such composition as may be readily hardened. If it is desired that the casting have a permanently hard face and be used for stamp shoes, crusher jaws, hammer dies, etc., ferro-manganese gives the best results. If it is desired to do machine work on the face, and make it extremely hard afterward, ferro-chrome is most suitable. The fact that it is possible to produce a soft-steel casting having a face that can be hardened without causing the remainder of the casting to become brittle will make it practicable to use steel castings in place of chilled iron in many places with great advantage.

Nickel steel containing about  $3\frac{1}{4}$  per cent. of nickel is now produced, Mr. Henry A. Wiggin says, with the same elongation as wrought iron, a tensile strength fully 30 per cent. higher than ordinary steel, and an elastic limit at least 75 per cent. higher. The material possesses great uniformity, the nickel being evenly distributed

throughout the ingot, and not liable to segregation like other of the ingredients of the steel. Its greater strength, and particularly its high elastic limit, make it far more advantageous than ordinary steel. It is the elastic limit that governs the section in this material. Beyond this there is in nickel steel a considerable range of ultimate strength, with a large elongation. The use of nickel steel in beams, channels, belt angles, etc., is likely to lead to a change in the form of section similar to that which was made when steel superseded wrought iron—greater strength being obtainable with a saving of weight. Experiments and use in propellers indicate that nickel steel possesses a marked advantage in being less corrodible than other steel.

Besides the application to which nickel steel is put in armor plate, gun forgings, and marine shafting, Mr. F. L. Sperry finds a still wider field open to its use for structural steel, heavy castings, car couplers, car wheels, boiler plates, small pinions and knuckles, shear knives, bicycle spokes, gears for motors, and all varieties of work demanding hardness, toughness, and malleability. Plates of iron or steel and nickel, when laid together and heated to welding temperature, may be rolled into thin plates with a continuous nickel surface on both sides, or iron or steel on one side and nickel on the other. The union of the two metals is not merely a welding, but is of the nature of cementation, an actual alloy being formed to some depth below the surface of contact. The additional cost incurred by the use of the nickel is regarded as more than made up for by the advantages that are gained.

The nickel-steel plates on the new armored vessels of the United States, being hardened by the Harvey process, are proof against the hardest steel drill, and it has been found necessary to anneal them locally in order to make it possible to insert rivets and bolts in them in building. In the first attempts it proved impracticable to confine the effects of the annealing to the exact spot where the drill was to be applied, or to prevent their spreading around it. An electrical application was finally made, and the work is now done satisfactorily.

The observations of J. E. Stead on the effect of arsenic on steel lead to the conclusions that between 0.10 and 0.15 it has no material effect on the mechanical properties for structural purposes; that with 0.20 per cent. slight effects were noticed in an acid open-hearth steel in the bending properties of pieces cut across the direction of rolling after they have been tempered. With 1 per cent. the tenacity is increased, the elongation is slightly reduced, and the contraction materially reduced; the bending properties of the steel are, however, fairly good. When the arsenic amounts to about  $1\frac{1}{2}$  per cent. the tenacity is still further increased and the elongation and contraction of area are still further reduced, while the bending properties are poor. With 4 per cent. of arsenic the tenacity is increased, and the elongation and contraction become nil. These tests were made on small bars not as well worked as larger ones would have been. The effect of quenching the steel when arsenic was present in large quantities, after heating to a red heat, was to improve the bending property. Ar-



senic showed no tendency to produce red-shortness, corrosion is not increased, but oxidation is retarded by the presence of small quantities of arsenic, welding is made more difficult, and electrical conductivity is materially reduced.

The formation of blowholes in the manufacture of steel is prevented by J. L. Lebenius by bringing the liquid directly at the close of the casting under the influence of centrifugal force. As the steel gradually solidifies the gases, which heretofore have been dissolved in it, are liberated. Other advantages of the process are the even distribution of the carbon which is obtained, the reduction of the piping by about 60 per cent., and a lessening of the amount of fuel used, made possible by the avoidance of the necessity of maintaining a welding heat.

It has been shown by the experiments of Mr. Thomas Andrews, that when immersed in sea water steel corrodes more rapidly than wrought iron; that the rapidity of corrosion increases with the carbon content; that on account of the difference in potential between steel and wrought iron their contact, when they are immersed in sea water, very greatly increases the total amount of corrosion; that the difference in concentration of sea water due to tidal flow and like causes increases its corrosive action on iron and steel; and that any distortion of the metal, as by bending it while cold, cold rolling, etc., changes its potential sufficiently to influence very considerably the rapidity with which the metal corrodes when immersed in sea water. Steel thus distorted when cold, or "strained steel," is electro-negative to unstrained steel; whence the contact of the two in sea water again increases the corrosion. Distortion of steel when cold also decreases its strength, for which reason structural plates of different kinds are drilled rather than punched; and when they are punched, sheared, or subjected to other distorting process are afterward annealed or have their homogeneity otherwise restored. The inference is made from these facts by Henry M. Hearne that boiler plates which have been punched will corrode more rapidly than those which have not been so treated.

**Aluminum.**—The following method of producing alumina from clay is proposed by Joseph Heibling: Suppose a clay of a known strength in alumina. For each molecule of alumina we incorporate with the clay 3 molecules of ammonium sulphate and an almost equal weight of neutral potassium sulphate; 1 molecule of potassium sulphate is theoretically sufficient. The whole is well worked up and made into hollow bricks. These bricks are baked at 270°–280°. The ammonium sulphate is then decomposed into acid ammonium sulphate and ammoniacal gas, which may be collected in a condenser. The acid of the acid ammonium sulphate is first thrown upon the neutral potassium sulphate, which becomes acid sulphate. The latter, at this temperature, in presence of alumina and clay, is neutralized by the alumina, forming double aluminum and potassium sulphate, i. e., alum. The bricks are then extracted by methodic lixiviation. The silica may be used for cement. The alum is freed from iron by recrystallization, and the solution may be treated for the precipitation of the alumina

by means of the ammonia which has been distilled off. To obtain the alumina in a granulated state it is spread out upon stages in a tower traversed from bottom to top by the hot moist ammonia obtained on baking the bricks. The alum is thus transformed into a mixture of ammonium and potassium sulphates and of granular alumina.

An important experiment in the use of aluminum for the construction of vessels was made in the building of a second-class torpedo boat by the Messrs. Yarrow. As the result of numerous experiments the builders determined to use for the hull aluminum plates of 50 per cent. greater thickness than they would have adopted had steel been employed. Even then the weight of the hull was reduced by one half. Plates of pure aluminum seem to be very deficient in strength, and although they may be greatly strengthened by being rolled cold and used unannealed, such treatment did not give all that was required. An alloy was used of aluminum with 6 per cent. of copper, the strength of which could be considerably varied during the rolling. A medium degree of hardness was adopted, giving from 14 to 16 tons per square inch tensile strength, combined with a toughness that enabled the plates to be hammered into shape cold and to be bent to a sharp angle without showing signs of cracking. From a series of experiments extending over twelve months to determine the conversion from sea water, it was found that, provided there is no galvanic action due to other metals being in contact with the aluminum, the corrosion may be taken at under 4 per cent. per annum for plates about  $\frac{3}{8}$  inch thick, unpainted. But the boat should always be painted with pigments that exert no chemical action on the aluminum. The great enemies to the use of aluminum are heat and the alkalis. Aluminum anneals at a comparatively low temperature, and thus loses strength, while alkalis act very rapidly upon it. Aluminum plates were used above the water line on the American yacht "Defender," which was built to compete for the "America's" cup. They were 12 feet long,  $\frac{5}{16}$  of an inch thick, and from 22 to 30 inches wide, and were said to have an alloy of 10 per cent. of copper. The plates below the water line were of manganese bronze. Tests of aluminum boats constructed under the supervision of the Navy Department of the United States gave very satisfactory results as to buoyancy and capacity to get rid of water shipped aboard.

The qualities desired in an aluminum solder are thus named by Mr. Joseph Richards: It must wet the aluminum and adhere firmly; it must not disintegrate after exposure to the air; it must be as malleable and strong as aluminum; it must have a low melting point, so as to be easily worked with a soldering iron; it must have the same color as aluminum, and not change color; and it must be cheap enough for general use. None of the solders in use possessed all these qualifications. After experimenting about two years, Mr. Richards obtained an alloy of zinc and tin containing a little aluminum and some phosphorus, that realized nearly every qualification. On remelting this solder, a more fusible alloy liquated from it, which

soldered better than the original mixture. It is now obtained by using the ingredients in a little different proportion from those used in the first solder, and has a percentage composition—aluminum, 2.38; zinc, 26.19; tin, 71.19; phosphorus, 0.24. This solder has come largely into use in Germany, Switzerland, England, and the United States.

A method has been devised for imparting hardness to aluminum by the addition of chromium. Care has to be taken in the process to secure a true alloy, which is difficult on account of the difference in the melting points of the two metals. The aluminum is said to be made as hard as steel by this method. F. Allard, of Quebec, is credited with the discovery of a method of tempering aluminum, so as to give it the consistency of iron.

To cover aluminum with other metals, Herr Neesen, of Berlin, plunges it into caustic potash or soda, or into hydrochloric acid till bubbles of gas appear; then into a solution of corrosive sublimate, by which an amalgam is produced on the surface. The first immersion is then repeated, after which the aluminum is plunged into a solution of a salt of the metal of which a coating is desired. A closely adherent layer of this substance is rapidly formed. So perfect is the adhesion of silver, gold, and copper that a plate covered with either of these metals can be hammered or polished.

**Gold.**—Concerning the relative cheapness of the cyanide and the chlorination processes for extracting gold, Mr. E. A. Schneider publishes the conclusions, in the "Engineering and Mining Journal," that under exceptionally favorable conditions cyaniding is cheaper than chlorination, but under all circumstances it is safer to operate chlorination works. Chlorination can be successfully applied to almost any ore, while cyaniding gives satisfactory results only with a certain class of ores. The cyaniding process labors under the disadvantage of requiring, in most instances, an extremely skilled chemical supervision. The chemical part of the chlorination process is, on the other hand, very simple.

In the Haycraft process of gold extraction the ore is passed through a fine crusher and conveyed to an iron pan having a capacity of one ton ore. Beneath the pan is a furnace. Water is mixed with the ore to bring it to the consistency of thick pea soup. A vertical shaft, having revolving arms attached to keep the contents of the pan constantly stirred, works in the caldron. The arms are fitted with carbon shoes, which form the anode through which the electric current passes through the saline liquor to the bottom of the pan, which, with a dish of quicksilver in the middle, forms the cathode. Common salt or other chloride is added to the water; the salt being decomposed by the electric current, the sodium passes to the mercury, and the chlorine rising through the mass of pulp dissolves the fine gold it meets with and forms a chloride of gold. As the pulp circulates in the pan this chloride comes under the operation of the electric current and is decomposed in turn, the chlorine being liberated to seek more gold, while the gold passes to the mercury cathode, thus producing amalgam. In the meantime any coarser particles of gold that are too large to be

dissolved by the chlorine gravitate to the bottom and are also taken hold of by the mercury. In the process of Dr. Gaze, of New Zealand, in which chloride of bromine is adopted as the solvent for gold, caustic soda is used to recover the chlorine and bromine, and the gold is recovered from the solution by electrolysis instead of by chemical precipitants; an important part is the method employed for making the solvent. The process is a continual splitting up and reforming of the salts used.

Remarkable results in the percentage of gold extracted have been obtained by the Sulman process, in which a mixture of potassium cyanide and cyanogen bromide is used as the solvent. It is indicated by some experiments by Mr. J. S. C. Wells that in certain cases the new solvent is more powerful than cyanide alone. In a process by C. A. Mulholland, free bromine is used in place of cyanogen bromide.

Mr. J. J. Christmas, of Australia, claims to have overcome the difficulty of using lead as an amalgamating metal and a means of obtaining gold from ores. In his method the oxidation of the lead is prevented by passing the finely ground ore, previously mixed with a small quantity of kerosene or similar compound of carbon and hydrogen, through a bath of the molten metal. The lead alloys with the gold and silver, while the dry, powdered ore, being much lighter than the lead, rises to the surface of that metal, and is carried away as tailings. In the antimony process the native ore, or sulphide of antimony, is melted in large crucibles, and when on the point of cooling a quantity of molten lead is poured into the ore, stirred with an iron rod and poured into molds to cool. When the ingot is turned out of the mold it is found that the lead, which has a greater affinity for gold than for antimony, robs the latter metal of its gold contents, and, having a greater specific gravity, settles to the bottom of the mold, from which it is easily removed and the gold recovered.

**Copper and Nickel.**—The process of Albert E. Lytle for producing hard copper castings, now in use in Chicago, consists in treating the molten copper with a chemical compound whose ingredients are not disclosed, but which the inventor states is not an alloy, and is introduced for its effect in rearranging the molecules of the metal. Fractures of the treated metal exhibit no indication of an alloy, but show all the characteristics of pure copper. The castings are very smooth and free from blowholes. Remarkable specimens are shown of tough castings. Cast bars of the treated metal have been drawn into wire of high quality, and rolled cold into thin strips of great tenacity and perfect surface.

By means of a new sclerometer of very delicate construction and exact action, invented by M. Paul Jannetaz, an interesting fact concerning the relative hardness of zinc and copper has been brought to light. Most authors regard zinc as harder than copper. If, however, the metals are examined in a sufficiently pure state, copper appears to be the harder of the two. This removes an exception to the rule that the harder the body the less its atomic volume.

In its ordinary commercial form nickel, as described by Mr. A. G. Charleton, contains 98 or 99 per cent. of metal, consisting of a spongelike



mass of reduced and artificially agglomerated particles. It is not appreciably affected by atmospheric action or salt water, but oxidizes rapidly at a red heat; and its oxide dissolved in a bath of metal makes it brittle. When nickel is to be rolled, a small quantity of some reducing, easily oxidized metal is added to the crucible a few minutes before casting; without this the metal is porous and irregular, and has a yellowish-gray fracture. Obtained in this way, the pure metal is easily forged, and possesses similar physical properties to those of iron and copper. It is less malleable and ductile than iron, and less malleable and more ductile than copper, and is harder than either iron or copper. Its tenacity is intermediate between that of iron and of steel. Its electric conductivity is almost exactly that of iron. The impurities it is most liable to contain are iron, copper, silica, sulphur, arsenic, carbon, and in some cases a kernel of unreduced oxide. It is not difficult to cast if proper precautions are taken, but is often cold-short. Besides its applications in plating and in nickel steel, it is, in leaves and threads, entering more and more into common use. The threads are employed very largely in *passementerie*. Lyons, in France, is the center of a special industry of gilded and silver laces on nickel, which do not tarnish through use, like those plated on white metal or brass. Nickel will alloy with most of the useful metals, adding to their hardness, toughness, and ductility. The color of its alloys with copper, which are formed in all proportions, increases in lightness with the increased proportion of nickel up to 25 per cent., when a perfectly white alloy is formed, susceptible of taking a beautiful polish. The addition of a small proportion of cobalt gives the perfectly white alloy, even though the nickel be in the proportion of only 16 per cent. Silverine or argentan has a composition based on this fact. Great confusion exists as to the names and composition of binary, ternary, and multiple alloys of nickel, known under the general designation of white metals. Maillichut is an alloy of nickel, copper, and zinc, containing a maximum of 15 per cent. of nickel, with twice as much copper as nickel. Silverine, argentan, and packfong contain other metals—tin, bismuth, or antimony—as well, which impart fusibility and a fine color, generally at the expense of ductility.

**Alloys.**—The third report of the Alloys Research Committee, by Prof. W. C. Roberts-Austen, begins with a review of the experiments of Prof. E. Warburg and Herr F. Tegetmeier on molecular porosity, in which, when a receptacle was divided by a partition of glass with sodium amalgam on one side and pure mercury on the other, when electric action was set up the sodium from the glass and from the amalgam would pass into the mercury, showing that sodium atoms could be made to go through glass. A similar result was observed when lithium was used in the amalgam. When a metal of superior atomic weight and volume was substituted for sodium—as potassium—no transference was made. The atoms of potassium were too large to pass through the spaces occupied by sodium atoms, and which they could traverse. "We are thus confronted," the report says, "with a molecular porosity which can in a sense be gauged,

and the mechanical influence of the volume of the atom is thus made evident. It will also be evident that there is a direct connection between the properties of a mass and the volume of its atoms." The investigation was pursued by the committee for the purpose of ascertaining how far the mechanical properties of metals are in accordance with the periodic law of Newlands and Mendeleef. Copper formed the main subject of the investigation, but the evidence obtained in connection with it was conflicting. Bismuth, potassium, and tellurium—all of which have large atomic volumes—lower its tenacity, while arsenic, with a larger atomic volume than copper, confers strength upon it. It appeared, however, that the limit of elasticity and the ductility of metals generally are greatly influenced by the presence of such of the elements—which have thus far been studied—as have large atomic volumes. Tests were further made on iron aluminum, copper nickel, copper zinc, and other alloys. It was found that the method of investigation adopted rendered it possible to obtain information as to what is happening in the midst of a mass of metal from the moment it begins to cool until it is solid, and even after it is solid. Although no iron-aluminum alloy of industrial importance was discovered, much insight was afforded as to the general behavior of aluminum when alloyed with other metals. As the amount of iron in the alloy is increased the temperature of the melting point rises.

In one of his lectures on alloys at Mason Science College, Birmingham, England, Mr. McMillan considered the losses and difficulties met with in melting them. The cupola, he said, is unsuited to the production of most alloys; the reverberatory furnace can be used for heavy work only; and the crucible is hence usually employed for small or general castings. The chief difficulties to be contended with were divided into 4 classes: The action of the metals on the material has to be considered; the volatility of a few metals, especially zinc, causes loss by vaporization—in view of which there are advantages in working at low temperatures and with a protected surface upon the metal; a third class of difficulties arises from oxidation; and a fourth from absorption of gases. Alloys probably dissolve gases while in the furnaces which they can not retain on solidifying, so that a spongy metal, full of blowholes, may be obtained. Action upon the material of the crucible is strongly exemplified in melting aluminum, which is liable to take up some of the silica in the vessel, with deleterious results to itself. One of the commonest remedies for oxidation is the use of phosphorus, manganese, or aluminum in small quantities. Silica and aluminum probably help increase the solubility of dissolved gases, so that they are not given off on solidification, and tougher and sounder castings are produced.

Aluminum and copper form two series of valuable alloys—aluminum bronze, containing from 2 to 12 per cent. of copper, and copper-hardened aluminum, containing from 2 to 15 per cent. of copper. The 5-to-12-per-cent. aluminum bronzes are, according to the "Aluminum World," among the densest, finest-grained, and strongest alloys known. The alloy of between 10 and 11 per cent. of aluminum with copper is

the "true aluminum bronze," and from it the lower bronzes are made by dilution of 10 per cent. bronze with more copper. The 5-to-7½-per-cent. aluminum bronzes have the characteristics that will probably cause them to be most used, especially in bronze wire and for marine work; and the fact that with proper and easily taken precautions they can be rolled or hammered at a red heat will add greatly to their value. Aluminum in bronzes lowers the melting point of the copper at least 100° or 200°. The melting point of the 10-per-cent. bronze is somewhere in the neighborhood of 1,700° F. This substance is among the hardest of the bronzes, and hardens considerably upon cold working, while the hardness can be lowered by annealing at a red heat and plunging into cold water. Aluminum bronze can be worked in a lathe, giving chips that cut smooth and long and do not clog the tool; it is a remarkably rigid metal under transverse strain; is peculiarly safe under compression strain, and much stronger than any of the other bronzes; and has special antifriction qualities.

A new alloy mentioned in the "Journal de l'Horlogerie" as a substitute for gold consists of 94 parts of copper to 6 parts of antimony. The copper is melted, and the antimony is added. The metals having been sufficiently fused together, magnesium and carbonate of lime are added to increase the density of the material. The product can be drawn, wrought, and soldered like gold, which it resembles on being polished. It preserves its color against the action of ammoniacal salts and of nitrous vapors.

The principal conclusions drawn from the experiments of Herr C. Heusler, of Bonn, on the strength of manganese bronze having different proportions of manganese at varying temperatures up to 400° C., are that (a) a bronze with 5 to 6 per cent. of manganese is most useful for machine parts in which tenacity is of importance; (b) on the addition of manganese to copper the tenacity of the bronze increases with the percentage of manganese up to a certain limit, then decreases, and with a still further increase of manganese the strength of the bronze again increases.

The experiments of Prof. Goodman in connection with the work of the British Alloys Research Committee have brought out the fact that antifriction alloys must always contain a metal with a high atomic volume. There seems, moreover, to be a direct connection between the efficiency of the antifriction alloy and the atomic volume of one of its constituents.

An alloy of aluminum with tungsten has been recently introduced into the market. It is made in France, Germany, and England.

**New Processes.**—The process for electroplating ships' hulls which has been used with success at the Communipaw Basin, Jersey City, consists in applying to the sides of the vessel tanks or baths about 5 feet square, scribed out on the edges to conform with the curvature of the ship's sides, firmly braced and shoved in position, and calked around the edges till they are water-tight. The first bath applied by means of these tanks is of strong acid solution, which cleans the iron plates of the vessel's sides and leaves them ready for the next process. The cleaned spot having been

washed, the bath is next filled with a solution of cyanide of copper and the electric current is turned on. The cyanide solution completes more perfectly the cleansing of the side of the vessel, and in addition acts as a sort of flux, causing the film of copper next to be deposited to be more firmly adherent. The cyanide solution having been drawn off, a solution of sulphate of copper takes its place. Large plates of copper are suspended in the bath and are connected with the positive pole of the dynamo, while the negative pole is attached to the side of the ship. The deposition of copper begins immediately. At the end of the process the entire side of the vessel within the limits of the bath is found thoroughly and evenly coated with copper about  $\frac{1}{16}$  inch thick, with a closely adherent coating that can not be removed except with a cold chisel, when a part of the iron comes off with it. Each new position of the bath is so arranged that it shall lap a little over the edges of the section already done, whereby when the work is finished the vessel is copper plated all over, with a coating  $\frac{1}{16}$  inch thick, without crack, seams, or joints, or exposure of any kind through which galvanic action can set in.

In C. Hoepfner's electrolytic process for the production of nickel, solutions of nickel are purified from cobalt and other metals more electro-negative than nickel. Then they are electrolyzed in a neutral state or acidulated by weak acids of small electrolytical conductivity. The electrolysis takes place by means of insoluble anodes immersed in a solution of metal or metals more electro-positive than nickel and separated from the cathodes by a membrane strong enough to resist chemical and mechanical actions. At the anodes chlorine is produced, which may be made use of in any known way. On the cathodes nickel is deposited; it is most useful to keep the cathodes in motion. Anodes of zinc may be used, or other metal more electro-positive than that to be deposited. In the same way cobalt can be produced from cobalt solutions, zinc from solution of zinc, lead from solution of lead, tin and copper from their protochloride solutions.

G. W. Burton has discovered in electric smelting, where the ore is of a rebellious character, that by placing the proper flux in the solution the metals will separate and run from the ore according to the different degrees of heat required to melt them severally. In treating ore containing lead, copper, gold, and silver, the lead will separate first and be found in the bottom of the tank in globules. As the heat increases the silver will follow, then the copper, and then the gold, the rock being finally consumed or reduced to an ash. Each metal thus separated will be found in the bottom of the tank in separate particles of its own kind. Mr. Burton's invariable experience has been that the chemical properties contained in the ore have much to do with its rapid heating, and that the more rebellious the ore the less current required to treat it, the rebellious substance itself tending to increase or create the heat necessary. Remarkable success has been achieved in Canada in the treatment of nickel ores by this system.

The method of silvering mirrors recently patented by Hans Boas, of Kiel, is based upon the fact that when one of the heavy metals forms the



cathode of a vacuum tube containing a trace of hydrogen the metal is volatilized by the current, and is deposited as a firmly adherent and highly polished layer on the walls of the tube. The mirror thus produced is said to be of much greater brilliancy than can be obtained by ordinary methods.

Ruthenium is, along with osmium, one of the most refractory metals of the platinum group. Besides the intensely high temperature required for melting it, the operator is incommoded by the oxidizability of the substance, which tends to be transformed into the volatile oxide,  $\text{RuO}_4$ . By raising the temperature of the metal in the electric arc suddenly much above its melting point A. Joly found that the fusion was effected in a few moments, while the loss by volatilization was hardly sensible, and the characteristic odor of the peroxide was hardly perceived; but while cooling the metal became covered with the blue dioxide. When laid bare it by its gray color approximates to iron rather than platinum. Its structure is crystalline, and hence it is brittle in the cold. If heated to redness in the oxyhydrogen blowpipe, it may be flattened out and then breaks. The metal spurts strongly at the moment of solidification, and the globules are almost always full of cavities. In the same apparatus and under the same conditions of temperature the fusion of ruthenium is more difficult than that of rhodium, which, in turn, is melted with rather more difficulty than platinum. It is much harder to melt than iridium. In the conditions at which it melts osmium is merely agglomerated and fretted. Iridium osmide, which can not be melted with the oxyhydrogen blowpipe, is melted with great difficulty in the electric furnace into a white crystalline mass, which the best-tempered tools do not cut. The exact melting point of ruthenium is under investigation by M. Violle.

The objectionable impurities in copper prepared from "white metal"—such as iron, tin, bismuth, arsenic, antimony, tellurium, nickel, etc.—are not thoroughly removed by the blistering process, but enough of them remain in the metal to injure its properties. They may be removed, according to Mr. E. D. Peters, Jr., by taking advantage of the fact that they have a greater affinity for metallic copper than for the white metal in which they are dissolved. They are therefore removed from the white metal by melting it together with a certain proportion of metallic copper. As the amount of sulphur present in the white metal, Mr. Peters says, is already the least possible quantity that can hold the copper in chemical combination, it follows that for each pound of sulphur that is thus burned out of the white metal 4 pounds of copper are set free in a metallic condition (copper and sulphur combining as a subsulphide in about the ratio of 4 to 1, by weight), and that when a sufficient amount of metallic copper has thus been liberated and the entire contents of the furnace are tapped into molds, certain of the pigs nearest the tap-hole will be underlain by slabs of the heavy metallic copper containing most of the impurities that were in the charge, and incidentally, about all the gold and quite a portion of the silver. The process is less used in America than in England, on account of differences in the ores.

Studying the best conditions for the preparation of lithium M. Guntz has found that the yield of metal is so much the higher as the temperature of the electrolysis is lower. An impure salt, containing potassium and sodium chlorides, gives, when electrolyzed at its melting point, much better results than pure lithium chloride. The melting point of the lithium chloride was therefore lowered by the addition of potassium chloride. Chloride of lithium melting at about  $600^\circ \text{C.}$ , a mixture of chloride of lithium and chloride of potassium in equal weights melts at about  $450^\circ$ , and is the most favorable mixture for the electrolysis. To obtain large quantities of lithium the mixture is melted, and then exposed to the electric current. The metal obtained in this way is free from iron and silicon, but contains 1 per cent. of potassium by weight, which corresponds with 1 atom of potassium to 273 atoms of lithium. For most uses the metal is sufficiently pure.

**Miscellaneous.**—With his electric furnace, by means of which he has obtained sufficiently high temperatures to produce the diamond, crystallize metallic oxides, reduce those which have hitherto been refractory, melt metals heretofore infusible, distill lime, silica, zirconia, and carbon, cause an abundant volatilization of such metals as platinum, copper, gold, iron, manganese, aluminum, and uranium, and convert magnesia, uranium, tungsten, and molybdenum into the gaseous state, M. Moissan has been able to approach the study of a whole series of simple bodies which have till now been mere laboratory curiosities on account of the want of adequate means of producing them. Among these are many of the "rarer" metals, the nature and properties of which were almost unknown. Chromium, thus procured by reducing the sesquioxide, can be filed like iron, takes a fine polish, and, more infusible than carbon, is available for preparing alloys without the need of the intervention of ferro-chromium, which has the disadvantage of containing up to 10 per cent. of carbon. This preparation opens the way for the effective study of the alloys of chromium, which M. Moissan has begun with the aluminum and copper alloys.

Molybdenum, previously unfused, produced from a mixture of the oxide and charcoal and melted has a fine grain and a brilliant surface. Solid, it can be filed and forged at a red heat on the anvil; and with iron it furnishes a steel that can be tempered. These are all new properties.

Tungsten has been heretofore known to chemists only as a powder. Under the action of the electric arc its oxide is reduced by means of carbon, and gives in a few minutes a well-melted button, covered with a fine layer of the blue oxide of tungsten. It is more infusible than chromium and molybdenum, but can be liquefied here with great facility. It does not seem to have a strong affinity for carbon, and is obtained without special precautions as one of the purest metals the author has prepared.

Uranium, reduced from a mixture, of the sesquioxide and carbon, when cooled possesses a brilliant fracture and great hardness. When slightly carburetted it presents the property of striking fire in contact with flint. The particles thrown off burn with an intensity and an energy

far superior to those exhibited by a piece of iron.

Vanadium, previously known only as a gray powder including hydrogen, oxygen, and a little of some alkali metal as impurities, has been cast into pieces having a crystalline and brilliant fracture, and is very difficult to melt.

Titanium, produced with currents of from 100 to 300 horse power from a mixture of charcoal and titanio acid, first as a crystallized carbide, and then as the real metal, exhibits different properties from those formerly attributed to the gray powders that bore its name. It takes fire in fluorine; decomposes water only at a bright-red heat; burns in nitrogen at a high temperature, yielding nitride of titanium; and readily combines with carbon and silicon, but does not unite with argon. It resembles carbon in having a very high melting point, but differs from it in the fact that while carbon under the ordinary pressure and at a great elevation of temperature passes from a solid to a gas without becoming liquid, titanium can, in the electric furnace, be liquefied and then volatilized. "Most of these simple bodies furnish, with carbon, well-defined combinations, crystallized and stable at a high temperature, which are destined to furnish a new chapter to mineral chemistry. All these simple bodies which we have obtained in the electric furnace form also borides and silicides finely crystallized, and so hard that some of them easily cut the diamond. What part they are to have in the manufacture of steel, and whether they are destined, like chromium, to give new properties to iron are questions for the future to answer. But a new chemistry of high temperatures is forming from which industry will most likely draw numerous applications."

It has been pointed out by Spring that many metals exhibit properties characteristic of the liquid state, even when at temperatures much below their melting points. In his experiments, the metals were in the form of cylinders with perfectly plane ends, placed end to end in an iron holder, and forced together by means of a screw while heated in an air bath or in a bath of an indifferent gas. The metals used were aluminum, bismuth, cadmium, copper, tin, gold, lead, zinc, antimony, and platinum. In the earlier experiments both cylinders were of the same metal, and the temperature was kept at from 200° to 400° for from four to eight hours. It was then found that, with the exception of the platinum and antimony, the cylinders were welded so perfectly that when one end was fixed in a lathe the entire cylinder could be turned, and when broken in a vise the fracture was not through the line of separation. When different metals were employed, as copper or lead with certain others, an alloy of considerable thickness was produced, 18 millimetres in the case of zinc and copper, and 15 millimetres in that of cadmium and copper. When lead and tin were used a cavity was made at one end of the cylinder and when filled with mica, in order that contact should take place only at the edge, the alloy formed had a thickness of 15 millimetres, 9 millimetres being in the tin and 6 in the lead. With cylinders of copper and zinc having a central cavity at the ends in contact, the surface of the

copper next to the cavity was colored yellow, resembling the alloy formed when copper is exposed to zinc vapor. These results are explained on the assumption that the molecules of solids, like those of fluids, have not all the same velocity.

In a lecture describing rusts, Prof. Skidmore, of Philadelphia, observed that it is not possible to define exactly what a metal is, yet there is little liability to mistake in identifying one. The metallic properties of luster, toughness, fusibility, opaqueness, conductivity, and rust may be possessed separately by nonmetals, but they are not associated as they are in metals. Most metals may be bent, twisted, drawn, and hammered to an extent far beyond what any mineral not a metal can endure. Sodium, potassium, lithium, and, in a lesser degree, calcium, strontium, and barium, rust instantly when exposed to moist air, and their white rusts quickly dissolve in water and form alkalies. Another group—including zinc, lead, magnesium, and antimony—have white rusts that are not soluble in water, but form a thin adherent coating, which only half conceals the metal, and gives it a dull, tarnished appearance. At higher temperature than the ordinary, and especially if the metals are finely divided, the chemical energy of rusting is so great that the metals burn with a vivid light and emit a dense white smoke. The permanency of these rusts and their protective character are utilized in paints. A third group of metals—among which are copper, iron, and silver—have dark or colored rusts. A fourth group, including gold and platinum, never rust; they are found as metals in the earth, and not as ores from which the metal must be manufactured. It is an advantage in the case of the other metals that they are found in the rust or ore condition, for they can be manufactured more easily than they could be cut from ledges of the pure metal.

M. Henri Moissan has found, in his studies of the solubility of carbon in different metals, or in the same metal at temperatures more and more elevated, that boron and silicon distinctly displace carbon in cast iron and in melted iron carbide. These substances, when maintained at a sufficient temperature, behave exactly like aqueous solutions of certain compounds in which we can precipitate or displace this or that substance present in solution or combination.

Writing, in the "Iron Age," of the fatigue of metals, P. Kreuzpointner mentions the factor of the ability of a beam, axle, tire, or stamp stem to conduct vibrations speedily away from the point of impact and distribute the motions thus caused uniformly and uninterruptedly from point to point—a very important element in the strength and durability of a structure—as too often ignored or passed over hastily. Given a metal a known good conductor of heat, we know that, other things being equal, its conductivity can be impaired in various ways by flaws, impurities, hollow spaces, irregularities in outline, want of uniform density, and others. The heat impinging against the metal not being readily conducted away on account of one of these impediments, the metal at or near the point of contact with the fire becomes hotter than it would if conductivity was unimpaired. The



greater the impairment, the greater the overheating at one point, and the more frequently the heating is repeated, the sooner the metal thus abused will fail. On the other hand, supposing a metal to be an ideal conductor, "in the course of time a period will ensue when the particles are not as responsive, as ready for work as they used to be." The metal is worn out, and liable to break at its weakest point. The same effects and changes are produced when the metal is attacked by vibrations from other sources. When that point of deterioration in a piece of metal subjected to repeated vibrations is reached when, even in the soundest piece of metal, the motion wave is not carried along as freely from particle to particle as originally, then we may conceive the metal to be what is called fatigued. What the actual condition and nature of a piece of metal is when it is fatigued probably no metallurgist is able to describe or know. We may, however, attempt an explanation of its structural condition by assuming that fracture of a metal in ordinary service must be preceded by an initial separation of the particles and their points of contact, and this initial separation must be preceded likewise by a loosening of the particles—a relaxation of the force of cohesion, as it were.

**METEOROLOGY. Temperature.**—The following general propositions are put forward in a paper by Prof. von Bezold on the thermal exchanges of the atmosphere: 1. The total radiant heat received by the whole earth in a year is equal to the total amount given off by radiation in the same period. 2. The total heat received by any portion of the earth or the atmosphere is on the average equal to that given off by the same portion. 3. The total heat received and given off in the course of a year is not the same for different portions of the earth or atmosphere; in some parts the amount received is greater than that given off, and *vice versa*. 4. The heat received by given portions of the earth or atmosphere during any given period of the year is in general not equal to that passed off during the same period. 5. The total amount of heat taken in at the surface of the whole atmosphere during a given portion of the year is not necessarily equal to that given out at the same surface during the same period.

From observations made at Ekaterinburg during three winters at every hour on the temperatures of different layers of snow, from the surface to the ground, M. Abels has found that the conductivity of snow is proportional to the square of its density. The conducting power of snow having a mean specific gravity of 0.2 is 20 times less than that of ice or frozen ground. But the transmission of variations of the temperature of the air through snow and frozen ground depends also on the calorific capacity of those bodies. The heat of the sun penetrates porous softened snow, both because of its conductivity and directly. Its rays traverse the snow layer as they do the glass of a window. It is necessary, in determining the conductivity of snow or of any other pulverized body, to take account of its density.

In his experiments on the influence of the covering of the soil on its temperature, Prof. E. Ebermayer considered and observed lands the cover-

ings of which consisted, 1, of beech-tree plants eight years old; 2, of plants of *épicéa* eight years old; 3, of a layer 5 or 6 centimetres thick of dead moss; and 4, of meadow grass; and as a basis of comparisons, he also observed the bare ground. He found that, 1, in the bare ground the absolute maxima and minima and the oscillations of temperature are larger than in a covered soil. At the surface of bare soils the absolute maxima reach nearly the same height as in the air, while the absolute minima are very notably attenuated for the soil. 2. A soil covered with mosses most nearly approaches a bare field in its aptitude for being heated. The absolute maxima are nearly as high as in the bare ground. On the other hand, in winter the mossy covering impedes the radiation of heat, and the higher layers of soil beneath it do not cool so rapidly as in fallow lands. 3. Meadow grasses in summer admit almost as much heat to the ground as the covering of moss, while in winter they assure a much inferior protection against radiation; and consequently a soil under grass cools much more rapidly than under a covering of moss. 4. Forest plants of dense growth and thick foliage in summer hinder the heating of the ground in a much higher degree than all other coverings. In a compact mass, particularly the *épicéas*, they protect the ground against great losses of heat in as satisfactory a way as the covering of moss. 5. The most considerable oscillations of temperature corresponding to the absolute extremes reach much higher values in the exterior air than in the interior of the surface layer of soil. These differences diminish in going deeper into the arable layer, and are less in a covered than in an uncovered soil. 6. The most considerable oscillations of temperature are determined in the higher layers of the soil. They become more feeble in the deeper layers. The influence of covering of the soil on the attenuation of the extremes of temperature and on its oscillations are felt chiefly in the upper beds to about 50 centimetres of depth. The properties of the soil being the same, a grassy surface, in its behavior toward heat, is very much like a bare surface. The earth under grass is in summer 1° C. colder, and in winter only a few tenths of a degree warmer than an uncovered ground. Forest plants diminish the activity of the roots and the reactions of the soil during the summer. They render the heating of the soil more difficult from April till September; in the fall and winter they contribute to preserve its heat. The covering of dead moss, on the other hand, augments the activity of the roots and the reactions of the soil in consequence of a more considerable heating of the soil at all times of the year. Further, this covering keeps the soil fresher and preserves it from hardening and from baking at the surface. Consequently, in the cultivation of gardens, it should be of considerable advantage to cover the surface moderately with moss, leaves, peat, or other suitable substance.

H. H. Clayton, who has studied the subject of periodicities for several years, has found a striking regularity between the intervals of many of the temperature maxima of the Blue Hill (Mass.) observations, and that almost all the maxima could be arranged in such a way that they follow each other at intervals of six or seven days.

He thinks that for a large part of the year forecasts of temperature, on the assumption of regular rhythmic oscillations and a knowledge of the time of their beginning and ending, may be made for a week or two in advance with nearly as much accuracy as they are now made by the Weather Bureau for thirty-six hours.

In the discussion of a table of mean monthly and annual temperatures for London and vicinity for one hundred and thirty years, 1763-1892, Dr. A. Buchan says that much labor has been spent in searching for evidence of cycles, but it can not be said that the results show more than highly interesting resemblances and contrasts among the months, and that in whatever way the periods are viewed they suggest no appearance of cycles. But a tendency is shown of types of high and low temperature to prolong themselves during months, seasons, and years.

Some interesting results have been obtained in Berlin by means of meteorographs set up in the "Urania" pillars. Each pillar contained a thermograph, a barograph, and a hygrograph, placed side by side in a metal case through which a rapid current of air was kept up. The observations showed that the temperatures recorded on 2 closely adjacent pillars may differ by one degree or more both on a warm summer day and in the coldest weather. In one case the air was found to be warmed by the adjacent row of houses exposed to direct sunlight. In another the radiation was observed to be greater opposite a gateway than in the street. The very considerable local differences of air temperature recorded on closely neighboring pillars could hardly have been expected *a priori*.

For determining temperature and humidity near a surface of snow Dr. Süring placed a thermometer on the snow and another at the usual height above the surface, either exposed or protected, while an aspiration thermometer, placed 1 centimetre above the snow, recorded the temperature of the air. The temperature recorded by the thermometer proved to be considerably influenced by its size, shape, and position, as well as by the condition of the snow surface, etc. The observations were therefore restricted to the determination of the difference between the temperature of the snow and that of the air above it, as related to clouds and the motion and temperature of the atmosphere. The difference was lessened as the sky became more clouded, and when the clouding was complete, during a fall of snow, the temperature of the snow's surface was higher than that of the air. The difference became greater as the temperature fell, but was lessened as the motion of the air became more rapid. As to the influence of the snow surface on the humidity of the air, the author has arrived at the result that evaporation from the snow is much more frequent than condensation from the air, but that they are about equal in amount.

The thermophone, an instrument for measuring temperatures at distant or inaccessible places, was devised by H. E. Warren and G. C. Whipple for the purpose of obtaining the temperature of the water at the bottom of a pond. It is also suitable for obtaining the temperature of the soil at various depths. The apparatus resembles Siemens's resistance thermometer; advantage

is taken of the fact that different metals have different electrical temperature coefficients.

Having compared the beet-root crops in the provinces of Saxony and Silesia with the temperatures, rainfall, and intensity of rain during fifteen years, Dr. Kassner found that the curves of temperature corresponded with those of the crops in both provinces except in 1887, while the curves of rainfall showed no such correspondence in Silesia, although they were in somewhat greater harmony in Saxony. The curves of intensity of rain were in somewhat closer accordance with those of the crops than were those of rainfall. The author's final conclusion is that the relationship of weather to crops requires a much more thorough investigation than is possible with the scanty data as yet available.

**Clouds.**—Discussing the question whether clouds are composed of hollow vesicles or full globules, M. Van der Mensbrugghe cites an experiment performed by Joseph Plateau in 1852, in which a column of water nearly three quarters of an inch in diameter was supported in a glass tube closed at the top but open at the bottom. Beneath the open surface of the liquid was a vessel of boiling water, from which a current of visible vapor rose continually. The suspended liquid never lost its complete transparency under these conditions, notwithstanding the number of spherules of vapor that rose, provided the outside of the tube was kept dry. This seemed to prove that the vapor was not composed of spherules filled with air, but of full globules, and constitutes a strong argument against the theory that the clouds are constituted of vesicles. Other considerations bearing in the same direction are theoretical. If the spherules are very small, they will be more easily sustained in the air if they are surrounded by a very thin layer, the density of which diminishes toward the exterior, and which, according to Lord Kelvin's principle, they will evaporate the more rapidly the more minute they are. If, on the other hand, the globules of the cloud are relatively large, they will obey their weight; but in falling will traverse strata of air, becoming constantly warmer, and will consequently evaporate more and more rapidly, till their diameter is reduced to a measure at which their further fall is opposed by the resistance of the air. It is therefore not necessary to suppose larger or smaller spherules filled with air to explain the suspension of clouds in the atmosphere; furthermore, this suspension is only relative, for the clouds are almost constantly changing form—a fact which proves either that evaporation is going on, or that some of the parts of which they are constituted are falling.

In a lecture on the "Physical Phenomena of the Upper Regions of the Atmosphere," Prof. Alfred Cornu compared the atmosphere to an immense thermo-dynamic engine, in which the sun is the source of heat and interplanetary space is the condenser. The most interesting phenomena take place in the more inaccessible parts of the atmosphere, and though the difficulties of getting information about these elevated regions are great, the physicist is beginning to know much of the real explanation of natural phenomena, and is even able to reproduce them in his laboratory. Among the unexpected static



phenomena discovered in ballooning and in mountain observations are the facts that many clouds which have been generally regarded as consisting of vapor are composed of minute crystals of ice; that the direction of the wind is different at different heights; and that the temperature does not steadily fall as the earth becomes more distant, but alternate layers of hot and cold air are encountered. The first and last of these facts might have been ascertained by indirect means from consideration of certain optical phenomena; the presence of ice crystals in cirrus clouds might have been inferred from the solar halo; and the alternations of heat and cold in the atmosphere from the various forms of mirage, which depend on the reflection of light from the surface of the different layers. The solar energy was described by M. Cornu as being of three kinds—mechanical energy, appearing as winds, cyclones, etc.; calorific energy, shown by the change of the state of matter, as water into vapor; and electrical energy. The wind is the most simple mechanical manifestation, and has its origin in the differences of atmospheric pressure in two distant places. It never blows in the direction of the line joining the points of greatest and least pressure, but always obliquely to the isobarometric lines, and usually with a circular movement round the points of highest and lowest pressure. When from any cause the equilibrium of the atmosphere is broken down, circular movements of enormous force, such as tornadoes and cyclones, are set up.

The careful determinations of Profs. A. Bartoli and E. Stracciati go to show that cirrus clouds, which are composed of particles of ice, are capable of intercepting 30 per cent. of the solar rays, while from 58 per cent. to 92 per cent. of these rays may be absorbed by a fog of uniform density in all directions.

Discussing the question how far the apparent motion of a cloud is a satisfactory indication of the motion of the air in which the cloud is formed, Mr. W. N. Shaw cited the mountain cloud cap as an instance of a stationary cloud occurring in air moving sometimes very rapidly. Clouds are formed by the mixing of masses of air at different temperatures, or by the dynamical cooling of air through the reduction of its pressure without supplying heat from outside. Clouds formed by the mixing of air may be carried along with the air after they are formed, while when a cloud is formed by expansion circumstances connected with the formation of drops of water on the nuclei to be found in the air, and the maintenance of the particles in a state of suspension make it probable that the apparent motion of such a cloud is a bad indicator of the motion of the air.

**Precipitation.**—An experimental contribution to the study of dew has been made by Herr Wollny, who used plants in glazed pots with earth of varying moisture, some of the plants being allowed to radiate freely on favorable nights, while others were screened. The author concludes that dew depends partly on evaporation from the ground, partly on transpiration. It is at present doubtful whether precipitates from the air share in it or not. A cloudy sky weakens the cooling process without stopping it wholly.

With copious radiation, the temperature minimum is at the surface of the plant covering (of the ground), and here the aqueous vapor rising from the ground is partly precipitated. With increase of the ground heat downward there is increase of the water brought up by the plants, which is given up as vapor and condensed. The more moisture there is in the ground, the more water is evaporated from the ground and the plants. Dew formation is usually favored by the larger number of stomata on the under surface of leaves than on the upper. On a given surface of ground the dew is more plentiful the stronger the plant organs above ground, and the closer the plant growth. The temperature of still air increases from the surface to a certain limit (at about 5 feet over grass it was sometimes 4° or 5° C. warmer than on the ground). In experiments with blotting paper, cotton wool, feathers, and asbestos, the first was much moistened, while the others showed dew in drops. Bodies of organic origin attract more moisture than those of mineral (a case of hygroscopic absorption). For vegetation the author considers the benefit of dew but trifling.

From his observations of the conditions of atmospheric humidity on the summit of the Sonnblick mountain, Dr. J. Hann finds that the yearly range of humidity there is the reverse of what it is on the plains; the minimum, or greatest dryness, occurs in winter and the maximum in spring and summer. This much was known from observations at alpine stations, but there were circumstances that cast doubt on their accuracy. Temperature and vapor pressure on Sonnblick run in nearly parallel curves, and each degree of difference in temperature corresponds to a change of tension of vapor in the same direction. The daily range exhibits in all except the three winter months a low relative humidity in the morning, and a great humidity during the evening and night. But in winter the relative humidity remains below the mean from 6 P. M. to 7 A. M., and above it from 9 A. M. to 5 P. M. The daily range of absolute humidity (vapor tension) is nearly the same in all seasons of the year. The minimum occurs early in the morning, and the maximum in the afternoon. The most remarkable feature in the daily range of relative humidity is that on very clear and warm days long before the rise of the sun has any effect the humidity falls below the mean value on the Sonnblick, and by about six o'clock in the morning it has fallen nearly 7 per cent. below the daily mean. This important fact seems to show that the relative dryness of the forenoon on mountains is due to a descending movement of the atmosphere, caused by the winds blowing from the mountains to the valleys during nighttime, and thus cooling the sides of the mountains.

Following a suggestion of the French Government, M. J. R. Plumadon, of the Meteorological Observatory of the Puy de Dôme, instituted an inquiry throughout the department of that name with regard to the influence of forests and accidents of the surface—mountains and valleys—on the formation and propagation of hailstorms. A large proportion of the answers received attributed influence to these features, but the greatest disagreement was revealed as to the

character of the influence. In many places forests, mountains, or valleys were supposed to favor the outburst of severe storms, while in a smaller number of places they were thought to diminish the liability to them. The author could only conclude for the circle under observation that they have no direct influence on the propagation of hailstorms. The prevalence of belief in such influence is attributed to the production by local features of minor phenomena of dark and imposing-looking clouds which, while having no real connection with it, are associated with whatever storm may occur at the time. It can not be denied, however, that the production and progress of storms are affected by the features of the earth's surface, but the influence such features exert is only indirect, and consists essentially in changes that are caused in the atmosphere. Thus the differences in the temperature and moisture between the Alps and the Lombard plains south of them lead to the production of vast atmospheric eddies and depressions which have considerable effect on the climate of southern Europe and Africa. Similar disturbances, but differing in intensity according to the proportions, may be produced by other lesser accidents. The course of the storm, when it has arisen, likewise does not appear to be governed to any great extent by the mountain ranges, valleys, and forests, but rather by the ordinary laws of the direction of atmospheric currents. If the pressure is even in a large area, the storm will follow the usual course, from southwest to northeast; if the pressure is uneven, the storm will follow the general direction of the wind as determined by that circumstance.

Attempts of Mr. Keuchler, of Indianola, Texas, to ascertain whether there was a connection between the extent of the year's growth of trees as shown by the formation of rings and the season's rainfall showed that while there were very great variations in the annual growth of the trees, they did not correspond with the seasonal rainfall. The conclusion is drawn from the observations that not rainfall alone or any single factor governs the amount of the growth of the tree during the season, but a combination of factors, including, besides the amount of the supply of moisture, evaporation, insolation, temperature, and the character of the rainfall, whether it comes in showers or continuously.

It has been shown by long-continued observations made by J. E. Codman that the size of rain gauges (automatic) makes no practical difference in the depth of rainfall collected by them. The largest gauge experimented with was 22 inches, and the smallest one 2 inches in diameter. When the gauges were placed at different heights, up to 50 feet, the same amounts were collected by the higher ones as those on the ground, provided no counter-currents of air came in to affect the result. This result agrees with that found by Prof. Wellmann in his experiments in Berlin.

The following generalized results as to the distribution of rainfall in the United States are deduced by W. Köppen from an investigation of the rainfall charts published by the Government. These are: 1, a district of continental summer rains, inclosed on both sides by littoral rains, which, corresponding to the contrast of

the yearly oscillation of temperature, are much more marked in the West than in the East; 2, a district of isobaric rains in the Southeast, with equatorial sea winds in summer and with anticyclonic weather in winter; 3, transition districts, in which both rainfall maxima occur near each other, while the minima occur in spring and autumn. Maxima after the equinoxes are nowhere very well marked, but the April and May rains of Colorado and Kansas and the autumn rains on Lake Superior are indications of them. With regard to the seasonal distribution in the tropical zone, the differences in temperature play only a small part compared with that played in extra-tropical regions; this result naturally follows from the small variation of temperature in the tropics.

**Winds.**—From the studies of the relations of the diurnal rise and fall of the wind in the United States, by Mr. Frank Waldo, the general results are derived that for January the rise of the wind toward the midday maximum is followed by a more rapid fall over nearly the whole of the United States. For July the same law holds, except in the Western States, where the morning rise is more rapid. The rise in the Mississippi valley continues during about seven hours. On the Atlantic coast the duration decreases from ten hours in the North to five hours on the coast of Florida. The rate of increase during the rise varies from 0.4 mile to 0.6 mile per hour.

A peculiar climatic feature of the region of the United States between the ninety-fifth and one hundred and second meridians is the occurrence in summer of hot winds, or currents of air with higher temperature than that of the general winds. They attracted notice in ten out of the twenty-three years ending in 1894, and caused considerable damage to crops in three or four of those years. Even when severe, their destructiveness, according to Mr. Isaac Monroe Cline, is confined to narrow limits. They are likely to occur between the middle of May and the middle of September, but are most frequent during July and August. The length of time during which they are likely to prevail varies from a few hours to three days. They are extremely dry. Their direction is usually that of the atmospheric movement near the earth's surface prevailing at the time over the district in which they occur, and their velocity varies considerably. It is noticed as one of their most striking features that, while the atmosphere is heated generally and shows an excess of temperature over the territory affected, abnormally heated narrow currents are often observed, between which the air is much cooler. While these winds are always noted as causing vegetation to wilt and droop, the more intense hot ones burn tender vegetation to a crisp in a few minutes, without reference to the amount of moisture present in the soil or the general atmosphere; and some of the most destructive of them have been known to occur when both were saturated with moisture. In studying the distribution of pressure in connection with these winds, it is found, Mr. Cline says, that they occur mostly with low-pressure areas which have moved slowly from the north of Montana southeasterly along the eastern slope for three or four



days before they take up a decided movement eastward. The opinion that they are of the same generic character as the warm wave or heated term of the Eastern States, and the belief that their dryness and heat are caused by drought and insolation of the earth's surface, and that they simply bring northward the heat of the climate in which they are supposed to have their origin, are not supported by the evidence, but are contradicted by some of the circumstances; while the opinion that they are a special class and their heat and dryness are of dynamic origin like that of the *foehn* and chinook is, in Mr. Cline's view, confirmed by the present study of all the observations and correlated facts that can be found relating to the subject. Such origin seems to be found when the southeasterly winds of Oregon and Washington cross the great continental divide, where they rise to a height of from 10,000 to 15,000 feet, and are deprived of their moisture. Then, descending rapidly, they gain warmth, and reach the surface with their initial dryness. These winds are a permanent feature of the climate of the region where they occur, and the only palliative against them that Mr. Cline suggests is by the plantation of tracts of timber, which will furnish them moisture and tend to reduce their temperature, thereby serving as a partial protection to the farms beyond the woods.

In speaking in the Meteorological Society of that city on the, as yet, uninvestigated velocity of the wind in Berlin, Prof. Hellmann based his remarks on the indications during ten years of a self-registering anemometer placed at a height of 33.5 metres above the ground in the tower of a house which was originally quite isolated. In later years this house was surrounded by others, but this fact did not affect the working of the anemometer. Taking a year as a whole, the maximum rate was observed in March and the minimum in September, and during these months the variations were least. The average for the year was 5.1 metres per second. The same periods of maximum and minimum have been observed at other stations, as Paris, Munich, Prague, Vienna, and Cracow. Winds with a velocity less than the average are more frequent than those with more than the average velocity. The frequency of storms as measured in hours is greatest in January and March: it increases in October and sinks rapidly in April. The daily period of greatest velocity lies between 1 and 2 o'clock p. m.

The movements of the air at all heights, in cyclones and anticyclones, as shown by cloud observations, have been investigated at Blue Hill Observatory, Massachusetts. A record was made of the kind of each cloud visible, the direction of its motion, and its relative velocity, and the observations were plotted and classified into 5 levels. The increased velocity of the wind near the center of the cyclone and the decreased velocity near the center of the anticyclone are distinctly shown. The arrows of the plot also show that the inclination of the wind to the centers of the two is not the same on all sides. In the cyclone the winds blow most nearly tangential southeast of the center and most nearly inward north or northeast of the center, while in the anticyclone the winds are

most tangential northwest of the center and most nearly outward south or southeast of the center. In the cumulus region the cyclonic and anticyclonic circulation are still visible, but the general westward drift has become much stronger, while above that region the circulation is entirely marked by the drift. The diagrams also show that the currents do not all turn to the right as one ascends into the atmosphere, as is usually represented. When the winds have a northerly component they show that the currents turn to the left as one ascends. The circulation of the air is shown to be much more rapid in the higher regions than near the earth's surface in both cyclones and anticyclones.

Having plotted in tabular form, as deduced from the Signal-service charts for about three years, the number of storm centers passing over each quadrangular degree between latitudes 20° and 49° north, and longitudes 99° and 63° west, Prof. Cleveland Abbe finds it clearly indicated that the storm tracks, which move from Alberta and Assiniboine southeastward over the United States and then northeastward toward the Gulf of St. Lawrence, describe a system of parabolic curves, the tendency of which is to have a common point of intersection, and therefore a region of maximum storm frequency, in or near the northwest of Nebraska.

The suggestion was made in a discussion in the French Meteorological Society on anemometers and vertical currents of the atmosphere, which have sometimes been recorded by the clino-anemometer, that the vertical currents may have been due to deviations of the atmospheric currents by obstacles, such as the tower on which the recording instruments were placed, which divides the current laterally and inflects it upwardly. These vertical currents, according to Prof. Angot, do not rise very high, as papers thrown into those on the Pic du Midi ascend only a few yards, and then fall down at the feet of the observer. These experiments seem to throw doubt on the value of observations of ascending currents made under the conditions described.

In a discussion of the upper currents of air over the Arabian Sea, W. L. Dallas, of the Indian Meteorological Office, shows that a regular arrangement exists in the vertical succession of the upper currents, and that the Doldrum region, and not the geographical equator, is really the dividing line between the currents of the northern and southern hemispheres.

Two theories of the cause of cyclones in the temperate latitudes have found support, viz., the convectional theory, known as Ferrell's, that they are caused by the convectional ascent of a current of warm air in the central parts, the heat necessary to sustain the current being supplied, at least in part, by the latent heat set free by the condensation of aqueous vapor; and the theory proposed by Dr. Hann, that the storms are eddies formed in the general easterly drift of the atmosphere in temperate latitudes, just as small whirls are formed in rivers. Dr. Hann found that the temperature at high mountain stations in the Alps is higher during anticyclonic conditions than during the passage of storms. Mr. W. H. Dines, who has reviewed the subject in the American Meteorological Journal,

thinks that the evidence is in favor of Ferrell's theory. Mathematical laws show that it is a possible one, and that the latent heat set free by the condensation of moisture will, if it take the form of kinetic energy, be sufficient to produce a very violent storm.

Experiments reported by Mr. G. Symons as having been made in England in December, 1894, show that the wind in storms is capable of carrying sea spray to a distance of about 65 miles from the coast.

**Thunderstorms.**—In his studies of the annual distribution of thunderstorms over the surface of the globe, Mr. A. Klossersky, Director of the Meteorological Service of Southwestern Russia, mentions a high temperature, a certain degree of moisture, and a considerable quantity of atmospheric precipitation as the factors most favorable to the development of electrical activity, and which combined contribute to the production of the maximum of storms; so that we could, by comparing the maps of precipitation and temperature, obtain *a priori* a chart of the general distribution of thunderstorms. Such a chart would, however, only be of a relative character, because we are not able to estimate the comparative influence of the several factors. A zone of electrical activity of great intensity extends on both sides of the equator. In its general repartition this area expands from the northwest to the southeast over each continent which it traverses—America, Africa, and Asia with Oceanica, forming thus three electrical foci. The first equatorial zone—that of Asia and Oceanica—extends from the beginning of the Himalayas and across Indo-China and the Sunda Islands to New Guinea. The whole number of storms annually is from 90 to 100 and more. It may be remarked that all points in it are within the area of abundant precipitations. The second continental zone of great intensity passes across equatorial Africa, with an average number of storms varying from nearly 200 a year at Bismarcksbu<sup>rg</sup> to 46 at Zanzibar. On both sides of the continent the southern coasts are much richer in thunderstorms than the northern. The third continental center of atmospheric electricity is in the tropical regions of America. The yearly average of thunderstorms is 100, or more between 20° and 22° north. This zone, with a few considerable diversions, extends southeastwardly, including the West India islands, to 25° south. In the higher southern latitudes a marked difference is observed in the amount of precipitation and the distribution of electrical activity between the eastern and western coasts; and a minimum is reached in the warm region of the western coast, as at Lima, where the annual average of thunderstorms is null. North of this electrical equator the activity of thunderstorms may be said to decrease. We enter the region of continental deserts, extending in the Old World from southwest to northeast, and marked by inferior precipitations and weaker electrical activity. North of this zone of deserts electrical activity rises again, though it appears to be easily affected by temperature and local conditions. The average of thunderstorms in Europe between the Atlantic coast and the Ural mountains is from 15 to 20 a year.

**Miscellaneous.**—Urging that more attention be given to instruction in general meteorology as a university course, Robert Dele Ward advises the consideration of the various subjects in the following order: Evolution, composition, and offices of the atmosphere and its relations to plants and animals; relations of earth and sun; the variations of the seasons and the distribution of temperature over the earth's surface for the year, January and July, together with a study of isanomalous and of equal annual range charts; the distribution of pressure for the year, January and July, and the resulting winds; classification of the winds; moisture of the atmosphere and precipitation; storms, including cyclones, thunderstorms, and tornadoes; distribution of rainfall over the world, by seasons and for the year; weather; climate, including sanitary climatology, secular changes in climate, and the relation of climate to history. As lines of work for persons who have completed such a course, the author suggests the study of the climates of the different States, the effects of their topography on their rainfall, their winds, and the courses of their local storms; the local effects of forests and of cultivation on rainfall; the distribution of rainfall by seasons, months, and districts; its bearing upon the times of planting and harvesting; and changes in the depth of the level of the ground water, and its variations with the weather and the season.

It has been long known that cascades communicate a negative electrical charge to the air around them. The subject has been specially studied by Herr Lenard at the waterfalls of Switzerland and in laboratory experiments. It is found that even cataracts only a few feet high send into the air considerable charges of electricity, provided they bring down a large amount of rapidly dashing water. The intensity of the phenomenon is, however, reduced by very slight amounts of impurity in the water. Herr Lenard's experiments accord with the demonstration by Lord Kelvin and Messrs. Maclean and Goto that air even absolutely dust free can be electrified by a jet of water. As a general principle Herr Lenard concludes that drops of water falling on the surface of water or on a moist body disengage electricity, the water being charged positively, and the air passing away negatively charged. When the experiment is tried in a closed chamber the difference in potential may be so great as to provoke sparks. The negative electrization of the air has also been observed by Herren Elster and Geitel to be produced by subterranean cascades. Jets of water that drip down the rock sides, and roaring streamlets have a like effect. Prince Kropotkin remarks of the importance of the results of this property, that by it "the supply of electricity in the air is constantly renewed. The waterfalls in the valley, the splashing of the waves on the shores of lakes and rivers, and the splash of drops of rain on the ground send masses of negative electricity into the air; even the watering of our streets and of our plants in the orchards has the same effect on a limited scale. On the other side, the waves of the sea, as they break against the rocks and fall back in millions of droplets on the beach, supply the



air with masses of electricity, the amount of which rapidly increases after each storm."

Mr. A. Lawrence Roche mentions, in a paper on "High Level Meteorological Stations," as one of the greatest drawbacks to a full understanding of meteorological phenomena from observations made near the general level of the ground the modifications and interference which aërial movements suffer at the surface, under the operation of which they are made to differ from the movements in the higher state and are caused to represent incorrectly what is going on in the atmosphere at large. The more strongly agitated upper strata react on the lower in many ways, and a knowledge of the moderately high atmospheric layers is of great importance for the theory of the general circulation of the atmosphere, and practically for our weather forecasts. Hence observations, to be complete, should be made from elevated points, lifted up above the influence of surrounding lands. Such points are on isolated mountain summits, and a number of meteorological observatories have been established on these in America and Europe. Mr. Roche begins his account of the principal mountain observatories by mentioning that which was established in 1870 on Mount Washington, the first summit station in the world, but which is now disused. "Probably nowhere else in the world has such severe weather been experienced, the lowest temperature being here often accompanied by the highest winds, unlike the calms which prevail with intense cold at low levels." The Government meteorological station on Pike's Peak, at an elevation of 14,134 feet, was for many years the highest in the world. This station also is now closed, so that there seem at present to be only two summit stations in the United States where meteorological observations are made throughout the year—the Lick Observatory, Mount Hamilton, California, and the Blue Hill Meteorological Observatory in Massachusetts, situated at a very moderate elevation. Prof. S. P. Langley conducted his researches on solar heat in 1881 on Mount Whitney, the summit of which is 14,500 feet above the sea. Harvard College Observatory has, however, established the highest station in the world on the summit of the volcano El Misti, in Peru, 19,650 feet above the sea. As observers can not remain here, the station is supplied with self-recording instruments, and visits are made to it periodically. France has the stations of the Puy de Dôme, 4,800 feet high; Pic du Midi, 9,440 feet high; Mount Ventoux, 6,250 feet high; and the Aloual, 5,150 feet high. Stations were established on and near Mont Blanc in 1890, of which the one at the Rocher des Bosses (14,320 feet) is supplied with self-recording instruments, and is looked after every two weeks. Mr. Janssen has recently successfully established a station in the snow of the summit of the mountain, 15,780 feet above the sea. Instruments have been placed on the Eiffel Tower, Paris, at 980 feet above the ground, which give more nearly the conditions prevailing in the free air than do any others fixed permanently at this elevation. The observations are taken in connection with those at the Central Meteorological Office near the ground. The observatory of the Sonnblick, Austria Alps, 10,170 feet,

has furnished very valuable results. The Swiss observatory on the Santis, 8,200 feet, is one of the best located and equipped summit stations in the world. In Italy an observatory has recently been completed on Mount Cimone. At Ben Nevis, Scotland, the highest mountain in Great Britain, an unbroken series of hourly observations has been carried on for ten years. In association with the observations at the base station, or sea level, these have been very useful. As among the results gained from high-level observations, Mr. Roche enumerates determination of normal decrease of temperature and humidity with elevation; abnormal changes with elevation in cyclones (or areas of low pressure near the ground) and in anticyclones (or areas of high pressure near the ground); height to which these cyclones and anticyclones persist; and the circulation of the air around each at various levels.

The chief features of the climate of Colorado are summarized by Dr. C. T. Williams, President of the Royal Meteorological Society, as being: Diminished barometric pressure, owing to altitude, which, throughout the greater part of the State, does not fall much below 5,000 feet; great atmospheric dryness, especially in winter and autumn, as shown by the small rainfall and low percentage of relative humidity; clearness of atmosphere and absence of fog and cloud; abundant sunshine all the year round, but especially in winter and autumn; marked diathermancy of atmosphere, producing a difference between sun and shade temperatures, varying with the elevation in the proportion of 1° for every rise of 235 feet; considerable air movement, even in the middle of summer, promoting evaporation and tempering the solar heat; and the presence of a large amount of atmospheric electricity. Thus the climate is dry and sunny, with bracing and energizing qualities, permitting outdoor exercise all the year round, the favorable results of which may be seen in the large number of consumptives whom it has rescued from a life of invalidism and converted into healthy, active workers.

The studies of H. A. Hagen, based on observations regularly made since 1859 and extending back in an irregular and fragmentary way to 1832, show that Lake Michigan has a great influence on the climate of Chicago. Of the winds a maximum prevails from the southwest, and a secondary maximum from the northeast. Land winds predominate during the cold months, and lake winds to a little less degree during the warm. The mean temperature deduced from twenty years' observations is 48.6°, and occurs about the third week in April and October. The highest temperature occurs about the middle of July, and the lowest about the third week in January; the temperature is rising for one hundred and seventy-four days and falling during one hundred and ninety-one days. The cold spell about the middle of May is well marked in the five-day means. The highest temperature observed was 99.6°, on July 17, 1887, and the lowest —23°, on Dec. 24, 1872. The maximum temperature was 90° or more on one hundred and twenty-one days during twenty years, and a minimum temperature of —15° was reached only 16 times. The annual rain-

fall, since accurate observations were begun in 1867, is 34.4 inches, and is fairly well spread over each month. A fall of 2.5 inches in a day occurred only 15 times in twenty years.

In the "Annales" of the French Meteorological Office for 1890 M. Angot discusses the observations taken simultaneously during that year at the Central Meteorological Office and on the Eiffel Tower for the study of the variation with height of the several meteorological elements. The reduced barometric pressure was lower every month on the tower than on the ground, the probable cause being the great difference in the velocity of the wind at the two stations. The observations made at the three stations on the tower allow the variations of temperature with altitude to be studied with great detail, and it was found that the rate of diminution was far from being proportional to the height above the ground. In all months, at the middle of the nighttime, the temperature increased with altitude, the maximum difference occurring at a mean height of about 500 feet; it then decreased, at first slowly, and afterward more rapidly. At about 1,000 feet the mean rate of decrease amounted to 1.4° C. per 100 metres (328 feet). During the middle of the daytime the decrease of temperature with height above 500 feet is nearly uniform in all months, being about 1.6° C. for each 100 metres. Between 500 feet and the ground, however, the decrease showed a marked annual variation. During the cold season the difference was less than that observed at the higher level, while in the hot season it was much greater. The diurnal variation of vapor tension at the summit of the tower exhibited entirely different characteristics from those near the ground. Generally speaking, there was only one maximum near noon, and one minimum between the evening and midnight. During all months the vapor tension was less at the top of the tower than near the ground. The diurnal variation of the wind exhibited a marked minimum at the top of the tower during the daytime and a maximum at night, being the reverse of what is observed at ground stations.

**METHODISTS.** The summarized statistics for 1895 of the several branches of the Methodist Church in the United States are as follow :

CHURCHES.	Ministers.	Churches.	Communi- cants.
1. Methodist Episcopal .....	16,079	24,605	2,629,985
2. Union American Meth. Epis.	115	115	7,031
3. African Methodist Episcopal	4,365	4,575	594,476
4. African Union Meth. Prot..	80	70	7,000
5. African Meth. Epis., Zion ..	2,473	1,612	409,441
6. Methodist Protestant.....	1,556	2,042	166,032
7. Wesleyan Methodist.....	600	565	13,344
8. Methodist Episcopal, South.	5,757	13,502	1,379,923
9. Congregational Methodist ..	204	238	12,500
10. Congregational Meth. (col.)	5	5	319
11. New Congregational Meth..	20	35	1,200
12. Zion Union Apostolic.....	30	32	2,346
13. Colored Methodist Episcopal	1,297	4,004	170,718
14. Primitive Methodist.....	70	100	6,340
15. Free Methodist.....	855	708	26,140
16. Independent Methodist.....	8	15	2,569
17. Evangelist Missionary.....	87	13	4,600
Total Methodist.....	33,601	52,236	5,438,969

**I. Methodist Episcopal Church.**—The statistics of this Church, published in the "Methodist Yearbook" for 1896, give the following to-

als: Number of annual conferences, mission conferences, and missions, 140; of itinerant ministers in full connection and on trial, 17,026; of local preachers, 14,896; of members in full, 2,454,645; of probationers (for membership), 312,011; total of members and probationers, 2,766,656; of Sunday schools, 30,264, with 347,844 officers and teachers and 2,580,973 pupils; of churches, 25,383, valued at \$107,960,374; of parsonages, 9,813, valued at \$16,649,302; of baptisms during the year, 98,121 of children and 139,256 of adults. Of the ministers, 12,024 are recorded as "effective," 1,044 as "supernumerary," 2,057 as "superannuated," and 1,901 as on trial. The increase of members and probationers during the year was 76,596. The benevolent contributions were: For the parent Missionary Society (including legacies and sundries), \$1,174,554; for Church Extension, \$130,781; for the Sundayschool, \$23,065; for the Tract Society, \$20,350; for the Freedmen's Aid and Southern Education Society, \$98,104; for education, \$166,384; for the American Bible Society, \$29,937; for the Woman's Foreign Missionary Society, \$240,489; for the Woman's Home Missionary Society, \$221,356. Total benevolent contributions, as reported from the conferences, \$2,105,020. Amount of contributions for ministerial support (including bishops and presiding elders), \$10,385,948; for conference claimants, \$278,158; for building and improvements, \$4,379,307; for old indebtedness on church property, \$1,243,093, leaving, as the present indebtedness, \$10,894,156; for current expenses, \$3,680,698.

The Tract Society returned its receipts for the year, including the balance from the previous year, as having been \$20,554, and its expenditures as \$19,022. The society furnishes the various missions of the Church with funds for printing religious literature, supplies tracts to the Annual Conferences for use in the home missions, and distributes them to immigrants, inmates of hospitals, prisons, and asylums, to soldiers and sailors, and to pastors for their regular work. One million forty-four thousand two hundred English and 200,000 German tracts were printed during the year.

The year's receipts of the Sunday-school Union, as returned in its last published report, were \$22,543; and its disbursements, \$24,400. The number of Sunday schools under its care was 29,862—of which, besides those in the United States, 899 were in Europe, 2,358 in Asia, 36 in Africa, 120 in Mexico and South America, and 1,267 among immigrants—with 348,365 officers and teachers, and 2,510,539 pupils.

The receipts of the Board of Education for the year ending Nov. 30, 1895, were \$89,061. The amount of loans made for the fiscal year ending in July, 1895, was \$70,597. The total amount loaned from the beginning in July, 1873, to July, 1895, was \$603,580; average amount loaned each beneficiary, \$91.54. Six thousand five hundred and ninety-three students were aided from the beginning in 1873 to the close of the school year in 1895; the whole number of students aided during the last school year was 1,540, of 24 different nationalities, in 134 different schools.

The 57 colleges and universities, 7 colleges and seminaries for young women, 56 classical seminaries, 76 foreign mission schools, 4 missionary



institutes and Bible training schools, and 19 theological institutions return 2,657 professors and teachers, 42,249 students, grounds and buildings valued at \$14,644,525, \$13,621,894 of endowment funds, and indebtedness of \$1,699,266.

The annual meeting of the Church Extension Committee was held in Chicago, Ill., Nov. 7. The receipts for the year on the general fund, available for donations, had been \$171,237; on the loan fund, for loans only, \$74,201. Three hundred and two churches had been aided, making the whole number from the beginning of the work of the society 9,767. Applications for aid from 85 churches asking for donations of \$22,230, and loans of \$35,570 had been declined on account of lack of funds or of other financial considerations. The board began the new year with conditional grants to 141 churches amounting to \$40,350 in donations and \$15,800 in loans; and had applications on file from 9 other churches, for \$2,700 in donations and \$3,700 in loans. The amount needed for work on hand was \$62,550. Apportionments were made among the several conferences for 1896 of \$315,250, and the same amount was asked for in contributions.

The annual meeting of the Freedmen's Aid and Southern Education Society was held in Chicago, Ill., Nov. 11 and 12. The society had received during the year ending June 30, \$367,809, and had expended \$358,500. Reports were made of its work, of which the following is a summary: Number of schools among colored people, 22; including 1 theological seminary, 11 schools of collegiate grade, and 10 academies, with 223 teachers, 4,845 students, and property valued at \$1,281,000. Schools among whites, 22. Of these, colleges, 3; academies, 19. Total value of the 22 schools, \$648,800; teachers, 144; students, 3,580. Grand total of teachers (including 81 "practice teachers" in colored schools, and 25 in white schools), 473; students, 8,425. Of these, preparing for ministry, 219; in medical course, 285; in dental course, 12; in pharmaceutical course, 12; law students, 6; in manual training and trade schools, 1,549 colored students.

The annual meeting of the General Missionary Committee was held in Denver, Col., Nov. 14 to 19. The receipts of the society for the year ending Oct. 31 had been \$1,174,554, and the treasury was in debt \$306,243. The reports from the mission fields were not yet completed for 1895. The reports for 1894 give, in the foreign missions, 220 foreign missionaries and 221 assistants; 148 missionaries and 853 native workers of the Woman's Foreign Missionary Society; 49 foreign teachers; 576 native ordained preachers; 1,019 native unordained preachers; 1,155 native teachers; 1,555 local preachers and other helpers; 76,415 members; 59,418 probationers; 176,759 adherents; 13,710 adults and 9,338 children baptized during the year; 159,824 children in Sunday schools; 390 theological students; 5,833 pupils in high schools; and 34,590 pupils in day schools. In the domestic missions, 723 ministers; 387 local preachers; 39,522 members; 7,143 probationers; 555 adults and 3,535 children baptized during the year; and 44,376 pupils in Sunday schools.

Appropriations were made for 1896 as follows: *For Foreign Missions*: In Africa, \$5,601; South

America, \$53,475; China, \$115,761; Germany, \$25,222; Switzerland, \$7,812; Norway, \$13,370; Sweden, \$17,420; Denmark, \$7,905; Finland and St. Petersburg, \$4,220; India, \$130,000; Malaysia, \$8,370; Bulgaria, \$15,485; Italy, \$40,866; Mexico, \$49,642; Japan, \$50,600; Korea, \$14,880; total, \$563,629. *For Domestic Missions*, including those to Welsh, Swedish, Norwegian and Danish, German, French, Spanish, Chinese, Japanese, Bohemian and Hungarian, Italian, Portuguese, and Hebrew populations in the United States, for each class of which specific appropriations were made, American Indians, and English-speaking populations, \$456,329; miscellaneous appropriations, \$119,000; for the debt of the society, \$239,055; total appropriations, \$1,378,013.

The total receipts of the Woman's Home Missionary Society for the year ending in July, 1895, including \$113,216 as the estimated value of "supplies" contributed, were \$236,457. The receipts for the fifteen years of the society's existence, from July, 1880, to July, 1895, were \$1,601,490, of which \$637,840 were in the form of supplies. The society has 55 distinct missions, including missions for the Indians in Oklahoma, California, New Mexico, Washington, Utah, and Alaska; missions in behalf of immigrants in Boston, New York, Philadelphia, and New Orleans; city missions in Cincinnati and Chicago; 16 industrial homes and schools in the South, in which more than 1,200 girls are annually instructed in industries and morals; 3 industrial schools for Spanish Americans in New Mexico; the Mothers' Jewels' Home at York, Neb.; the Watts de Peyster Home at Tivoli, N. Y.; and 21 deaconesses' homes. It has 87 missionaries in the field, besides deaconesses and city missionaries and helpers. For the accommodation of its various missions it has invested the sum of \$450,000, of which \$225,000 is in city missions and deaconesses' homes. Seventy-five annual conference organizations, with 2,600 auxiliary societies, numbering 68,000 members, co-operate with it.

The Woman's Foreign Missionary Society received for the year ending Oct. 1, 1895, \$289,227, of which \$18,000 were by bequest, and \$271,227 by collections of "2 cents a week" contributed by the several members. One hundred and fifty-two missionaries are supported by the society, 14 of whom are medical missionaries, with 750 Bible readers; and 400 day schools, 49 boarding schools, 11 orphanages, 10 training schools, 13 hospitals and dispensaries, 3 homes for homeless women are maintained, 14,000 pupils are taught and cared for, and 60,000 patients receive medical attention annually. Representatives of the society are laboring in Japan, Korea, China, Malaysia, India, Burmah, Bulgaria, Italy, South America, Mexico, and Peru. Twenty missionaries were sent out during the year, 8 of whom went to India, 10 to China, 1 to Japan, and 1 to South America. Six of the number were graduates in medicine. One was a Chinese woman who had been prepared in the United States for medical missionary work, and was the only Chinese woman in the empire bearing a Western world degree. Three periodicals—one for adults, one for children, and a German magazine—are published by the society. It has 4,630

auxiliaries, 780 young women's societies, and 771 children's bands, with, in all, 151,163 members. The Wesleyan Home for children and missionaries is sustained at Newton, Mass.

**II. Methodist Episcopal Church, South.**—The Church Extension Board reported at its meeting in May that the collections for the year had amounted to \$53,503, and that \$2,795 had been received from legacies and special donations. Two hundred and eighty-four churches had been aided, or, including those which had been assisted by the Conference Board, 348 in all. The whole number aided since 1882 was 2,986. Since the organization of the Church Extension Society, \$839,566 had been raised for its purposes, nearly 3,000 churches aided, and more than \$3,500,000 in church property added.

The Board of Missions met in Louisville, Ky., May 3 and 4, and made appropriations of \$214,543 for sustaining the work during the ensuing year. Of this amount \$31,400 were appropriated to the missions in Brazil, \$31,947 to those in China, \$30,251 to the Japanese missions, \$26,660 to the Central Mexican, \$15,307 to those on the Mexican border, \$12,393 to those of North-west Mexico, \$17,500 to the Indian missions, and the rest to the conference missions. The conferences were asked to contribute \$350,000 to the support of the next year's work. Salaries were fixed at \$1,000 a year for married and \$550 for single missionaries in China, Japan, and Mexico, and \$1,100 and \$650 in Brazil; and it was provided that after ten years of service, \$100 should be added to the salary of married and \$50 to that of single missionaries, and that the allowance of \$100 for each child should be increased to \$150 when the child is five years old. An effort was determined upon to establish a new mission sanitary station in North China, where missionaries in the South may resort for rest and recuperation.

The seventeenth annual meeting of the Woman's Board of Missions was held in Meridian, Miss., May 10. The receipts of the society for the year had been \$143,677, and the expenditures \$96,923, leaving a credit balance of \$46,754, against which there were drafts, etc., payable, reducing the actual balance to \$22,360. Thirty-eight missionaries were supported in the foreign field, 15 of whom were working in China, 14 in Mexico, 8 in Brazil, and 1 in the Indian Mission. Nine missionary candidates had been accepted, and were awaiting appointments. The missions further returned 109 teachers and helpers, 12 boarding schools, 40 day schools, 1 hospital, 11 Bible women, and 4,379 women and children under instruction. A new center of work had been opened in Guadalupe, Mexico, and Centenary College, Rio de Janeiro, was to be removed to Petropolis, where a large estate had been bought.

The Woman's Parsonage and Home Mission Board reported as its most important single act during the year the determination to establish a school in the mountains of Kentucky. The people of London had offered a site and \$15,000 on condition that \$20,000 additional be raised as an endowment; and the affiliated society of the Kentucky conference had \$5,000 in hand for the building fund. An agent was appointed to canvass for the endowment.

The separate existence of this Church having begun May 1, 1845, in the city of Louisville, Ky., a jubilee celebration of the event was held during the first week in May, 1895, under the auspices of the Church Extension Board in the same place; and the College of Bishops and Board of Missions were invited to hold their meetings there and participate. The opening address of the jubilee was made by Bishop Hendrix, and related largely to the history of the organization of the Church and of the men most instrumental in effecting it. Addresses were delivered on "Woman's Work in the Church," by Bishop Hargrove; "Missions," by Dr. H. C. Morrison, Missionary Secretary; "The Church Press," by Dr. E. E. Hoss, editor of the "Christian Advocate" (Nashville); "Education in the Church," by Dr. W. W. Smith, Secretary of Education; "Sunday Schools," by Dr. W. D. Kirkland; "The Epworth League," by Prof. Collins Denny; and "Church Extension," by Dr. Morton, Secretary of the Board, Bishop Granberry, and Bishop Galloway. The sum of \$18,768 was subscribed during the meetings for Church Extension.

### III. Colored Methodist Episcopal Church.

—A congress representing this Church was held in Atlanta, Ga., Nov. 14 and 15, at which papers were read by the bishops and others, discussing the interests of the Church and various questions relative to the welfare of the colored race. Among the subjects of the papers were "The Relations of Methodism to Society, its Influence on the Moral and Civil Status of the Negro Race"; "The Papacy and the Negro Race"; "The Debt of Methodism to Woman"; "The Cause of the Origin and Growth of the Colored Methodist Episcopal Church in America"; "Methodism as a Factor in Education and the Influence of its Literature"; "The Itinerant System"; "The Relation the Colored Church should sustain to the Temperance Cause"; "The Character and Influence of the Negro Pulpit"; "Africa as a Missionary Field for the Colored Church"; "Religious Proclivities and Possibilities of the Negro Race"; "What the Bible has wrought for the Negro Race"; "The Moral, Social, Material, and Intellectual Development of the Negro Race," and others more general.

**IV. American Wesleyan Church.**—The fourteenth quadrennial session of the General Conference of the American Wesleyan Church was held at Fairmount, Ind., beginning Oct. 16. The Rev. N. Warder presided. Nineteen annual conferences were represented by delegates. The Pacific Conference had become defunct, but a new conference had been organized on the Pacific coast, known as the Willamette Conference; its delegates, however, were not present. An overture was sent down to the annual conferences, making it unlawful to receive into the Church persons who used tobacco. A paper favoring such a change in the Book of Discipline as, modifying the prohibition against membership in secret societies, would admit members of "minor" bodies of that class to communion in the Church, was pronounced unfavorably upon by the committee to which it was referred; but there being a general desire in the conference that it should commit itself again on the subject, the paper was reported, whereupon it was rejected, and the conference expressed its



determination that the prohibition should stand. A report was made concerning the introduction of the work of the Church into the State of South Carolina and its progress there.

**V. Methodist Church of Canada.**—This Church embraces eleven annual conferences, viz., the Toronto, London, Hamilton, Bay of Quinte, Montreal, Nova Scotia, New Brunswick and Prince Edward Island, Newfoundland, Manitoba and Northwest, British Columbia, and Japan Mission Conferences. They return in all 1,594 ordained ministers, 470 ministers on trial, 2,346 local preachers, 1,171 exhorters, 7,753 class leaders, 254,574 members, 13,166 members on trial (or probationers), 3,312 Sunday schools, with 32,039 officers and teachers and 255,887 pupils, and 66,774 members of young people's societies. The number of members of the Church and probationers (267,740) shows a gain of 6,787 during the year.

Three thousand three hundred and twelve Sunday schools are returned, with 32,039 officers and teachers, 255,887 pupils, and an average attendance of 174,107.

**VI. The Wesleyan Connection (British).**—The following is the general summary of the statistics of the British and affiliated conferences of this denomination:

FIELDS.	Members.	On trial.	Ministers.	On trial.	Super-numeraries.
Great Britain.....	437,722	30,050	1,643	189	305
Ireland and Irish missions	26,443	702	176	22	32
French Conference .....	1,489	87	27	6	9
South African Conference	41,755	17,142	152	28	20
West Indian Conference .	48,443	2,782	77	29	3
Foreign missions.....	40,979	9,589	267	97	14
Totals .....	596,731	59,852	2,342	371	383

These returns do not include the ministers and members of the Australasian Wesleyan Methodist Church or the Methodist Church of Canada, which are not under the jurisdiction of the British Conference.

The fifty-fifth report of the Committee on Education showed while the educational work was usually maintained with an expenditure of £25,000 a year raised by voluntary contributions, the special requirements of the department in the past year in the way of structural alterations and improvements had necessitated the expenditure of £62,656. The official returns showed that the number of day-school departments under the direction of the committee was 809, the whole number of pupils 173,176, and the income of the schools £253,190.

The Committee of the Fund for the Extension of Methodism in Great Britain reported that grants and loans to the extent of £4,706 had been made during the year, and that it had received from various sources £1,370. The fund was formed to promote the building of 1,000 chapels. This number has been exceeded.

The annual meeting of the Wesleyan Missionary Society was held in London, April 29. The total income of the society amounted to £125,806, while the debt—accumulated during several years—stood at £30,478, toward the removal of which £1,546 had been received. An increase was reported of 2,002 members in the

mission fields, with 9,105 persons on trial for membership.

The receipts for home missions were returned as having been £36,593. Encouraging reports were presented from the missions in London, Birmingham, Manchester and Salford, Liverpool, Hull, Leeds, etc.

The Wesleyan Conference met at Plymouth, July 23. The Rev. David J. Waller, D. D., was chosen president. A revised Covenant Service, submitted by the committee which had been appointed to consider that subject, was remitted to the district synods at their meeting in May for consideration. On the question of the extension of the term for which a minister can be appointed to the same station, the conference declared its adhesion to the three years' limit as a general rule, but recognized that there were cases when an extension of the term of service, "under careful regulations and restrictions," might be advisable. It found, however, that the present method of extending the time was very inconvenient. It therefore appointed a special committee to consider whether a satisfactory solution of the difficulty can be reached without an appeal to Parliament; and, secondly, if such an appeal to Parliament be deemed necessary or desirable, to suggest the form in which it should be made, and prepare, for the information of the people of the Church, a statement of the nature of the proposed change and the reasons why it was proposed. A report of a committee favoring the admission of woman representatives to the conference was laid upon the table after considerable debate. The following minute was adopted as expressing the sentiment of the conference concerning educational policy:

1. The conference repeats its declaration that the primary object of Methodist policy in the matter of elementary education is the establishment of school boards everywhere, acting in districts of sufficient area, and the placing of a Christian unsectarian school within reasonable distance of every family. This is of special importance in the rural districts, where our people have no alternative to the compulsory attendance of their children at Anglican schools.

2. There should be no increased grants of public funds, either from the local rates or from the imperial taxes, to denominational schools, unless that increased grant is accompanied by adequate and representative public management.

3. That no rational system of education which shall exclude from the day schools the Bible and religious instruction therefrom by the teachers suited to the capacities of children will meet the necessities of the country.

4. Our Connectional training colleges should be maintained in full vigor and efficiency.

5. With respect to our Connectional day schools the conference repeats its often declared sense of the great services they have rendered to Methodism and to the sacred cause of national Christian education, and it emphasizes their special importance in those localities where it is impossible to establish school boards acting in districts of sufficient area and having under their control Christian unsectarian schools.

The Educational Committee were authorized, if they should think fit, to co-operate with representatives of other nonconformist churches in giving effect to the policy of the conference, and to such resolutions as might be agreed upon by the special committee. To resolutions respecting church membership submitted by the South

African Conference the conference replied adversely to recognition in relation to church membership of any diversity of administration as between persons of different races or color.

A committee appointed by the conference of 1894 to consider the steps that should be taken in order to retain larger numbers of youths in the Church recommended a scheme for the formation of the "Wesley Guild." The report was referred to the district synods. The Privileges Committee reporting that they had waited without result upon the Prime Minister and the leaders of the House of Commons in the previous Parliament with representations of the inconveniences nonconformists were suffering with respect to burials, marriages, and other matters, another deputation was appointed to continue and press the representations. A report on concerted action among the Methodist churches of Great Britain affirmed its desirability, and recommended for submission to the several conferences—

That a united committee be annually constituted by the appointment of representatives by the several conferences for the purposes of mutual defense in the following proportions, viz.: Wesleyan Methodists, 16; Primitive Methodists, 8; United Methodist Free Churches, 6; Methodist New Connection, 4; Bible Christians, 4; Wesleyan Reform Union, 1; Independent Methodists, 1. That it is desirable that a Methodist yearbook be regularly published, and it is referred to the united committee to consider if this be practicable; that wherever practicable a united meeting of the ministers and an equal number of the representative members of the various Methodist churches be held once a year for devotion, fellowship, and counsel; that wherever practicable a united Methodist love feast be held annually on a Sunday afternoon; and that Whitsunday, when other arrangements will allow, be chosen for the purpose as commemorative of the Pentecostal descent of the Holy Ghost. The committee express the belief and hope that the better understanding which now prevails between the different Methodist churches will issue in the avoidance of the unnecessary multiplication of chapels, especially in small places, and recommends the several conferences to direct their respective chapel committees to correspond with one another to promote this result in the case of local difficulty and disagreement that may arise.

A resolution was adopted favoring union of all parties and denomination to promote new, unpolitical legislation relative to the drink traffic.

**VII. Colonial Wesleyan Methodist Churches.**—The statistical reports of the South African Conference give it 200 traveling preachers, 2,394 local preachers, 58,897 members, 428 Sunday schools, with 2,169 teachers and 28,500 pupils, 562 churches, and 1,611 other preaching places.

The West Indian Conference returns 111 traveling preachers and 51,125 members.

The Australasian Wesleyan Methodist Church returns 630 traveling preachers and 94,407 members.

**VIII. Primitive Methodist Church.**—The statistical reports of this Church, presented to the conference in June, showed that the present number of members was 196,324, an increase for the year of 593; of class leaders, 10,595; of local preachers, 16,728; of connectional chapels, 4,622; of adherents, 604,100; value of connectional

property, £3,708,143, against which stood an indebtedness of £1,077,826.

The Sunday schools numbered 4,379, with 62,066 teachers and 462,856 pupils, or 6,525 more than in 1894.

The annual meeting of the Primitive Methodist Missionary Society was held in London, May 28. Mr. Edwin Robson, of Hull, presided. The total revenue for missionary work had been £32,778, the total ordinary receipts having been £16,383; the receipts on account of the African fund, £3,731; money raised by the home missions and appropriated locally, £10,953; and money raised by the African missions and appropriated locally, £1,710. Nine home mission stations had become independent stations, reporting 1,357 members. The society had 6 missions in London, 31 in the provinces, 4 in Wales, 2 in Scotland, and 3 in Ireland, with an aggregate membership of 5,625, showing an increase during the year of 221. The African mission included 6 principal stations and 20 out stations, 8 European ministers, 3 native ministers, 6 native assistants, 40 native local preachers, 48 class leaders, and 1,040 church members, all total abstainers. An increase for the year of 76 members was shown.

The conference met in Edinburgh, June 13. The Rev. John Watson was chosen president. The Joint Committee on Union of the Primitive Methodists and the Bible Christians reported as the conclusion arrived at in the two meetings that had been held during the year, that there were so many features in which the two churches were alike that in the event of union neither would be required to make any perceptible change, while in other respects slight differences existed which could easily be adjusted. The serious differences were very few. As the name of the Church, in case union was carried out, the committee suggested "Presbyterian Methodist Church" or "Methodist Union Church." Resolutions were adopted approving of organic union as an ulterior object to be sought among all the "minor" Methodist bodies. Arrangements were made for enlarging Manchester College.

**IX. United Methodist Free Churches.**—The summary of the statistical returns of this body, as presented to the annual assembly in July, is as follows: Number of itinerant ministers, 435; of local preachers, 3,371; of leaders, 3,378; of members, 80,149; of persons on trial for membership, 9,304; of chapels, 1,401; of preaching rooms, 246; of Sunday schools, 1,376, with 25,800 teachers and 206,783 pupils. An increase for the year of 1,236 was shown in the number of members. During the year 8,500 persons had been admitted to membership.

Reports were made in the assembly concerning the operations of the book room, the Chapel Relief and Loan funds, Ashville College, and the Theological Institute. Promises of £15,000 had been obtained toward £20,000 to build and endow a theological college.

The report of the deaconesses' work showed that it had grown in the confidence of the Connection, and was well and universally supported. The expenditures had been £979.

The thirty-eighth annual meeting in behalf of the home and foreign missions was held in



London, April 23. The report mentioned a slight increase in the membership of the home missions, on which £2,320 had been spent during the year. The question of Methodist union in the Australian colonies had again engaged the attention of recent conferences, and resolutions had been adopted showing its urgency and suggesting methods for bringing it about. The home assembly would give its hearty sanction to colonial union on liberal lines of policy. The mission in Jamaica had been affected by commercial depression, that in Central America by civil disorder. The prospect in Sierra Leone was encouraging, and the local income included a number of subscriptions from local chiefs. The year had been one of great peril to the mission on the Tana, East Africa. In China, the work at Wenchow had been eminently satisfactory. The mission staff at the foreign and colonial stations consisted of 72 missionaries and 341 local preachers and native helpers, with 512 leaders, 10,896 church members, 2,483 on trial, 307 chapels and preaching places, and 11,684 pupils in the Sunday schools. The whole number of home and foreign members was 78,913. The total income had been £21,094, and the expenditure £21,172.

The Annual Assembly met at Norwich, July 9. The Rev. W. R. Sunman was chosen president. A scheme for the religious and denominational instruction of the young people of the churches, was adopted. It provides for the object mentioned, together with the oversight of Christian Endeavor Society junior classes and Christian Bands, establishes a system of regular instruction and examination, and contemplates competitive essays on given subjects. Counsel to whom the question had been referred whether instead of the nomination of the district members of the connectional and assembly committees in open assembly, as was now the practice, the selections could not be made at the district meetings in May, subject to approval by the assembly, decided that under the "foundation deed" the assembly could not relegate its right of appointment to any other meeting. This, however, did not affect the validity of first nomination by the district meeting. It was decided that the district meetings should in future nominate, while the final decision and the right to add to the list should be reserved to the assembly. A code of circuit rules, for a nearer approach to uniformity in usage, was approved.

**X. Methodist New Connection.**—The statistical returns of this body, presented to the conference in June, give the totals of chapels, 544; ministers, 203; local preachers, 1,193; members, 32,073 (year's increase, 5); members on trial, 4,834 (increase, 90); teachers in Sunday schools, 11,000, with 84,500 pupils. While a large number of the circuits returned an increase in membership, it was neutralized by a falling off in others, chiefly in the Irish and foreign missions.

The income for Foreign Missions, £4,694, fell short by £100 of meeting the expenditure. Of the Centenary fund, to which £48,282 had been promised, more than £17,000 had been raised and paid in the circuits for local objects, and the treasurer had received £1,322 for Connectional funds.

The conference met in Halifax, June 10. The Rev. George Packer was chosen president. A revision of the rules, appointed to be made every seven years, was acted upon. All proposals to change the title of the Connection were rejected. Provision was made for the visitation of absentee members; the principle of representation in leaders' meetings in proportion to the number of members was affirmed, and women were declared not barred from becoming members of such meetings; it was ordered that the absolute time limit of a minister's stay in a circuit (five years) be so modified that a minister in special cases of need and by special sanction of the conference may remain longer, year by year, indefinitely. Some new regulations were made concerning the relations of the Christian Endeavor societies and the class meetings.

**XI. Bible Christians.**—The statistical reports of this connection for 1895 give it 294 traveling preachers, 34,037 members, 541 Sunday schools (in England) with 9,295 teachers and 56,222 pupils, and 980 churches and other preaching places.

The total expenditures of the Bible Christian missions for the year had been between £7,000 and £8,000. Good progress was reported at the annual meeting for the home stations. In the Australian missions a total increase of 508 members had been realized. In China, 8 brethren and sisters were working in Hunan, who reported encouraging progress.

The Bible Christian Conference met at Barnstaple July 31. The Rev. John Thorne, of South Australia, was chosen president. An increase during the year of 600 members was returned. The new missions at home and the vigorous prosecution of the mission in China had compelled greater expenditure, in consequence of which a balance deficit of £763 was returned. The report of the chapel secretary represented that £31,713 had been raised during the year for church building purposes, while £3,000 had been borrowed; but £6,108 of debt had been paid off. Since the death of James Thorne, in 1871, £536,226 had been raised for this work. Reports were made of Shebbear College for boys and Edgehill College for girls. A report was presented by a Committee on Union with other "minor" Methodist churches, which, as adopted, approved of union, as sought by a resolution passed by the Primitive Methodist Conference (see "Primitive Methodist Church"), but suggested that it would have been better if a basis of union had been first agreed upon between the Bible Christian and the Primitive Methodist Churches; seconded the recommendation of a policy of neutral intercourse for making the two peoples better acquainted with each other; and provided for the appointment of a committee to deal with the whole question. The consent of the conference was given to projected movement for the union of the Australasian Methodist churches, to which the colonial Bible Christian Church will be a party. The resolutions adopted by the Committee of Methodist Churches which met in London, April 16, contemplating concerted action on certain public questions affecting the interests of these churches were approved, and representatives of the Bible Christian Church were appointed to the committee. A whole day

of the conference session was devoted to the celebration of the one hundredth year since the birth of James Thorne, one of the founders of the denomination, Sept. 1, 1795. The General Committee was instructed to prepare regulations for admission of women into Church courts, and to lay them before the next conference.

**XII. The Wesleyan Reform Union** reports 349 traveling preachers, 579 local preachers, 7,992 members, 175 Sunday schools with 2,908 teachers and 21,183 pupils, and 202 churches and other preaching places.

**XIII. The Independent Methodist and Free Gospel Churches** have 349 traveling preachers, 7,534 members, 124 Sunday schools with 2,470 teachers and 22,489 pupils, and 131 churches and other preaching places.

**MEXICO**, a federal republic in North America. The Senate consists of 56 members, 2 from each State, elected indirectly for four years, and the House of Representatives of 227 members, 1 to 40,000 inhabitants, elected for two years by direct suffrage. The President is elected by an electoral college for four years. The President for the term ending Nov. 30, 1896, is Gen. D. Porfirio Diaz. The President's Cabinet, consisting of secretaries of state whom he may appoint and remove at will, was composed in 1895 as follows: Foreign Affairs, I. Mariscal; Interior, Gen. Gonzalez Cosio; Justice and Public Instruction, J. Baranda; Fomento, Fernandez Leal; Finance and Commerce, J. I. Limantour; Communications and Public Works, Gonzalez Cosio; War and Marine, Gen. P. Hinojosa; Treasurer, F. Espinosa.

**Commerce and Production.**—The chief products of Mexico are silver, lead, gold, copper, cinnabar, iron, tin, onyx, and other metals, ores, and minerals; heniquen and other fiber plants; coffee; cotton; tobacco; oranges and other fruits; wheat and corn; mahogany, ebony, rosewood, orchil, sarsaparilla, and other woods and forest products; and cattle and horses and animal products. The commerce with different countries for the year ending June 30, 1894, was as follows, in Mexican dollars:

COUNTRIES.	Imports.	Exports.
United States.....	\$14,352,000	\$60,660,000
Great Britain.....	5,755,000.	11,596,000
France.....	4,359,000	2,437,000
Germany.....	2,686,000	2,839,000
Belgium.....	330,000	401,000
Spain.....	1,949,000	554,000
Other countries.....	856,000	856,000
Total.....	\$30,287,000	\$79,343,000

The values of the principal exports were: Precious metals, \$46,484,000; coffee, \$11,766,000; heniquen, \$6,719,000; hides, \$2,256,000; timber, \$2,073,000; copper, \$1,980,000; tobacco, \$1,755,000; vanilla, \$1,184,000; ixtle, \$942,000; guns, \$803,000.

During the fiscal year 1893-'94 there were 8,958 vessels entered at Mexican ports, of an aggregate burden of 2,937,996 tons, of which 3,628 were steamers, of 2,589,768 tons. The total number of vessels cleared was 8,919, of 2,889,588 tons, of which 3,547 were steamers, of 2,540,043 tons. The merchant navy numbers 260 vessels, of which 47 are steamers.

**Communications.**—There were 6,284 miles of railroads in operation in 1895. All the principal lines are now completed, but branch lines are in progress. The bridges and other permanent works on the Tehuantepec line, built by the Federal Government, are about completed. The length of new railroads under construction is 6,914 miles.

The number of domestic letters and postal cards that passed through the post office in 1894-'95 was 126,211,715; the number handled in the international service, 24,612,803. The postal receipts were \$1,358,348, and expenses \$1,268,354. Internal postage rates have been reduced, and the money-order and parcels-post services are being extended.

The telegraphs in June, 1895, had a total length of 39,193 miles, of which 26,152 miles belonged to the Federal Government and the rest to individual States.

**The Army and Navy.**—The military forces consist of the active army, its reserve, and the general reserve. The strength of the active army on the peace footing in 1895 was as follows: Infantry, comprising 30 battalions and as many *cadres*, 3 auxiliary battalions, 1 battalion of pioneers, and the invalid corps, 1,293 officers and 22,437 men; artillery, comprising 4 battalions of 6 batteries each, 1 battalion of fortress artillery, and 1 squadron of train, 184 officers and 2,120 men; cavalry, comprising 13 regiments, 1 corps of gendarmes, 6 auxiliary troops, and 9 divisions of rural guards, 793 officers and 10,276 men; total effectives, 2,270 officers and 34,833 men. The peace effective, including the reserves, is 60 general officers, 3,600 field officers, and 45,000 men, with 7,000 horses and 3,000 mules. The war effective is about 165,000 men.

The fleet consists of 2 avisos, 2 old gunboats, and 1 school ship. There are building 5 first-class torpedo boats.

**Finances.**—The revenue of the Federal Government is chiefly derived from import duties, internal-revenue duties, stamp duties, and the Federal contribution, which is an additional duty levied on all taxes collected by the States. The States levy excise duties and direct taxes. The budget of the Federal Government for 1895-'96 estimates the total revenue at \$44,747,000, of which customs produce \$20,475,000; the Federal contribution, \$1,650,000; direct taxation, \$1,460,000; posts and telegraphs, \$1,775,000; the mint, \$1,100,000; stamps, \$15,624,000; tax on public salaries, \$1,050,000; and other sources, \$1,613,000. The total expenditures are estimated at \$44,947,522, of which \$1,005,638 are for the Legislature, \$50,977 for the Executive, \$478,171 for the Supreme Court, \$493,994 for foreign relations, \$2,607,391 for the Interior Department, \$1,552,828 for justice and education, \$5,527,536 for financial administration, \$13,513,000 for the external debt, \$4,227,844 for the internal debt, \$4,605,639 for communications and public works, and \$10,268,334 for the army and navy.

The public debt on June 30, 1894, consisted of \$103,438,000 of foreign loans (bearing 6-per-cent. interest mostly), and \$65,821,470 of interest-bearing internal obligations and \$18,144,051 bearing no interest. The burden of the foreign debt has doubled since the decline in silver, the cost of exchange amounting to as much as the former



annual interest. The low price of silver has stimulated production and imports and the exportation of other things besides Mexican dollars. The export demand for ores has caused a revival in the mining industry, while the culture of coffee and tobacco and manufacturing industries have gained an impetus. Owing to these causes, the financial embarrassments of the Government have been nearly overcome, and the prospect of an equilibrium in the budget is so near that reforms in the *octroi* system and the removal of the special tax on Government salaries are contemplated.

**Legislation.**—The Congress has under consideration changes in the Federal Constitution prohibiting coinage of money and issuance of paper money or stamps by the separate States, and also putting an end to tariff discriminations between the States and conferring on the Federal Government the exclusive right to hinder or prohibit the transportation of goods, foreign or domestic. A copyright treaty has been concluded with Spain, and a treaty of commerce and navigation with Belgium. The Mexican Government has proposed amendments to the extradition treaty with the United States, desiring to have the legal proceedings necessary for extradition simplified and shortened, and to bind each of the contracting parties to deliver up its own citizens when guilty of crimes against the peace of the neighboring republic. Attention has been given lately to sanitary legislation. Precautions have been taken especially against the introduction of cholera and yellow fever, and the States have been urged to establish hospitals for the isolation of patients suffering from contagious diseases. As a result of recently adopted preventive measures the public health is undergoing a marked improvement. The benefits accomplished by the national pawnshop are so apparent that its action will be extended.

**Indian War.**—In the southern part of Yucatan, bordering on British Honduras, is a district claimed by the Maya Indians, on which white men have settled. The Mexican Government has confirmed their rights and defended them against the aborigines. In 1895 the Mayas acquired a large quantity of arms with the intention of forcibly regaining their hereditary possessions. In August 500 of them left Bacalar to invade the disputed district. Several bloody skirmishes occurred between them and the Mexican soldiery, and the Minister of War hastened to dispatch troops enough to the spot to check the threatened outbreak.

**Colonization of American Negroes.**—A colored citizen of the United States, W. P. Ellis, contracted with a company owning a large tract near Tlahualila to import 1,000 negroes to farm the land. In 1894 he brought 60 colonists with their families, and all these proved to be expert-cotton planters and industrious agriculturists. In the winter the rest of the colony was recruited in Alabama and Georgia, but no care was taken by the agents who sent the emigrants to get competent persons. When they arrived they could earn but little and were disappointed and miserable. A strange disease that broke out filled them with dread. In July 50 of the colonists set out to tramp to their old homes, but got lost in the Mapimi desert. They were over-

taken, but fought their rescuers before they would return to the plantation. The company furnished rations to this band and to others that followed, and shipped them back to the United States until none were left but the earliest settlers—too few to pick the 65,000 acres of cotton that had been planted.

**The United States Boundary.**—An International Boundary Commission that has been engaged in resurveying the boundary from El Paso, Texas, to San Diego, Cal., since July, 1892, finished its work in 1895. The Mexican commissioners were Señor Blanco and Dolores Sanchez, while Col. J. W. Barlow, A. T. Mosman, and Lieut. D. D. Gaillard acted for the United States. Of the stone monuments erected by Col. Emery's commission in 1849-'53 some had disappeared and some that still stood were found to be out of place. In the agreement for a new survey made by the two governments in 1888, it was stipulated that property titles should not be affected by any corrections in the line. An error was found in New Mexico that transfers 40 square miles from Mexico to the United States in New Mexico. Another gives to Mexico 60 square miles in the lower part of the Colorado desert. The new boundary runs through the main business street of the town of Nogales. The commission replaced the 52 early boundary monuments and erected 296 more. A second commission began early in 1895 the survey of the boundary line along the Rio Grande, from El Paso down to the Gulf of Mexico.

**MICHIGAN**, a Western State, admitted to the Union Jan. 26, 1837; area, 58,915 square miles. The population, according to each decennial census since admission, was 212,267 in 1840; 397,654 in 1850; 749,113 in 1860; 1,184,059 in 1870; 1,636,937 in 1880; and 2,093,889 in 1890. By the State census of 1894 it was 2,241,454. Capital, Lansing.

**Government.**—The following were the State officers during the year: Governor, John T. Rich; Lieutenant Governor, Alfred Milnes, who resigned May 31, having been elected to Congress in April to succeed United States Senator-elect J. C. Burrows; J. R. McLaughten is the acting Lieutenant Governor; Secretary of State, Washington Gardner; Treasurer, James M. Wilkinson; Auditor, Stanley W. Turner; Adjutant General, Charles L. Eaton; Superintendent of Instruction, Henry R. Pattengill; Attorney-General, Frederick A. Maynard—all Republicans; Railroad Commissioner, Simeon R. Billings; Food Commissioner, C. E. Storrs; Insurance Commissioner, Theron R. Giddings; Land Commissioner, William A. French; State Tax Statistician, Victor C. De Land; Labor Commissioner, C. H. Morse; Fish and Game Commissioner, H. W. Davis; Bank Commissioner, T. C. Sherwood; Chief Justice of the Supreme Court, Charles D. Long; Associate Justices, Claudius B. Grant, Robert M. Montgomery, Frank H. Hooker, Joseph B. Moore.

**Finances.**—Following is a summary of the operations of the Treasury Department: Balance on hand Dec. 31, 1894, \$66,894.24; received during 1895, \$4,075,575.39. Disbursed, \$4,079,890.76; balance Dec. 31, 1895, \$62,578.87.

The Legislature appropriated \$1,900,000 for general expenses of the State Government for

1895 and \$1,171,000 for 1896. Deficiencies left from the appropriations of 1893, which were to be provided for, amounted to \$760,509.39. The total apportionment for taxes for 1895 was \$3,013,919.52.

Several counties having held back taxes alleged to have been collected and due the State, the State petitioned as a test for a mandamus to compel Bay County to pay its claim, amounting to \$111,549.54. The county alleged that a large sum was due it from the State, and that in 1884 its treasurer erroneously accepted \$95 in settlement, when the full amount due the county was very much larger. The case was settled in favor of the State by the Supreme Court.

**Census Returns.**—Besides the statistics of population given by the census of 1894, summarized in the "Annual Cyclopædia" for that year, it has afforded other details, showing the growth of industries and production given in bulletins issued by the Secretary of State in 1895.

Under the census law every establishment of productive industry, including mines and fisheries, in which the value of the products amounted to \$200 or over, was to be reported. The total number of industrial establishments of all kinds reported is 8,812; capital invested, \$251,356,205; value of materials used, \$125,743,139; value of productions, \$237,857,772. The average number employed is: Adult males, 146,153; adult females, 15,659; boys, 3,482; girls, 355. The total wages paid during the year is reported at \$60,188,142; the average daily wages paid to skilled mechanics, \$1.99; to ordinary laborers, \$1.20. Compared with the census returns for 1884, there is an increase of 88 in the number of establishments, of \$72,514,481 in the capital, of 17,226 in the number of males, and of 7,374 in the number of females employed, and of \$9,434,365 in the wages paid. The number of children employed as returned for this census is 2,489 fewer than in 1884.

No farm of less than 3 acres was reported in the census unless \$200 worth of produce was actually sold from it during the census year. The number of acres of farms in the State is 15,296,078, or 42 per cent. of the total land area. In the upper peninsula they constitute 5 per cent. The number of farms reported is 178,051. The average size is about 8.46 acres less than in 1884. An average of 67.86 per cent. of the total area in farms is improved. The area in farms increased in the four years from 1880 to 1884 1,044,986 acres, or more than 2½ times the increase in the ten years from 1884 to 1894. The value of farms, including land, fences, and buildings, is shown to be \$528,249,503, compared with \$571,443,462 in 1884. The average value per acre in 1884 was \$38.48, and in 1894, \$34.54. The State totals of the dairy statistics for the year ending June 1, 1894, are as follow: Total milk produced on farms, 212,070,373 gallons; value of all milk and cream sold from farms, \$2,970,385; butter made on farms, 48,951,378 pounds; cheese made on farms, 206,660 pounds.

The number of chickens in the State June 1, 1894, was 7,102,007; turkeys, 273,578; geese, 75,146; ducks, 125,510.

The number of acres of clover mowed was 911,699, and of meadows other than clover, 1,351,477. The yield of clover hay was 1,238,185 tons, and

of meadows other than clover, 1,717,672 tons. The number of silos June 1, 1894, was 501, with a capacity of 52,846 tons. The number of acres of corn raised for silage in 1893 was 7,259.

The number of births in the year ending June 1, 1894, is returned at 59,889, an increase of 11.37 per cent. compared with the number in the year ending June 1, 1884. The number of births was 26.7 to each 1,000 inhabitants. To each 100 female children the number of male children was 108.

The proportion of the native population who become parents is about one fourth less, and of the foreign born one ninth more, in the cities than in the country.

The total number of illiterate persons ten years old and over is returned at 95,037, of whom 70,772 can neither read nor write, and 24,265 can read but can not write. By the State census of 1884 the total was 111,213. The proportion of native-born illiterates is 21 in each 1,000, and of foreign born 84 in each 1,000.

The total male population aged twenty-one years and over (voting ages) in the State is 651,920, of whom 34,545 can not read or write.

**State Institutions.**—A large appropriation was made this year for the new insane asylum at Newberry. It is desired to erect 8 more buildings within the next two years. On the recommendation of the Board of Corrections and Charities, the law under which private asylums are authorized to maintain certain inmates as State patients was so amended as to require State inspection as to the treatment and care of such patients before bills for their maintenance are allowed.

The number of criminal insane at Ionia was 196 at the close of the biennial period, and the average population for the term 184. During that time 102 were admitted, of whom 9 were women.

Since the opening of the State public school, in 1874, nearly 3,700 children have been received. There are now about 200 at the school, and 1,350 boarded or placed in families and under its supervision.

The State Home for the Feeble-minded and Epileptic, at Lapeer, was declared ready for the reception of patients in August.

There were 570 inmates at the Ionia prison in May. From July 1, 1894, to March 1, 1895, the furniture factory at the institution yielded a profit of \$17,600.

**Education.**—An abstract of the report of the President of the University of Michigan to the Legislature gives the following figures: For the year ending June 30, 1893, the receipts were \$348,753.08, and the disbursements \$375,986.68. For the year ending June 30, 1894, the receipts were \$445,801.01, and the disbursements \$387,789.11; which, after covering the deficiency of 1893, left a balance of \$44,731.34.

In the literary department 990 Michigan students have paid \$28,015 in fees this year, and 521 nonresidents \$22,738. In the medical and surgical department 191 Michigan students paid \$6,240, and 183 nonresidents \$8,770. In the law department 215 students of Michigan paid \$7,270, and 443 nonresidents paid \$22,340. In the pharmacy department 35 Michigan students paid \$1,205, and 42 nonresidents paid \$2,295. In the homœopathic school 10 Michigan stu-



dents paid \$400, and 7 nonresidents \$340. In the dental department 102 Michigan students paid \$3,520, and 80 nonresidents paid \$3,905.

The university graduated 692 students.

The State Board of Agriculture took action in June on the subject of student labor at the Agricultural College, declaring that the system of labor provided for in the organic law of the institution includes all students enrolled, whether regular or special, summer or winter; and that in the assignment of labor no special line of work done for any *attaché* of the college or for any department of the college shall be allowed to be substituted for manual labor in the regular course, unless such labor shall be considered by vote of the faculty of the college equally valuable with the regular required labor in subserving the cardinal purpose of the institution.

The Legislature of 1895 provided for farmers' institutes in every county desiring them.

**State Lands.**—The Land Commissioner's report shows that the State holds 429,889.23 acres. The department disposed of 9,939.24 acres the past year for a consideration of \$24,790.96. The report says: "During the year there has been collected \$6,153.07 on account of trespass on State lands."

**Insurance.**—The total amount of premiums received in Michigan during 1894 was \$4,530,275.91. The losses incurred were \$2,035,112.87. The amount of premiums received was \$215,000 less than in 1893, and the losses were \$1,371,504.55 less.

One company has been ordered to discontinue business, and 4 have been authorized to do business in the State, and many mutual companies to do business throughout the entire State.

The report of the life companies shows that the total number of regular or level premium life companies doing business in the State during the year was 39, being 2 in excess of the number for the year previous. The business transacted by these companies was as follows: Policies issued, \$31,775,353; policies in force at the end of the year, \$124,363,286; premiums received, \$4,296,070; losses incurred, \$1,146,367.

The question of a physician's obligation to testify came up in a suit at Battle Creek to annul a large policy on the ground that the applicant had misrepresented his physical condition. The physician who treated him refused to testify or answer any questions, on the ground that a physician's relations to his patient are sacred, and that he could not be compelled to testify in regard to the ailments with which his patient is afflicted. The attorney held that this was true so far as related to personal matters, but that under the new State law physicians could be compelled to testify in regard to any question relating to public matters or that affected other persons. The judge ruled that the physician must give his testimony.

**Savings Banks.**—The savings deposits in the State Dec. 19, 1894, were \$35,939,957.25, an increase of more than \$3,500,000 over those of the year preceding. Of the Central Michigan Commercial and Savings Bank, which failed in 1893, the Commissioner says: "The total assets turned over to the receiver May 8, 1893, was \$862,683.95. Of this amount the receiver has collected \$422,818.89, and from this amount,

under the direction of the Commissioner, he has declared 5 dividends. The cashier of the bank, charged with making a false statement in the report, was acquitted in February, 1895.

**Labor Interests.**—The twelfth annual report of the Labor Bureau, issued in March, covers the year 1894. It says:

The conditions surrounding the industrial population of Michigan have been continually changing through the year 1894. A very large proportion of laborers have found employment, quite often at wages reduced from those of two years ago. The reduced cost of most of the necessities of life has so far partly compensated for reduction in wages. Statistics show that the percentage of farms worked by owners is decreasing and the percentage of farms worked by renters is increasing. The bureau has directed factory inspection in Michigan since Sept. 1, 1893. Nearly 5,000 factories have been inspected. Over 100 fire escapes have been ordered on factories more than two stories high, and a very large proportion of them have been constructed. A large number of "blowers" for dust-creating machines have been provided.

A great strike was on at Ishpeming and Negaunee in the summer, about 3,000 miners having quit work. By early September the situation had become so serious that troops were called for, several companies were sent by the Governor, and the works were started again under protection of the militia. By the end of the month as many as 2,000 of the strikers were taken back to work, the leaders, who were well known, being discriminated against.

**Legislative Session.**—This began Jan. 8 and ended May 31. On joint ballot there were 99 Republicans and 1 Democrat. The candidates for the office of United States Senator, made vacant by the death of F. B. Stockbridge, and temporarily filled by John Patten, Jr., were Julius C. Burrows, Schuyler S. Olds, John Patten, Jr., Jay Hubbell, and S. M. Stephenson. Mr. Burrows was elected, receiving 70 votes on the second ballot in the caucus. Senator McMillan was re-elected.

The Legislature passed 260 general acts. The Governor vetoed 22 bills, among them one providing for an interchangeable mileage book, passed at the solicitation of the commercial travelers of the State. It was to compel all railway companies to sell such tickets and to receive them, except such as have in their charters provisions conflicting therewith. Among bills passed was one providing a blanket charter for cities of the fourth class, each of which has the privilege of voting on the question of excepting it.

Several laws were made in reference to schools, among them the following:

Qualified voters at school meetings must be citizens of the United States. Persons qualified to vote on questions involving the raising of money by a tax must own property that is assessed for school taxes. The minimum length of the school year increased from three to five months. In addition to the qualifications formerly required of the commissioner, he must have had twelve months' experience in teaching. No certificate can legally be granted to persons twenty-one years of age and over who are not citizens of the United States. The State Board may indorse certificates granted in other States. Provision is made for teaching the modes by which dangerous communicable diseases are spread, and the means of prevention. Trustees must provide United States flags for school buildings. Attendance at school is made

compulsory between the ages of seven and sixteen in cities, and eight and fourteen in the country, for four months in the year. Habitual and incorrigible truants may be committed to the public school at Adrian or at Lansing. Tuition is not to exceed the average cost *per capita* more than 15 per cent.

A number of amendments were made to the general tax law, one forbidding the recording of a deed until a certificate is presented showing that there are no tax liens or titles held by the State or by any individual, and that all taxes have been paid for the five years preceding the date of the instrument.

An important act was one relating to lobbying. It provides that every person, or private or public corporation, employing agents or counsel shall cause them to be registered in a docket, kept by the sergeants at arms for such purpose, with his or her address, and the bill he is interested in, and no person shall be allowed to appear before any committee unless his name appears on the docket.

Within thirty days after the adjournment of the Legislature a detailed statement of all expenses paid or incurred in connection with the employment of legislative counsel or agents must be filed with the Secretary of State.

Petitions were sent in asking that an amendment authorizing prohibition be submitted to the voters, and a resolution to that effect was introduced. Amendments of the liquor law were proposed—one to provide for the recovery of actual and exemplary damages, and one by the friends of the liquor interests for a uniform \$400 tax law, instead of the existing law of \$300 for sale of malt and \$500 for that of spirituous liquors. A uniform tax of \$500 was imposed.

Among the laws affecting elections was the "antifusion" law, forbidding the name of a candidate nominated by two or more parties from appearing more than once on the official ballot. The constitutionality of this law was questioned, and a test case was brought before the Supreme Court, which decided in favor of the law. The candidate may choose the ticket he prefers; in default of notice from him, he is to be entered as the candidate of the party first making the nomination.

The temporary office of State tax statistician was created, extending to March 1, 1897. The bill was so modified as to make the continuance of the office depend upon the next Legislature.

The newspapers of the State asked for changes in the libel laws, and changes were made, though not to the extent desired.

A "pure-food" law was enacted.

A new factory-inspection law retains the important parts of the law of 1893 and includes some new features. The employment of children under fourteen is forbidden.

Bills affecting the prisons were introduced, and the "parole system," as practiced in some other States, was adopted. If a convict has served half his term or the minimum sentence for his offense, the Governor may release him on parole, on recommendation of the prison authorities, to go to a place of employment engaged in advance, where he is to stay till his sentence expires, unless ordered back to prison.

A bill providing for capital punishment on conviction of murder in the first degree by

means of poison or in perpetrating or attempting to perpetrate rape, arson, robbery, or burglary, passed the Senate, but failed in the House by a vote of 47 to 47.

A bill for free text-books was voted down, as was also a proposition to submit a constitutional amendment giving suffrage to women. One requiring voters to be able to read the State Constitution in the English language passed both houses.

The statute relative to divorce was amended so that no decree shall be granted unless the parties have lived in Michigan at least one year preceding the date of the application, or unless the parties were married in the State and had lived there since. If married in another State, they must live in Michigan two years before a decree is granted. No testimony is to be taken in the case until four months after complaint has been made, except in case of desertion. It provides that as soon as a divorce is granted the parties may marry again.

Manitou County was divided, part of the islands being added to Grand Traverse County and part to Leelenaw County.

Acts were passed for the better protection of the estates of minors.

A joint resolution was passed urging the Michigan members of Congress to do all in their power to have Congress give the island of Mackinac to Michigan for a public park. It was so given, and commissioners were appointed by the Governor to take charge of the park.

A joint resolution was passed requiring the Board of Auditors to determine the amount due on account of salaries paid to State officers who obtained office as the result of the election frauds of 1891 and 1893, and to bring suit to recover.

Other acts of the session were:

Authorizing the Michigan Dairymen's Association to hold a State institute, and making an appropriation therefor.

Enabling the regents of the university to take and hold in its perpetual trust land or other property.

Defining what shall constitute fraternal beneficiary societies.

Permitting townships, cities, and villages to use the Myers automatic ballot machine at elections.

For regulation of the sale of goods marked "sterling," "sterling silver," "coin," or "coin silver."

Providing for reorganization of fire and marine insurance companies.

For a further geographical survey of the State.

Making it unlawful for any corporation or company to abandon any factory or manufacturing establishment in any town, which town has given such company or corporation a bonus.

Raising the age at which women may marry without the consent of parents or guardians from sixteen to eighteen years.

Establishing a law uniform with that of other States relative to the acknowledgment of written instruments.

Making it unlawful for delegates to any political convention to be represented by proxy.

Providing a *per capita* tax of one eighth of a cent for the support of the naval reserve.

Directing that in suits for libel the jury shall separate its verdict as between damages for injuries to feelings and actual damages.

Providing for a recompilation of the statutes.

Providing for the removal of the homœopathic department of the university to Detroit.

Amending an act relative to the killing of deer, making the close season from Nov. 1 to Nov. 15, and



prescribing under what conditions nonresidents may come in.

Providing for the protection of fish.

Making it a misdemeanor for any person to buy, barter, or sell any quail, partridge, or woodcock in Michigan at any season.

Providing a more severe penalty for cheating, obtaining money by false pretenses, etc.

Establishing a State normal school at Mount Pleasant.

Placing building and loan associations under the supervision of the Secretary of State.

Providing that all the assets of any insolvent person except the \$250 reserved against execution shall be considered attachable.

Reincorporating Bay City and Muskegon, and incorporating the city of North Muskegon.

Requiring foreign corporations doing business in Michigan to pay a franchise fee.

Establishing a permanent weather service.

Many of the acts were not signed by the Governor until after the adjournment; and it was the opinion of the Attorney-General that those so signed which had passed previously to the last five days of the session were, according to the Constitution, void. If sustained, this would have overthrown many laws which had been signed under similar circumstances by other governors and had been accepted as valid. The question came before the Supreme Court in a case brought by the city of Detroit to compel action under one of the doubtful laws. The court decided that the laws were valid.

**Political.**—A State election was held April 1, to choose a justice of the Supreme Court and 2 regents of the university. The candidates for the office of justice were Joseph B. Moore, Republican; John W. McGrath, Democrat; Robbins B. Taylor, Populist; and Myron H. Walker, Prohibitionist. The vote stood: Moore, 189,294; McGrath, 108,807; Taylor, 25,943; Walker, 18,116. The Republican candidates for the office of regents of the university—Roger W. Butterfield and Charles H. Hackley—received, respectively, 187,672 and 186,693 votes, and were elected. The other candidates were Charles J. Pailthorp and Stratton D. Brooks, Democrats; George B. Smith and Varnum J. Bowers, Populists; and Noah W. Cheever and Delevan B. Reed, Prohibitionists.

Two proposed constitutional amendments were voted upon. On one, to increase the salaries of State officers, the vote stood: Yes, 50,065; no, 13,903. On the other, relative to the jurisdiction of circuit courts: Yes, 60,567; no, 97,278. These amendments were voted upon in 1893, but it was found (see "Annual Cyclopædia" for 1894, page 486) that the returns had been falsified.

**MINNESOTA**, a Western State, admitted to the Union May 11, 1858; area, 83,365 square miles. The population, according to each decennial census since admission, was 172,023 in 1860; 439,706 in 1870; 780,773 in 1880; and 1,301,826 in 1890. By the State census of 1895 it was 1,573,350. Capital, St. Paul.

**Government.**—The following were the State officers during the year: Governor, Knute Nelson, who resigned after his election to the United States Senate, when the Lieutenant Governor, D. M. Clough, became Acting Governor and Frank A. Day Lieutenant Governor; Secretary of State, Albert Berg; Treasurer, A. T. Koerner; Auditor,

R. C. Dunn; Attorney-General, H. W. Childs; Adjutant General, H. Muehlberg—all Republicans; Superintendent of Education, W. W. Prendergast; Commissioner of Insurance, C. H. Smith; Railroad and Warehouse Commissioner, George L. Becker; Librarian, C. A. Gilman; Chief Justice of the Supreme Court, Charles M. Start; Associate Justices, William Mitchell, Daniel Buck, Thomas Canty, L. W. Collins. Justices Start and Collins are Republicans, the other 3 are Democrats.

**State Census.**—The census this year was limited to an enumeration of the inhabitants on June 1, 1895, classified as to sex, age, color, nativity, occupation, nationality of parents, length of time in which persons over twenty-one years of age have resided in the State and have been employed at their regular occupations during the year ending June 1, 1895; and also an enumeration of the soldiers and sailors of the civil war. The result shows that the State has gained 271,524 inhabitants in five years. The greatest percentage of gain is shown by those counties in the pine forests of the northern part of the State and in the Sixth Congressional District generally, comprising 20 counties in the northeastern part of the State, that district showing a gain of 44 per cent. The agricultural section, embracing the western half of the State and comprising the Second and Seventh Districts, shows a gain of 25 per cent. Following are the results by counties:

Aitkin.....	5,224	Meeker.....	17,389
Anoka.....	11,181	Mille Laacs.....	5,129
Becker.....	11,052	Morrison.....	19,163
Beltrami.....	1,364	Mower.....	21,546
Benton.....	7,793	Murray.....	9,322
Big Stone.....	7,580	Nicollet.....	14,299
Blue Earth.....	32,303	Nobles.....	11,905
Brown.....	18,431	Norman.....	13,470
Carlton.....	7,453	Olmsted.....	21,316
Carver.....	17,567	Otter Tail.....	40,002
Cass.....	3,425	Pine.....	5,631
Chippewa.....	10,805	Pipestone.....	7,115
Chisago.....	13,118	Polk.....	39,171
Clay.....	15,154	Pope.....	11,627
Cook.....	427	Ramsey.....	147,537
Cottonwood.....	10,157	Redwood.....	13,632
Crow Wing.....	11,561	Renville.....	21,818
Dakota.....	21,345	Rice.....	26,538
Dodge.....	12,753	Rock.....	8,597
Douglas.....	16,942	Roseau.....	3,493
Faribault.....	20,139	St. Louis.....	77,487
Fillmore.....	28,599	Scott.....	16,494
Freeborn.....	21,138	Sherburne.....	6,357
Goodhue.....	32,265	Sibley.....	16,436
Grant.....	7,957	Stearns.....	41,612
Hennepin.....	217,798	Steele.....	15,818
Houston.....	15,646	Stevens.....	6,543
Hubbard.....	2,447	Swift.....	11,546
Isanti.....	10,195	Todd.....	17,674
Itasca.....	3,967	Traverse.....	6,064
Jackson.....	12,416	Wabasha.....	15,587
Kanabec.....	2,714	Wadena.....	6,076
Kandiyohi.....	16,402	Waseca.....	14,713
Kittson.....	6,238	Washington.....	27,417
Lac qui Parle.....	12,634	Watsonwan.....	10,262
Lake.....	2,211	Wilkin.....	6,400
Le Sueur.....	20,915	Winona.....	37,134
Lincoln.....	7,196	Wright.....	27,653
Lyon.....	12,425	Yellow Medicine.....	12,551
McLeod.....	19,136		
Marshall.....	12,072		
Martin.....	13,953		
		Total.....	1,573,350

The population of Minneapolis by this census is 192,383, and that of St. Paul 140,292.

**Finances.**—The report of the Treasurer for the year ending July 31, 1895, shows the receipts to have been \$5,426,935.96, which, with the balance on hand at the beginning of the year,

\$2,095,924.95, gives a total of \$7,522,860.91. The disbursements amounted to \$5,478,751.55, leaving a balance of \$2,044,109.36. The permanent school fund, invested in bonds, amounts to \$4,918,588.09, and the permanent university fund to \$577,800. The receipts from railroad companies amounted to \$851,394.25; from stumpage on State lands, \$227,712.19; for mineral leases on State lands, \$137,075.60. The receivers or bondsmen of the banks that had State money on deposit when they failed during the financial panic are gradually paying their indebtedness to the treasury, though there was still outstanding in May about \$125,500.

**Education.**—The school population in 1893-'94 was estimated at 450,000. The number enrolled was 337,861, and the average daily attendance 209,307. The number of teachers was 10,322.

**Railroads.**—The Bureau of Labor has published figures showing the changes in the relative burden of taxation borne by the railroads in Minnesota from 1870 to 1894. By this it appears that the relative percentage of taxation increased from 1870 to 1885, since which time it has been decreasing. This decrease in the relative amount of taxation took place, notwithstanding the fact that the taxes paid per mile of road in operation increased continuously from 1870 to 1893.

The table includes these figures of taxes per mile: 1870, 41.13; 1875, 54.60; 1880, 71.12; 1885, 159.32; 1890, 139.85; and 1894, 138.30.

The Duluth-Mesaba Railroad Company was incorporated in September with a capital stock of \$240,000. The object is to build a railroad from Cloquet to the northern boundary.

An important case affecting freight charges was decided in October. Elias Steenerson, of Polk County, began proceedings in 1894 before the Railroad and Warehouse Commission, alleging that the freight charges of the Great Northern on grain from East Grand Forks, Fisher, and Crookston, respectively, to Minneapolis and Duluth were excessive and unreasonable. The commission heard the case and fixed the rate. The commission's rate applied to the entire State, and was: For 5 miles and under, 4 cents per 100 pounds; over 5 miles and not exceeding 10 miles, 4.25 cents; over 10 miles and not exceeding 15 miles, 4.5 cents; and so on up to 400 miles. The railroad company appealed to the district court.

The court found that the rates fixed by the commission were too low to afford a reasonable income on the present value of the railroad property, so far as that was involved, but did not fix or suggest any rate that should be charged.

**Products.**—The total yield of wheat in the State was estimated at 63,000,000 bushels. It appears that more than two thirds of the flax crop of the United States is produced in the region tributary to St. Paul, Minneapolis, and Duluth, and that the oil-meal product is a far more valuable food than corn for production of the highest grades of beef, pork, mutton, milk, butter, poultry, and eggs. Another point that is receiving attention is the utilization of flax fiber for manufacturing tow, twine cordage, bagging, paper, and even linen.

**Immigration.**—A Northwestern Immigration Convention was held in St. Paul in November. A resolution was adopted to the effect that there be organized a permanent Northwestern immigration board, to be composed of representative men of all the Northwestern States, whose purpose it shall be to awaken interest in immigration. The State association organized with Theodore L. Schurmeier as president.

**West Superior.**—The mayor of West Superior, Charles S. Starkweather, was impeached, and at the end of a trial that lasted a month was removed from office by a vote of 17 to 1 in the Board of Aldermen. The charges were that gambling houses were permitted to be kept open and saloons to sell on Sundays; that a theater had been allowed to sell liquor without a license; that the mayor received bribes for neglecting to perform his duty; and that money was extorted from appointees on the fire department and police force.

**Public Lands.**—A dispatch from Duluth, July 16, says:

Four new towns were opened for entry at the United States Land Office to-day, and there was the liveliest time that has been seen there for many months. The towns are in the valley of the upper Mississippi. In some of them only fractional parts were opened, and in many cases the entries conflict with Indian allotments. Most of those who made entries were from St. Paul and Minneapolis. The crush was terrific, and some of the men who went through it were well worn out. One fellow almost fainted, and had to be assisted into one of the offices and given water in order to revive him. Another staggered through the door when his turn came, and leaned against the wall a moment to get strength enough to walk to the desk. Even then he was unable to say a word.

The State still has 220,000 acres to come to it from the General Government. There are still 230 unsurveyed townships in the State.

The school fund is to receive from the Government sections 16 and 36 in the agricultural part of the Red Lake reservation.

More pine-timber frauds (see "Annual Cyclopædia" for 1894, page 489) have come to light since the change in the office of the State Auditor. They come under 75 permits, covering 608 sections of pine land, on which it is computed there are 304,000,000 feet of pine timber. This land was sold under the pretense that it was in danger of being destroyed by fire, under that section of the law which permits the Auditor to sell the timber on pine lands "when it is liable to waste, and not otherwise." The examiners sent out by the present Auditor report that the timber embraced in these sections is young, green, growing, thrifty pine in no danger from fire. In suits arising out of these frauds, the decision on one in July settles important points in favor of the State.

**Legislative Session.**—The twenty-ninth session of the Legislature began Jan. 8 and ended late in April. S. R. Van Sant was chosen Speaker of the House.

The election of a United States Senator to succeed W. D. Washburn was effected after a long contest among the supporters of 4 Republican candidates—Mr. Washburn, Gov. Nelson, and Messrs. Comstock and McCleary. The candidate of the Democrats was Judge Mitchell, and of the Populists Ignatius Donnelly. Knute Nel-



son was elected Jan. 30, receiving 102 of the 168 ballots cast.

The insurance and banking laws were revised and codified. Important changes were made in the methods to be used by insurance companies. The coinsurance clause is prohibited, and a valued policy—that is, the payment of the face of the policy on a building in case of total loss—is provided for. A clause in the law provides for the incorporation of boards of underwriters and the organization of salvage corps.

The new banking law adds stringent safeguards to those of previous statutes in the management of State banks, for the protection of depositors and for the enforcement of strict business methods.

The laws regulating the sale of liquor were amended. The law forbidding sale to minor children has been evaded under judicial decisions holding that such children might be sent to buy liquor for their parents or other older persons. The new enactment forbids the sale to minors either for their own use or for that of others, or to a pupil of any institution of learning. Another amendment is intended to reach the commonly attempted evasion of opening a pretended wholesale house and selling liquor by the quantity, to be left in possession of the merchant, the purchaser removing it a drink at a time. The granting of a license to sell liquor outside an incorporated city, village, or borough within 300 feet of a schoolhouse is prohibited.

A large number of laws was made for the benefit of farmers, and \$50,000 was appropriated to aid in the execution of a stringent measure for the eradication of the Russian thistle. Two additional experimental farms were provided for, and for their maintenance \$12,000 was appropriated. In the same interest was the appropriation of \$25,000 for a hard-fiber twine plant at the prison at Stillwater. To maintain an entomological department at the State University and enable it to propagate the destructive parasites of the chinch bug \$6,000 was appropriated, and to reseed the meadows destroyed by fire in our northern woods \$15,000. The most important of the local measures in aid of agriculture was the appropriation of \$50,000 to continue the work of drainage of the wet lands of the Red river valley. Some measures looking to road improvement became laws.

The unsold lands of the defunct Hastings and Dakota Railroad corporation, amounting to 55,000 acres, were declared forfeited—an act which will be of benefit to the farmers along the western part of the line. A bill was passed offering a bounty of 1 cent a pound on sugar made from sorghum or beet roots. The amount of wheat exempt from taxation was raised from 50 to 100 bushels.

The most important law in the interest of labor is that which does away with contract labor in the prisons, and provides that the number of prisoners engaged in any productive occupation shall not exceed 10 per cent. of the free labor so employed. Children under fourteen years of age are not to be employed in any factory, workshop, or mine. Nor shall any such child be employed outside of the family where he resides before six o'clock in the morning nor after seven o'clock in the evening. If under the compulsory school age

he can not be employed anywhere during school hours.

For cities, a general municipal law was enacted framed on the general principle of concentration of power and responsibility.

It was enacted that either party in an action that may be tried by a jury may have a special jury at his pleasure, the party demanding the jury to be charged with the expense.

The laws for preserving game and fish were made more stringent.

Some changes in the election laws were made in order more effectually to prevent corrupt practices.

The State tax was reduced by 2 mills—from .017 to .015.

Abraham Lincoln's birthday was made a legal holiday.

A fine of \$50, or imprisonment for not more than thirty days, was made the penalty for selling cigarettes, cigars, or tobacco to pupils of the public schools or of any school supported wholly or in part by taxation.

Among constitutional amendments proposed and to be submitted is one giving every city in the State the right to frame its own charter. It provides for the appointment of 15 men by the district judges, who shall frame a charter to be submitted to the people of the city.

Another provides for taxation of unused railroad lands.

A third makes a radical change in the qualifications for voting by foreign-born residents. It requires the voter to be a naturalized citizen and a resident of the State for five years.

**MISSISSIPPI**, a Southern State, admitted to the Union Dec. 10, 1817; area, 46,810 square miles. The population, according to each decennial census since admission, was 75,448 in 1820; 136,621 in 1830; 375,651 in 1840; 606,526 in 1850; 791,305 in 1860; 827,922 in 1870; 1,131,597 in 1880; and 1,289,600 in 1890. Capital, Jackson.

**Government.**—The following were the State officers during the year: Governor, John M. Stone; Lieutenant Governor, M. M. Evans; Secretary of State, George M. Govan; Treasurer, J. J. Evans; Auditor, W. W. Stone; Attorney-General, Frank Johnston; Superintendent of Education, J. R. Preston; Adjutant General, William Henry; Land Commissioner, Edgar S. Wilson—all Democrats; Railroad Commissioners, J. F. Sessions, Walter McLaurin, and J. H. Askew; Librarian, Helen D. Bell; Chief Justice of the Supreme Court, Timothy E. Cooper; Associates, Thomas H. Woods, A. H. Whitfield.

**Finances.**—The receipts from all sources for the year ending Sept. 10, 1894, amounted to \$1,210,651.72, and the disbursements were \$1,299,605.52, being \$88,953.80 in excess of receipts. The receipts for the year ending Sept. 30, 1895, were \$1,277,142.69, and disbursements were \$1,369,954.19, or \$92,811.50 in excess of receipts. The excess of disbursements over receipts for the biennial term ending Sept. 30, 1895, is therefore \$181,765.30. The total indebtedness of the State is \$3,241,354.55. Of this amount \$817,646.46 stands charged against the treasury on account of the common-school fund, which is not now a debt against the State. The Chickasaw School fund and the Seminary fund,

amounting to \$1,394,707.96, is held in trust, and the interest only is payable. There are \$500,000 6-per-cent. bonds, due in 1907, and \$103,000 4-per-cent. bonds with twenty years to run. The Swamp Land fund is borne as a debit to the State, amounting to \$160,960.

The last Legislature, at its special session in 1894, authorized the issuance of special warrants by the Auditor of Public Accounts in lieu of cash warrants upon the treasury to an amount not exceeding \$200,000 outstanding at any one time, the warrants to bear interest at the rate of 3 per cent. per annum. These warrants were made receivable for all dues to the State, but without interest when so paid in. The necessity anticipated for the use of these warrants arose in June, 1894, and again in June, 1895, recourse was had to the special warrant act, and the limit was again reached.

The issuing of these special warrants was held by the Treasury Department of the United States Government to be a violation of the Federal laws that prohibit the issuance of such obligations in similitude of the obligations of the United States, and the secret service division of that department caused the arrest of the Governor, Auditor, and Treasurer for an alleged violation of the Federal statute that denounces counterfeiting, and imposes a penalty of twenty years' imprisonment for such violation. But the grand jury failed to indict.

**Education.**—A summary of the biennial report of the State Superintendent makes the following showing: Educable children (enumeration of 1894), 542,531; enrolled in public schools, 350,615; average daily attendance, 202,683; total value of school property, \$1,636,055; amount expended for public schools, \$1,276,501.

Of the total enrolled, 209,126 are white and 274,614 are colored. Total white teachers, 4,591; total colored, 3,264.

The enrollment at the State University for the fall term was about 250, the largest number since the abolition of the preparatory department, twelve years ago. The institution has a regular income of about \$32,000 from the Seminary fund. By an act of Congress approved June 20, 1894, a township of land was given to Mississippi for the use of the university. Subsequently the lands that had been reserved for naval purposes, chiefly in Jackson and Harrison Counties, were restored to the public domain, and were selected, or enough of them, to make up the township to which the university was entitled. The lands will be sold or leased and the proceeds held in trust by the State for the university.

The Agricultural and Mechanical College, at Starkville, had 256 students for the session ending in June, 1894, and 336 for that ending in June, 1895. A class of 18 was graduated.

At the Industrial Institute and College for girls 330 pupils were enrolled Dec. 1, 1895. A new building is in process of erection, which will accommodate about 100 additional pupils.

The enrollment at the Alcorn Agricultural and Mechanical College for colored boys was 223 at the close of 1895. Of this number, 36 were learning printing, 47 farming, 54 carpentry, 40 blacksmithing, 46 shoemaking, and 3 dairying.

The agricultural colleges, like the State University, receive a township, or 23,040 acres each.

The State Normal School, at Holly Springs, had an enrollment of 202 for the spring term of 1895, and 167 for the fall term. This is for colored students, and has been supported on a yearly appropriation of \$2,000.

Millsaps College, near Jackson, is the joint property of the Mississippi and North Mississippi Conferences of the Methodist Episcopal Church, South. In February 210 students were in attendance. Five departments have been organized. The college has an endowment of about \$107,000.

Bellhaven College for girls, at Jackson, was burned in February. It is to be rebuilt. A few days earlier the Mary Holmes Seminary for colored girls, 2 miles northwest of Jackson, was destroyed by fire. It was built by the colored people of the capital.

**Charities.**—The State Lunatic Asylum had 632 patients at the beginning of 1894, and 751 at the end; average number, 707. In 1895 new inmates to the number of 258 were received, and 155 discharged; average, 774. There were 142 deaths during the two years. The appropriations for the support of the asylum for the two years amounted to \$190,000.

At the East Mississippi Insane Asylum during the year closing Sept. 30, 1894, there were 303 patients, 42 were discharged, 19 died, and 242 remained. In the year ending Sept. 30, 1895, 304 were treated, 41 discharged, 20 died, and 243 remained. Arrangements have been made to accommodate 300 patients.

During 1894 the patients treated at the State Charity Hospital at Vicksburg numbered 4,524, and in 1895 to Dec. 1, 5,762. The Institute for the Blind has about 40 pupils.

The report of the Deaf and Dumb Institution at Jackson gives these details: Total enrollment for the session of 1894-'95—white males, 31; white females, 43; colored males, 14; colored females, 13; total both races, 101.

**Penitentiary.**—The value of the farm products for 1895 amounted to about \$155,000, while the expenses, aside from the cost of farming implements and animals, reached \$95,000. The number of convicts is more than 1,000.

**Banks.**—The Auditor's report of 63 State banks doing business Nov. 3, 1894, shows the aggregate of resources and liabilities to be \$10,284,318.77, and of capital paid in \$3,278,775. In March reports from 72 banks were summarized, showing a total capital of \$4,133,725, and deposits amounting to \$8,441,259.15.

**Railroads.**—Work was begun this year on the Gulf and Ship Island Railroad; the contract requires that it shall be finished to Hattiesburg by August, 1896. The line under construction is 72 miles long. It will open up a large tract of pine land.

Surveys are made for the Mobile, Jackson, and Kansas City road, which will be built as soon as \$250,000 can be raised by subscription in the towns to be benefited.

**Water Ways.**—A water ways convention was called to meet at Vicksburg, Oct. 22-23, with the object of arousing interest and calling the attention of Congress to the necessity of continuing the work of protecting the lands in the lower



Mississippi valley and improving the navigation of the river. All the funds so far allotted will have been expended by the end of June, 1896.

**Cotton.**—The cotton crop of the State in 1894-'95 was given as 1,200,000 bales. A Cotton-growers' Convention was held at Jackson in January, at which it was agreed that measures should be taken to reduce the cotton acreage by 25 per cent., each member being bound by the articles of association not to cultivate more than three quarters the number of acres of cotton that he planted and cultivated in 1894, the agreement to be binding when signed by owners of three fourths of the cotton acreage in 80 per cent. of the cotton-growing counties.

**State Pensions.**—In 1888 \$21,000 was appropriated and expended on Confederate veterans and their widows. In 1894 it was found that \$67,000 was needed to pay the demands on the State. In 1888 the pensioners were an even thousand. In 1894 they had increased to 2,500. In 1895 there were 1,038 applications, of which 60 had been rejected at the close of the year. Forty of the old pensioners had died. At the most, the fund would not afford a *pro rata* of much more than \$20.

**Levee Board Accounts.**—A question of the indebtedness of the Auditor to the Levee Board, growing out of the defalcation of its treasurer, was considered by the board at its July meeting. The finding was that of the \$12,777 which had appeared to be due from the Auditor. \$8,225.27 had been paid, most of it to the former treasurer of the board, and this was ordered refunded, the balance to be held and to be subject to credit for such payments as he should be able to establish.

**Local Option.**—The progress of prohibition through the operation of local option is summarized as follows: "There are 75 counties in the State, and until the last very few years saloons were in full blast in most of them, but one county after another has arrayed itself on the side of the cold-water advocates, until in 1894 only 14 remained friendly to whisky. The total amount paid into the State treasury by these saloons in 1894 was \$107,600. In 1895 several of the 14 counties voted for prohibition. The State license in even the smallest town or village is \$600, and the municipality has the right to double or quadruple that sum at pleasure."

**Political.**—The Democrats were somewhat divided on the silver question, the Administration adherents being in possession of the State offices, and a large and powerful faction in favor of free silver. There was a movement for a "State primary"—a general vote to select candidates for States offices—and a large number announced their candidacy for the various places on the ticket. The proposition met with general favor, the mass of the people being wrought up on the silver question, which, the Administration Democrats maintained, should not be brought into State politics at all, as it is one for national settlement. As the next Legislature was to have the choice of a United States Senator, however, and the Representatives were expected to obey the will of the people as expressed in the election, the silver question became the great issue in the canvass. A letter from Gov. Stone to the President, apparently charging Federal

officials in the State with taking the side of free silver, and the President's answer, which was widely published, played a prominent part in the campaign. Some newspapers, which had been for free silver or not actively against it, came out for the single gold standard after the publication of the letter, and "sound-money leagues" were formed throughout the State and public debates were held.

The county conventions declared in favor of free silver. The State convention, which met at Jackson Aug. 7, was very large and was overwhelmingly for silver. More than 1,200 delegates had been appointed, though only 266 were entitled to seats. Senator J. Z. George was made permanent chairman, and the following candidates were nominated: For Governor, Anselm J. McLaurin; Lieutenant Governor, J. H. Jones; Secretary of State, J. L. Power; Auditor, W. D. Holder; Treasurer, Albert Q. May; Attorney-General, Wiley N. Nash; Superintendent of Education, A. A. Kincannon; Revenue Agent, Wirt Adams; Land Commissioner, J. M. Simon-ton; Clerk of the Supreme Court, E. W. Brown; Railroad Commissioners, J. D. McInnis, M. M. Evans, and J. J. Evans.

The resolutions reaffirmed the platform of the Missouri convention, held the preceding day, which was unequivocally in favor of the free coinage of silver and opposed to the issue of interest-bearing bonds. On State matters, the resolutions declared:

We firmly believe that the Democratic party of Mississippi and of the Union affords the only security for the maintenance of white supremacy in the State, and that all political movements which tend to divide or weaken our party are in direct conflict with the true interests of the State and dangerous to the welfare and happiness of both races. We therefore deplore the movement now afoot for the organization of a third party, to be known as the People's party, and we conjure all good men and true patriots to stand by the Democratic party.

Further, they commended the tariff law in force as the best one since 1846, demanded national legislation to suppress dealings in futures, and such a change in the organic law of the nation as to allow of an income tax. A resolution was adopted commending the course of Gov. Stone in the matter of the issuance of State warrants.

The People's party held its State convention at Jackson July 31. J. A. Bailey was permanent chairman, and a ticket was named as follows: For Governor, Frank Burkitt; Lieutenant Governor, S. W. Robinson; Secretary of State, R. R. Buntin; Auditor, R. T. Love; Treasurer, C. W. Bolton; Attorney-General, J. J. Dennis; Superintendent of Education, A. Trotter; Revenue Agent, R. E. Mitchell; Land Commissioner, N. C. West; Clerk of the Supreme Court, L. R. Collins; Railroad Commissioners, G. W. Dyer, N. M. Hollingsworth, and T. N. Jackson.

The platform declared in favor of "the free and unlimited coinage of both gold and silver at the ratio of 16 to 1, without the grace of foreign powers and principalities"; for the abolition of national banks and the issue and coinage of all money by the General Government; for an increase of the currency to at least \$50 *per capita* by the coinage of silver and the issue of full

legal-tender notes, and for payment of the public debt in either silver or gold or both; it condemned the issuance of interest-bearing bonds in time of peace, and declared that public expenses should be reduced, especially fees, salaries, and perquisites of officials, that dealing in futures should be prohibited and trusts and monopolies discouraged; and it favored an income tax, a limit to the term of Federal judges, and "an American Government for American citizens." On State matters these resolutions were included:

Believing the ballot box to be the palladium of liberty, we favor the enactment of laws to guarantee fairness and honesty in elections. We arraign the former and present Democratic administrations for squandering 2,700,000 acres of public-school lands, and we favor, first, the abolition of the office of Land Commissioner and, second, the enactment of laws to prohibit the acquisition of land in this State by a nonresident alien and requiring the dispossession of lands now held by such aliens within a given time. We favor a reduction of at least 20 per cent. in the salaries and fees of all public officials.

A legislative committee in 1892, composed of Democrats, ordered by that body to investigate the Auditor's office, reported that it had not had time to make more than a "cursory examination of the office, and that they had not been able to do anything. To make such thorough examinations of the books, vouchers, and warrants as would warrant an exhaustive report would, in your committee's opinion, require several months of diligent work," and the same committee at the session of 1894 "asked leave to say that owing to the limited time and other duties more urgent on the floor of the Legislature, they are not prepared to say they have been able to give that strict examination which alone can make this report accurate." It is inconceivable how a public office could be so conducted as not to show whether or not it was indebted to the Levee Board more than \$12,000, or has to be given until Sept. 1 to prove whether or not it owed the money, keeping up its forfeit in the meantime.

The Hemingway and Ferguson defalcation, together with those of numerous sheriffs and county treasurers, is the logical result of ring rule and life tenure.

Debates between the candidates for the office of Governor and others were held through the State. At the election the entire Democratic ticket was successful. The total vote polled was 64,339, of which the Democrats cast 46,873, and the People's party 17,466.

**MISSOURI**, a Western State, admitted to the Union Aug. 10, 1821; area, 69,415 square miles. The population, according to each decennial census since admission, was 140,455 in 1830; 383,702 in 1840; 682,044 in 1850; 1,182,012 in 1860; 1,721,295 in 1870; 2,168,380 in 1880; and 2,679,184 in 1890. Capital, Jefferson City.

**Government.**—The following were the State officers during the year: Governor, William J. Stone, Democrat; Lieutenant Governor, John B. O'Meara; Secretary of State, Alexander A. Lesueur; Auditor, J. M. Seibert; Treasurer, Lon V. Stephens; Adjutant General, Joseph A. Wickham; Superintendent of Education, John R. Kirk; Attorney-General, R. F. Walker; Commissioner of Labor, Henry Blackmore; Chief Justice of the Supreme Court, Theodore Brace; Associate Justices, Thomas A. Sherwood, Shepard Barelay, James B. Gantt, Gavin D. Burgess, George B. Macfarlane, Walter M. Robinson.

**Finances.**—The Auditor's report for the year ending Dec. 31, 1895, showed: Balance on Jan.

1, 1895, \$719,725.43; receipts from all sources, \$3,805,977.49; disbursements for all purposes, \$4,191,666.77; balance, Dec. 31, 1895, \$334,014.15. Of the \$2,746,478.50 appropriated from the revenue fund for the general expenses of the State in 1895-'96, \$1,687,279.60 was drawn in 1895, leaving \$1,061,198.93 to be paid out in 1896. The principal items of appropriations were: Pay of General Assembly, \$121,744, and contingent expenses of the same, \$92,310.52; civil officers, \$232,884.65; costs of criminal cases, \$466,351.50; assessing and collecting revenue, \$171,746.60; and payments on debt, \$527,000. The bonded debt on Jan. 1, 1895, aggregated \$6,016,000, and on Dec. 31, \$5,489,000, comprising \$5,086,000 in 3½-per-cent. bonds, redeemable at the pleasure of the State at any time before 1907, and of \$403,000 in 6-per-cent. bonds. Of the last class of bonds, \$55,000 was payable on Jan. 1, 1896, and \$337,000 on July 1 following, leaving only \$11,000 to be paid in 1897.

**Valuations.**—The State Board of Equalization fixed the values of real and personal property for taxation in 1895 as follow: Acreage property, returned by assessors, \$337,676,032; net decrease by the board, \$30,952,498; value as fixed by the board, \$306,923,534; town lots, returned by assessors, \$410,693,363; net decrease, \$3,493,697; value as fixed, \$407,199,666; and personal property, returned by assessors, \$218,048,473; net decrease, \$1,513,448; value as fixed, \$216,535,025. The items summarized show: Aggregate returned by assessors, \$966,617,868; net decrease by the board, \$35,959,543; and aggregate as fixed by the board, \$930,658,225. The board reported fully on the results of the assessors' convention of 1894, called by the Governor at the request of the board to remedy the inequalities in the assessment of property. The convention adopted resolutions recommending the assessment of property at its true value. The expectations of the board were not realized, as efforts to assess according to the statute were made in 15 counties only, thus creating greater discrepancies than before. The board was therefore compelled to equalize the aggregate returns by reducing those in the 15 counties and increasing those in others where the valuations were manifestly too low.

**Banks.**—The State banks, on April 3, 1895, numbered 482, and had a combined capital of \$20,070,040; loans and discounts, \$60,913,434; total resources, \$102,867,688; deposits, \$68,312,358; surplus, \$8,722,890. The loan-and-trust companies numbered 7, and had aggregate capital of \$6,150,000; loans and discounts, \$4,164,011; total resources, \$16,367,807; deposits, \$6,687,974; and surplus and undivided profits, \$1,413,766. There were also 94 private banks with reported capital of \$1,191,860; resources, \$8,258,390; deposits, \$6,053,389; loans and discounts, \$4,591,729; and surplus, \$418,056. The State had an aggregate banking capital of \$46,526,900, and the banks had deposits of \$127,935,200, loans and discounts of \$122,043,328, and surplus of \$13,689,797.

**Education.**—The annual statement of the United States Commissioner of Education, Sept. 1, 1895, reported an enrollment of 657,505 pupils in the public schools, an average daily attendance of 469,846 pupils, and an expenditure for



public education, exclusive of payments on debts, of \$5,816,634. There were 5,567 male teachers and 8,954 female teachers—total, 14,521. For superior education there were 30 universities and colleges of liberal arts, with 528 professors and instructors; 7,219 students (4,968 males and 2,251 females); and 147,551 volumes in the libraries. The value of grounds and buildings was \$4,203,200, of scientific apparatus and libraries, \$201,050. The institutions had productive funds aggregating \$2,955,958, and a total income in 1893-'94 of \$542,472.

**Taxable Manufactures.**—In the fiscal year ending June 30, 1895, the collections of internal revenue in the two districts into which the State is divided aggregated \$7,830,900.70. There were 878 cigar factories, which in the calendar year 1894 used 1,196,040 pounds of tobacco in the manufacture of cigars and 3,880 pounds in that of cigarettes, and had an output of 65,420,772 cigars and 1,194,800 cigarettes; and 92 other factories, which used 45,253,659 pounds of leaf tobacco, 2,236,759 pounds of scraps, and 1,587,739 pounds of stems, 11,967,951 pounds of licorice, 6,999,406 pounds of sugar, and 2,605,570 pounds of other materials, and had an output of 51,948,338 pounds of plug tobacco, 85,057 pounds of fine cut, 5,569,077 pounds of smoking tobacco, and 26,012 pounds of snuff. The revenue stamps required for the sale of the different kinds of manufactured tobacco cost \$3,461,653.14. During the year 53 out of 76 grain distilleries and 16 out of 18 fruit distilleries were in operation. The production of fruit brandy was 5,606 gallons from apples and 192 gallons from grapes, and of fermented liquors, 2,132,743 barrels. The amount of spirits rectified was 2,760,364.16 gallons, and amount of distilled spirits gauged, 8,598,080 gallons. Oleomargarine was manufactured to the amount of 1,013,544 pounds.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of the calendar year 1895: Corn, 6,613,118 acres, 238,072,248 bushels, value \$47,614,450; wheat, 1,541,664 acres, 18,499,968 bushels, value \$9,434,984; oats, 1,102,805 acres, 30,547,699 bushels, value \$5,498,586; rye, 20,183 acres, 246,233 bushels, value \$96,031; potatoes, 98,764 acres, 10,765,276 bushels, value \$2,691,319; and hay, 2,329,731 acres, 2,725,785 tons, value \$18,535,338; total value, \$83,870,708. The department's estimate of the average farm price of the principal products, on Dec. 1, 1895, was as follows: Corn, 20 cents per bushel; wheat, 51; rye, 39; oats, 18; barley, 48; buckwheat, 58; Irish potatoes, 25; sweet potatoes, 42; hay, \$6.80 per ton; cotton, 7.4 cents per pound; and leaf tobacco, 8.7 cents per pound.

**Live Stock.**—In January, 1895, the United States Department of Agriculture estimated the number and value of farm animals in the State as follows: Horses, 998,277, value \$27,031,442; mules, 249,123, value \$8,096,916; milch cows, 753,447, value \$14,014,114; oxen and other cattle, 1,794,670, value \$28,036,872; sheep, 860,820, value \$1,401,587; and swine, 3,561,136, value \$16,050,041; total value, \$94,630,972.

**Mineral Productions.**—The eleventh report of the United States Geological Survey on "Mineral Resources of the United States," which was issued at the close of 1895, covers the calendar

year 1894, and shows a considerable decrease in amounts and values of many of these products in Missouri, largely caused by the business depression and local labor troubles of that year. The most important of these industries is coal mining, which had a product of 2,245,039 short tons, valued at \$2,634,564, a decrease in quantity of 652,403 short tons and in value of \$928,193 from the output and value of 1893. Of the total product, 1,955,255 tons were loaded at the mines for shipment, 242,501 tons were sold to local trade and used by employees, and 47,283 tons were used at the mines for steam and heat. The average number of men employed was 7,523, and the average price per ton at the mine was \$1.17, a decrease of 6 cents from 1893. There were 3 coking establishments in the State, operated exclusively for the zinc-smelting works, which had 10 ovens, used 3,442 short tons of coal, and produced 2,250 tons of coke, valued at \$3,563. The quarry products were granite, \$98,757, a decrease from \$388,803 in 1893, principally taken from Iron, Wayne, St. François, and Madison Counties; sandstone, \$131,687, an increase from \$75,701 in 1893; and limestone, \$578,802, a decrease from \$861,563 in 1893 and \$1,859,960 in 1890. Of manufactures of clay products, reports from 242 establishments showed an output of 258,922,000 common and pressed brick, valued at \$1,541,553; ornamental brick to the value of \$47,933; fire brick, \$202,722; vitrified and paving brick, \$190,220; drain tile, \$172,220; sewer pipe, \$150,000; tile other than drain, \$24,679; and miscellaneous articles, \$286,026; total value, \$2,615,578. Iron mines yielded 64,601 long tons of red hematite and 17,325 of brown—total, 81,926; and the production of pig iron declined from 32,360 long tons in 1893 to 6,522 tons. Of other there was a product of 1,800 short tons; value, \$23,160.

**Commerce.**—During the fiscal year ending June 30, 1895, the receipts of imported merchandise at the interior ports of delivery of Kansas City, St. Joseph, and St. Louis aggregated in value \$3,358,148, an increase of \$1,091,187 over the total of the previous year.

**Defense of the Ballot.**—In April the Supreme Court of the State rendered an important decision in connection with the new ballot law. At the elections in November, 1894, gross frauds were alleged to have been committed in Kansas City and in Jackson County, and the grand jury called on the recorder of voters to produce the ballot boxes for inspection. The recorder demurred, and the case went to the Supreme Court, which denied the right of the criminal court to compel the recorder to produce the ballot boxes, and held that to give the grand jury the right to inspect the ballot boxes would be a violation of the secrecy of the ballot, as well as an infringement of the Constitution. In summing up, the court said: "The considerations which induced the States of this Union to adopt the secret ballot not only continue to exist, but others have been added. The timid voter to-day it not only protected from his opulent employer, but from the aggressive spirit of his own fellows and the dominations of brotherhoods and unions."

**Missouri at Chickamunga.**—The State will be represented on this historic battlefield by 4

monuments, 2 commemorating the Bledsoe and Barrett batteries of the Confederate Army, and 2 in honor of the Second and Fifteenth Regiments of Missouri Infantry that served in Laibold's Brigade of the National Army.

**Immigration.**—During 1895 a large number of wagon trains of settlers passed through Ozark, going southward. Douglas and Taney Counties have attracted most of the immigrants, and the Government lands in the White river country have become popular with people of limited means from the more crowded States. Among the new settlers are many experienced farmers, anxious to escape the cold winters of Nebraska, Iowa, Minnesota, and the Dakotas.

**Political.**—The Free-silver Democratic members of the Legislature held conferences in Jefferson City, May 1 and 2, and adopted resolutions declaring that the vital question before the country was the money question, and that the Democratic party from its organization had always been a party of bimetallism, claiming that the redemption money of the country and the basis of all currency and paper credits should be both gold and silver, and that these metals should be coined at the ratio of 16 to 1. The resolutions also asked the Democratic State Committee to call a convention for the purpose of enabling the Democratic party of Missouri to declare its views on the subject. A convention was held at Pertle Springs, Aug. 6, and Congressman R. P. Bland was chosen chairman. The convention decided to reorganize the State Democratic Central Committee by adding 19 new members, 1 from each congressional district and 4 from the State at large, and authorized calls for a State convention to elect delegates to the National Convention not later than April 15, 1896, and for another to nominate candidates for State offices, to be held after the National Convention. A platform was adopted which contained the following resolutions:

That we, the Democratic party of Missouri, in convention assembled, demand the free and unlimited coinage of silver and gold into primary or redemption money at the ratio of 16 to 1, without waiting for the action or approval of any other nation; and

That we are irrevocably opposed to the substitution for metallic money of a panic-breeding corporation credit currency based on a single metal, the supply of which is so limited that it can be cornered at any time by a few banking institutions in Europe and America.

That we are opposed to the policy and practice of surrendering to the holders of the obligations of the United States the option, reserved by the law of the Government, of redeeming such obligations in either silver coin or gold coin.

That we are opposed to the issuing of interest-bearing bonds of the United States in time of peace, and especially are we opposed to placing the Treasury of the Government under the control of any syndicate of bankers, and the issuance of bonds to be sold by them at an enormous profit, for the purpose of supplying the Federal Treasury with gold to maintain the policy of gold monometallism.

**MONTANA**, a Western State, admitted to the Union Nov. 8, 1889; area, 146,080 square miles; population, according to the census of 1890, 132,159. Capital, Helena.

**Government.**—The following were the State officers during the year: Governor, John E. Rickards; Lieutenant Governor, Alexander C.

Botkin; Secretary of State, Louis Rotwitt; Treasurer, Frederick W. Wright; Auditor, Andrew B. Cook; Attorney-General, Henri J. Haskell; Superintendent of Public Instruction, Eugene A. Steere; Adjutant General, C. F. Lloyd—all Republicans; Game and Fish Warden, C. S. Taylor; State Examiner, D. D. Bogart; Register of the Land Office, S. A. Swiggett; Chief Justice of the Supreme Court, William Y. Pemberton, Populist-Democrat; Associate Justices, W. H. De Witt and W. H. Hunt, Republicans.

**Finances.**—The assessed valuation of all the counties is \$124,076,585.50, and the total indebtedness is \$2,798,030.82. The tax levy in the counties varies from 14½ mills in Lewis and Clarke County to 27½ in Custer. The railroads are assessed at \$10,522,354, which is included in the above total. In 1894 they were assessed at \$10,062,457. The live-stock assessments were increased in all the counties by the State board. In providing for the bounties to be paid for wolves, coyotes, or other stock-destroying animals, the legislative act named two sources of supply for the fund—one the State and county licenses, of which 5 per cent. is devoted to the purpose, and the other a tax of 1½ mill on the assessed value of live stock throughout the State. It is estimated that the percentage of licenses will amount to about \$20,000, and \$30,000 more will be raised by the tax. The assessed value of horses in the State is \$3,391,571; of cattle, \$11,446,888; of sheep, \$4,135,987.

The balances on hand in the following funds, Nov. 3, 1895, were: Escheated estates, \$5,773.20; permanent school fund, \$156,498.04; school income fund, \$47,972.47; University fund, \$9,850.10; Normal School bond fund, \$2,321.90; State Capitol building fund, \$4,745.22; Reform school building fund, \$1,546.58; Agricultural College bond fund, \$176.97; general fund, \$32,415.95; stock inspection and detective fund, \$353.55; stock indemnity fund, \$2,481.94; sheep inspection and indemnity fund, \$5,676.41; State bounty fund, \$2.53; beautifying State Capitol grounds, \$3,220; total, \$273,034.86.

**Education.**—Under the new law the State school fund was established, and \$51,044.50 received from the sale and lease of school lands was in the treasury at the end of the year, to be divided among the counties at \$1.30 *per capita*. The number of children between the ages of six and twenty-one is 39,265.

The State University, at Missoula, was opened for the first time in September, with Oscar J. Craig as president. Missoula gives the use of a new school building for the university until the State shall have erected one.

The Agricultural College, at Bozeman, had an enrollment of 120 the first term of the year. It has a farm of 160 acres, and a building site of 20 acres. Contracts have been let for buildings. A building has been finished for the experiment station, and several farm buildings. Temporary accommodations are provided for the classes.

Contracts have also been let for building the State Normal School at Dillon.

**State Institutions.**—The report of the State Prison, at Deer Lodge, for the year ending Nov. 30, 1895, shows a total of 321 convicts, 2 of whom are sentenced for forty years, and 18 for life. The current expense for the year was



\$46,726.20. The prisoners have built a massive stone wall around the grounds, and assisted in the work on the new building, the cost of which was \$19,427.51 in addition to their labor, which, at the rate of \$1 a day, amounted to \$39,623. The completion of the building, which has taken two years, was celebrated Dec. 5 and 6 by musical and dramatic entertainments, the performers being inmates of the prison. A school was opened in the prison Dec. 12. Both instructors and pupils are convicts.

The legislative committee appointed to inspect the Insane Asylum at Warm Springs commended the management in every particular. The plant is not owned by the State.

The first annual report of the State Orphans' Home, at Twin Bridges, shows that the institution is in good running order. There are 5 employees, including the superintendent, and 21 children. The average cost of each for one week is \$5.29.

The Asylum for Deaf, Dumb, and Blind Children, at Boulder, had only 13 in attendance in February—all that could be accommodated—while there were 40 applications for admission. The Legislature of 1895 made provision for suitable buildings.

The Reform School, near Miles City, had in February 37 inmates, of whom 6 were girls, of ages from eight to twenty. Of the land given to the school by Miles City, 35 acres were put under cultivation in 1894, and 5 left for pasture. The crop raised was worth about \$2,200.

**Railroads.**—A suit of one railway corporation against another, involving the right of the one to condemn lands already condemned by the other, but not in use by them, was decided by the Supreme Court in favor of the new road, the court holding that the land could be recondemned if not in actual use.

The Montana Railroad Company has bought the Montana Midland. The articles of incorporation state that the line of the road is to be extended through Lewis and Clarke, Jefferson, Meagher, and Gallatin Counties. The capital stock is \$3,500,000.

**Banks.**—The following summaries show the resources and liabilities of the 2 savings banks on Oct. 7, 1895: Loans and discounts, \$662,101.82; overdrafts, \$66,059.90; stocks and bonds, \$515,273.80; due from other banks, \$272,640.88; banking houses, furniture, etc., \$80,221.15; other real estate, \$89,525.61; current expenses and taxes, \$4,250.26; cash and cash items, \$331,319.21; total, \$2,021,392.63.

The liabilities are: Capital stock, \$200,000; surplus, \$55,000; undivided profits, \$57,360.12; deposits subject to check, \$528,955.26; individual deposit on interest, \$887,374.90; demand certificates on deposit, \$94,831.07; time certificates of deposit, \$185,609.02; cashiers checks, \$9,919.76; due other banks, \$2,342.50; total, \$2,021,392.63.

**Irrigation.**—Work has been going on during the year on the Tongue river irrigating canal in Custer County; but two or more seasons in addition will be required to finish it. A canal in Park County was completed in July after three years' work. It taps the Yellowstone about a mile above Fridley and is 12 feet wide on the bottom. It winds around on the bench land

and has a length of 13 miles. The canal has a capacity for carrying water sufficient to irrigate about 2,500 acres.

**State Lands.**—The office of State Land Register was created by the last Legislature. This officer has charge of all lands in which the State is interested. The Government gave 72 sections to the Territory in 1881, amounting to 46,080 acres; and in 1889 it gave 622,000 acres for public institutions. Sections of land aggregating 235,510.06 have been selected. When land is sold outright it is sold at its appraised value, provided it brings \$10 an acre. No land is sold for less than that sum. When property is sold the money derived from the sale goes into the permanent school fund, while the interest and rentals go into the general school fund.

**Industries and Products.**—The wool clip of 1894 was 6,527,469 pounds, and the quantity in 1895 was estimated as considerably larger. A State Wool-growers' Association was organized in November. The chief inspector for the Montana Stock-growers' Association, reported the number of Montana cattle received at Chicago this season as 215,534. During the season he forwarded \$135,358.31 to the secretary of the association for estrays.

The dry season was unfavorable not only to the farmers and stock men, but also to those engaged in placer mining. Many rich strikes and valuable finds have been reported from the mining districts during the year. One of these is the finding of valuable ore in a "belt lead" running east and west through Helena, which had been theoretically located by Prof. F. Carr. Lump Gulch is a silver camp which has been largely developed in the past year. A strike of very rich gold ore at Whitehall, in the Pipestone district, was reported in June. A rich gold strike is said to have been made on Deer creek above De Borgia, and the Monitor Gulch district, beyond Rimini, has been attracting attention this season, also the Ontario district west of Helena, while the Marysville district north of Helena, one of the oldest in the State, has been brought into fresh notice, and valuable properties have been opened up. Other localities where rich deposits of gold have been reported are St. Louis, Birch creek, in Meagher County, Belt creek, near Neihart, and the Little Rocky, Beaver creek, Curlew, and Prickly Pear districts.

A rich strike of copper was made at Meaderville in May, a ledge of copper glance 16 feet in width. The copper works at Anaconda have a capacity for turning out 50 tons of refined copper a day.

The discovery of a large deposit of asbestos 12 miles from Dillon was reported early in the year. It was traced 2,500 feet and is over 100 feet wide. A company has been formed to work the gypsum deposits at Kilby.

A new discovery of valuable lead ore, showing an average of nearly \$60 a ton, has been made in Park County.

According to the figures given out from the Government assay office at Helena, the values of metals produced in the State in 1894 are as follows: Gold, fine, \$3,868,428.87; silver, fine, \$17,634,219.78; copper, \$17,233,718.66; lead, \$730,551.82; total, \$39,466,919.13.

The silver is estimated at the coinage value of \$1.29 an ounce.

**Fort Harrison.**—The new military post was established at Helena in September, when 2 companies of infantry arrived from Fort Assiniboine to garrison the fort. The site comprises 1,040 acres, of which 200 acres are hilly and will in time be used for bomb-proof cellars. When all the buildings are up they will form almost a complete circle. Appropriations amounting to \$300,000 have been expended upon them.

**The Cree Indians.**—Several hundreds of these Indians formerly living in British territory, but expatriated in the Riel rebellion, are roaming about the State, perfectly lawless and a terror to the people in the sparsely settled districts. The Legislature adopted a memorial to Congress asking that they might be returned to their own country or settled on some of the reserved land. This was vetoed by the Governor on the ground that the only proper course was to insist upon the removal of these foreign Indians from the State. The veto was sustained.

**Legislative Session.**—The Legislature convened Jan. 7, and adjourned March 7. On joint ballot, the Republicans had 56 members, the Democrats 7, the Populists 15, the Fusion and Populists 3, the Independent Republicans and Populists 1. Representative Swett was Speaker of the House.

Two United States Senators were to be chosen, one for the regular term beginning March 4, 1895, and one to fill a vacancy caused by the failure of the third Legislative Assembly to elect. The Republicans nominated Lee Mantle for the vacancy and Thomas H. Carter for the full term. Before the vote was taken a communication was sent into the House from the A. P. A. headquarters in Butte, protesting against the election of Mr. Carter, who is a Catholic. When the reading had proceeded far enough to show the tenor of the remonstrance its reading was interrupted, and by unanimous vote the House directed that it be returned as unopened. All the Republican members voted for the nominees.

The radical work of the session was the adoption of the new code, which had been prepared by the Code Commission. It was not merely a codification of existing laws of the State, but involved some changes, especially in the code of civil procedure, where the code prepared for New York by David Dudley Field was mainly followed. The House committee to which were referred the 4 codes—viz., the code of civil procedure, the penal code, the civil code, and the political code—reported that they should be adopted at the earliest day possible.

The codes were enrolled and passed as recommended, and amended in various particulars, especially the political code. A bill to prevent corrupt practices at elections and requiring published statements of election expenses by candidates became a law, and one to regulate the holding of caucuses and primary elections. An act relative to the marking of ballots was vetoed and passed over the veto.

The law on the sale of property for delinquent taxes was amended.

Bills were introduced for the creation of 4 new counties, but only 2, Carbon and Sweet Grass, were formed.

A bill was passed authorizing the construction of a Capitol at Helena, to cost \$1,000,000. One previously passed provided for a commission to buy a site. The money is to come from the sale of lands given to Montana by the Government for such purpose.

A law was made forbidding all forms of gambling. Heretofore games of chance have been licensed; the revenue from this source in 1894 was \$34,894.44, of which the State treasury received one fourth. The new law, placing Montana in line with most of the other States in this respect, was to go into operation July 1, and at that time gambling places were closed. But it was claimed that the law was not properly passed, owing to an erroneous title, which made it an amendment to a section in the code which contained no reference to gambling. Test cases were brought before two district judges, who decided that the law was void, and their decision was affirmed by the Supreme Court.

The game laws were amended. Fishing is allowed throughout the year, but can be done only with a pole, hook and line, or a spear. Bison, buffalo, quail and Chinese pheasant, female moose and elk are protected indefinitely. The open season for bull moose and elk is from Sept. 1 to Dec. 15. The open season for deer, mountain sheep, Rocky Mountain goats, and antelope is from Sept. 15 to Jan. 1. During that time no person is allowed to kill more than 8 animals of each kind. Prairie chicken, grouse, fool hen, pheasant, or partridge can be killed between Aug. 15 and Jan. 1, and during the open season no more than 100 birds of each kind may be killed. Ducks, brant, and geese may be hunted between Aug. 15 and May 15. All kinds of singing birds are protected forever. A Board of Fish and Game Commissioners was created.

Later in the year the Attorney-General decided that the law of 1893, which was not repealed or amended, is still in force. That law makes it illegal to kill any elk or moose for six years.

Several bills were introduced providing for the establishment and maintenance of a soldiers' home, each naming a location. They were referred to the Committee on State Institutions, and it reported a substitute which was passed, providing for the location of a soldiers' home, but leaving the selection of a site to a committee of 5 veterans, to be appointed by the Governor, no more than 2 to be from the same Grand Army post. Appropriations of \$10,000 for a building and \$13,000 for support for two years were made. The committee decided upon a site at Columbia Falls, 50 feet above Flathead river, and about half a mile from the Great Northern Railway. Other acts of the session were:

Providing for a State examiner.

Creating a free State employment agency in connection with the Bureau of Agriculture, Labor, and Industry.

Providing for the payment of bounties on certain stoek-destroying animals and to create a bounty fund.

To provide a floral emblem for Montana.

To protect associations and unions of workmen and persons in their labels, trade-marks, and forms of advertising.

Providing for the erection of buildings for the State Normal School.



Regulating the sale of oleomargarine and butterine.  
Prohibiting the sale of cigarettes or tobacco to minors.

Requiring the American flag to be displayed over schoolhouses.

Changing Arbor Day from April to May.

Providing for the incorporation of co-operative associations.

To prevent the alteration and defacements of brands and marks on animals, and to provide compensation for animals whose brands or marks have been altered or defaced.

Changing the conditions under which foreign corporations may do business in the State.

For the suppression of the Scotch bull and the Russian thistle.

Providing for circulating libraries in the State.

Making the age of consent sixteen years.

Providing for the erection of buildings for the School of Mines.

Providing for the organization, government, and control of building, loan, and savings associations.

Appropriating money for the completion of the Eastern State Prison.

To encourage beet culture and the manufacture of sugar.

It was enacted that an amendment to section 2, chapter ix, of the Constitution, relative to the rights of suffrage and qualifications for holding office shall be submitted to the people.

The State Constitution calls for a census of Montana in 1895, but the Legislature failed to pass a bill that was introduced providing for it on account of the expense involved.

**MORAVIANS.** The following is a summary of the statistics of the Moravian Church in the United States, as given in the latest published report for the year ending Dec. 31, 1894:

**Northern American Province.**—Number of congregations, 80; of communicants, 10,593; of noncommunicants, 1,075; of children, 4,658; total membership, 16,329; of members of Sunday schools (teachers and children), 10,040; amount of contributions for church support, \$111,276; of contributions for Church enterprises and other Christian objects, \$23,343. The objects for which these latter contributions are taken include retired ministers, the Bohemian mission, foreign missions, the Alaska mission, home missions, the Theological Seminary, and other Moravian causes and general Christian objects.

**Southern American Province.**—Number of communicants, 2,330; of noncommunicants, 187; of children, 1,031; total membership, 3,548; of members of Sunday schools, 3,514. Total for the United States, 12,923 communicants, 1,262 noncommunicants, 5,689 children, 19,877 members in all and 12,554 members of Sunday schools. The net increase of communicants during the year was 388; of members, 360; and of members of Sunday schools, 846.

The year's contributions for foreign missions in the Northern American Province were \$4,467, in addition to which the Unity's Elders' Conference appropriated \$7,500, making a total fund for the district of \$11,967. The Alaska mission, in which the American provinces have a special interest, includes 9 stations, and returns 12 missionaries, 14 native helpers, 180 communicants, 87 noncommunicants, 134 children, 155 "new people" (who attend the services and are brought under the care of the missionaries), and 29 candidates for admission. The increase of members during the year was 58; 25 adults and 33 children were baptized, 2 adults and 3 children were received, 28 candidates were confirmed, 22 couples were married, and 11 members were excluded and dropped.

The general missionary work of the Church is under the care of the Unity's Elders' Conference, at Berthelsdorf, Saxony, and extends around the world, reaching from Alaska to Australia, and from Greenland to the Cape of Good Hope. It embraces, according to the report for 1894, 21 missions, 130 stations, 24 preaching places, 174 brethren and 174 sisters missionaries, 43 native missionaries, 1,898 native assistants, 32,363 communicant members, 17,505 baptized adults, 37,641 baptized children, 6,136 candidates, etc., 251 day schools, with 566 teachers and assistants and 24,002 pupils, 111 Sunday schools, with 1,244 teachers and assistants and 16,278 pupils, and a total membership of 93,645, or 399 more than in 1893.

A new "Atlas of the Missions," published by the Mission Department of the Unity's Elders' Conference to take the place of the one published twenty-five years before, consists of 16 maps, with descriptive letterpress, and shows the growth of the missions during a quarter of a century. An effort was made during the year to pay off the debt existing against the Foreign Mission fund of \$27,871. In January, 1896, a sufficient amount having been contributed, the debt was canceled.

The annual "Text-book" of the Moravian Church is substantially the same throughout the world, with only such changes as are necessary to adapt it to the different nationalities by which it is to be used. It is translated into 9 languages, and about 100,000 copies are printed in German, 16,000 in French, and 6,000 in English. The American edition includes 2,185 copies in English and 2,121 in German. Editions are also printed, some of them without the hymns, in Bohemian, Dutch, Spanish, Negro-English (for Surinam), and Eskimo. In Europe it is much used by others than Moravians. It is originally prepared by the Unity's Elders' Conference at Berthelsdorf.

## N

### NATIONAL ACADEMY OF SCIENCES.

The officers of the Academy in 1895 were: President, Wolcott Gibbs; Vice-President, Francis A. Walker; Foreign Secretary, Alexander Agassiz; Home Secretary, Asaph Hall; Treasurer, John S. Billings. Two meetings were held in 1895.

The first or stated meeting was held in Washington on April 16-19. On that occasion the following papers were read:

"Notes on the Florida Reef" and "The Progress of the Publications on the Expedition of 1891 of the United States Fish Commission Steamer 'Albatross,'"

Lieut.-Commander Z. L. Tanner, commanding," by Alexander Agassiz; "On Some Variations in the Genus *Eucope*," by Alexander Agassiz and W. McM. Woodworth; "On the Composition of Expired Air, and its Effect upon Animal Life," by John S. Billings; "On a New Determination of the Nutation Constant, and Some Allied Topics," by Seth C. Chandler; "The Extinct Cetacea of North America," by Edward D. Cope; "Systematic Catalogue of Euro-



WOLCOTT GIBBS.

pean Fishes," by Theodore Gill; "On the Application of a Percentage Method in the Study of the Distribution of Oceanic Fishes: A. Definition of Eleven Faunas and Two Subfaunas of Deep-sea Fishes. B. The Relationships and Origin of the Carribeo-Mexican and Mediterranean Subfaunas," by G. Brown Goode; "On the Color Relations of Atoms, Ions, and Molecules," by M. Carey Lea; "A Linkage showing the Laws of the Refraction of Light," by Alfred M. Mayer; "Relation of Jupiter's Orbit to the Mean Plane of Four Hundred and One Minor Planet Orbits" and "Orbit of Miss Mitchell's Comet, 1847 VI," by Hubert A. Newton; "On the Two Isomeric Chlorides of Ortho-sulpho-benzoic Acid" and "On Some Compounds containing Two Halogen Atoms in Combination with Nitrogen," by Ira Remsen.

The following papers were read by gentlemen not members of the Academy:

"On the Secular Motion of a Free Magnetic Needle," by Louis A. Bauer; "Mechanical Interpretation of the Variations of Latitude," by Robert S. Woodward; and "On Soil Bacteria," by M. P. Ravenel; also a "Biographical Memoir of Dr. Lewis M. Rutherford" was presented by Benjamin A. Gould.

One of the conspicuous events of this gathering was the presentation of the Watson medal to Seth C. Chandler, of Cambridge, for his "researches on the variation of latitudes, on variable stars, and for his other works in astronomy."

At this meeting the following new members were elected: William L. Elkin, of the astronomical observatory of Yale University; Charles S. Sargent, of the botanical department of Harvard University; William H. Welch, of Johns Hopkins Medical College; and Charles O. Whitman, of the biological department of the University of Chicago. Also the following foreign members were chosen: Rudolph Leuckart, of Leipzig, a physiologist; Sophus Lie, of Leipzig, a mathematician; and Julius von Sachs, of Würzburg, a botanist. At the business session new officers were chosen, and the changes made were the advancing of Wolcott Gibbs from the place of foreign secretary to that of president, and the election of Alexander Agassiz to the office of foreign secretary.

The members of the council chosen were:

George J. Brush, of New Haven; Benjamin A. Gould, of Cambridge; Simon Newcomb, of Washington; Ira Remsen, of Johns Hopkins; George L. Goodale, of Harvard; and Othniel C. Marsh, of Yale.

In accordance with the requirements of the will of President Barnard, of Columbia College, the Academy selected the name of Lord Rayleigh for presentation to the trustees of Columbia College as that of the scientist most worthy of the Barnard medal, which is awarded every five years to the person who shall have most distinguished himself by a discovery in physical or astronomical science. The deaths of James Edward Oliver and James Dwight Dana were announced, and the preparation of biographical memoirs of the deceased academicians assigned respectively to George W. Hill and Edward S. Dana. The death of John Newton occurred later. Sketches of these members will be found elsewhere in this volume.

The scientific session was held in Philadelphia, Oct. 29-30, when the following papers were read:

"On Borings through the Coral Reef in Florida," by Alexander Agassiz; "The Filar Anemometer" and "The Countertwisted Curl Aneroid," by Carl Barus; "The Olindiadæ" and "New Campanularian Medusæ," by William K. Brooks; "On a New Variable of Peculiar Character," by Seth C. Chandler; "On a Bone Cave at Port Kennedy, Pa.," and "On the Paleozoic Reptilian Order of the Cotylosauria," by Edward D. Cope; "On the Alkali Uranates," by Wolcott Gibbs; "On the Persistence of Fresh-water Types," by Theodore Gill; "On the Asteroids," by Asaph Hall; and "On the Broadening of Spectral Lines by Temperature and Pressure," by Albert A. Michelson.

Dr. Gibbs presided for the first time at this session, and delivered an address in which he described the functions of the Academy. Besides the adoption of certain rules governing the meeting of the Academy two important resolutions were passed. The first, of congratulation to J. Peter Lesley on the successful termination of the second and great geological survey of Pennsylvania, the results of which have been given to the public in over 150 octavo volumes. The second, likewise congratulatory, was to Dr. John S. Billings. It was in appreciation of the completion of his "Catalogue of the Army Medical Library" and the issue of the sixteenth and final volume of that unequalled gift to the physician and medical scholar of the world.

**NATIONAL GUARD.** The aggregate strength of the National Guard of the several States, ascertained from Federal and State reports, together with data supplied direct by State and Territorial authorities, bringing results as nearly as possible up to date is 114,397.

**Independent Force.**—In addition to the aggregate given above there is a considerable independent force scattered throughout the States, yet not attached or responsible directly to the local or Federal military or administrative authorities. No reliable data can be secured to show the aggregate strength of these independent organizations; but in an emergency several thousands would be added to the rolls from this source.

**Total of Each Arm.**—The National Guard proper consists of about 1,500 general and staff officers, and a regimental strength in officers and men of 97,900 infantry, 5,088 cavalry, 5,079 artillery, 1,438 cadets, and 3,392 naval militia.



**Infantry Armament.**—All the infantry in every State except New York, 3 regiments in Connecticut, and a portion of the National Guard in Florida, Virginia, and Wyoming, are armed with the Springfield rifle, caliber '45, of all models from that of 1873 to the latest. The New York infantry carry the Remington, caliber '50; the three Connecticut regiments mentioned use the Peabody, '45, and some of the infantry in Florida, Virginia, and Wyoming use the same rifle as those of New York. The Federal report pronounces the general condition of rifles as fair to good, "but many arms are unserviceable from neglect."

**Cavalry Armament.**—The arms of the cavalry are of the same kind as those used by United States troops, with exceptions in New York, Pennsylvania, Georgia, Oregon, and New Mexico, where non-regulation carbines are carried. In Alabama, Arkansas, California, New Jersey, Ohio, Wisconsin, the District of Columbia, and Utah the cavalry armament includes the saber, carbine, and revolver, and the armament in the several States ranges from that condition of efficiency to the carbine as the only weapon, as in Colorado, North Dakota, and New Mexico. New Hampshire cavalry depend entirely on the saber as a means of defence.

**Artillery Armament.**—The total artillery armament, according to the latest and most reliable reports, comprises 252 ordinary field-pieces (not all serviceable), 102 Gatling guns, and 11 howitzers. The men in this branch generally carry a saber. Some have a revolver in addition, and in a small number of batteries the men are armed with rifles or carbines.

**Camp Equipage.**—The number of tents available for the force of State militia, including square, common, and hospital tents, is 19,614.

**Arrangement by Groups.**—For ready reference in making comparisons of sectional strength and availability, the synopsis of State reports which follows is given by geographical groups, the first being that of the North Atlantic States, including Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

**North Atlantic Division.**—The aggregate force in the North Atlantic division, including the nine States above mentioned, shows an authorized strength of 48,351. The total of infantry actually organized is 33,853; cavalry, 861; artillery, 1,375; cadets, etc., 1,438; naval militia, 1,498. The number of adults liable to serve in this division is reported to be 2,572,205. The artillery armament of the organized militia in the division consists of 96 ordinary field pieces, 32 Gatling guns, and 8 howitzers. The number of tents available, as reported, is 8,655.

**South Atlantic Division.**—The South Atlantic division embraces Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. The authorized strength of the State militia aggregated for this group is 36,373. The actually organized force includes 15,503 infantry, 2,452 cavalry, 409 artillery, and 782 naval militia. The number of adults liable to serve is recorded as 1,083,144. The artillery armament available consists of 30 ordinary field pieces, 6

Gatling guns, and 2 howitzers. The number of tents available is given as 3,007.

**North Central Division.**—The North Central division includes Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. The authorized strength aggregated for these States is 49,277. The actually organized force includes 27,431 infantry, 348 cavalry, 1,305 artillery, and 437 naval militia. The number of adults liable to serve is reported to be 3,772,157. The artillery armament available comprises 57 ordinary field pieces, 29 Gatling guns, and 1 howitzer. The number of tents available is stated to be 4,868.

**South Central Division.**—The South Central division consists of Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas. The authorized strength aggregated for the South Central division is 16,996. The actually organized force includes 10,958 infantry, 581 cavalry, 1,088 artillery, and 141 naval militia. The number of adults liable to serve is reported to be 1,597,984. The artillery armament available includes 34 ordinary field pieces and 23 Gatling guns. The number of tents available is given as 2,423.

**Western Division.**—The Western division includes Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California. The authorized strength aggregated for the Western group is 23,147. The actually organized force includes 10,155 infantry, 846 cavalry, 902 artillery, and 315 naval militia. The number of adults liable to serve is given as 521,042. The artillery armament available includes 35 ordinary field pieces and 12 Gatling guns. The number of tents available is 661.

**Completeness of Reports.**—It will be noted, in going over the State reports, that some are much more complete than others. Wherever details are wanting, the defect can be attributed in every instance to lack of information. No pains have been spared to furnish a statement sufficiently exhaustive to be useful. Where the figures in this article vary from others elsewhere published the difference is caused by diversity in State and other published or written reports. Sometimes the variations reach into the hundreds, but, as a rule, considering that all data given herein is from reports or letters sent or issued over the signature of a responsible official, the facts may be accepted as trustworthy.

**State and Territorial Reports.**—Now follow brief State and Territorial reports prepared from the several official sources within reach. At the end of the article will be found an interesting summary, from which a number of valuable facts concerning the present condition of the National Guard may be gathered.

**Alabama.**—The authorized strength of the Alabama State troops is 4,696. The actually organized force includes 15 general and staff officers, 276 other officers, 2,461 infantry, 172 cavalry, and 204 artillery. This force is formed into 3 regiments, each consisting of 12 infantry companies, a troop of cavalry, and a battery of artillery. The number of adults in the State liable to serve is 175,000. Regimental encampments occupy ten days.

An annual State appropriation is made for encampment purposes. For 1893-'94 the sum set apart was \$23,000; Federal, 1893, \$9,587.83.

Cavalry equipment is the same as that used by United States cavalry. Artillery equipment comprises 8 3-inch rifle guns and 7 Gatling guns. The infantry arm is the Springfield rifle. Each regiment has 263 wall tents, supplied by the Federal Government, including 3 for hospital use. Each company, in order to draw the quarterly armory rent allowance of \$50 must drill at least once a month, with an attendance of not less than 25 rank and file in uniform. The drills actually occur much oftener. Armories of a clublike character are owned or hired by single or combined companies, according to location. There are no arsenals in the State. Stores are kept at the Capitol, Montgomery.

About 50 per cent. of the organized force can be concentrated for service within twenty-four hours, 60 per cent. in thirty-six hours, and 90 per cent. in forty-eight hours. Plans are now ready for use in any emergency. Eighty per cent. of the force would turn out for sixty days.



MAJ.-GEN. E. A. McALPIN,  
Adjutant-General of New York.

**Arizona.**—The authorized strength of the Arizona National Guard is 893. The actually organized force includes 26 staff officers and 460 infantry, formed into a regiment, with headquarters at Tucson. The regiment consists of 10 companies in 3 battalions. A few men are trained for hospital service. The number of adults liable to serve is 7,562. There is a State appropriation of \$360 for each company. The Federal appropriation, 1894, was \$2,000. Infantry use Springfield rifles. Camp equipage is not yet provided. Companies drill once a week. There are no armories; rooms for drill purposes are rented. There are no arsenals in the State. No details are available as to concentration.

**Arkansas.**—The authorized strength of the Arkansas State Guard depends entirely on the Governor's special order. At present there is no limit. The actually organized force includes 15 general and staff officers, 974 infantry, 39 cavalry, and 33 artillery. This force is formed into

a brigade, with headquarters at Forrest City. It consists of 2 infantry regiments or battalions, 1 troop of cavalry, and 1 light battery of artillery. The number of adults in the State liable to serve is 214,708. There is an ambulance corps in the brigade. Regimental encampments occupy seven days.

There is no State appropriation.

The Federal appropriation, 1894, was \$6,900.90. Cavalry are armed with carbines, Colt's revolvers, and sabers. The battery carries 2 3-inch muzzle-loading pieces and 2 Gatling guns. The infantry arm is the Springfield rifle. The brigade possesses 296 tents, including 41 with walls and 5 for hospital use. Companies drill once a week. One infantry company, at Little Rock, owns an armory; other armories are hired. There are no arsenals in the State.

Within twenty-four hours the whole organized force can be concentrated at any point on the main lines of railroad. About 70 per cent. of the force would turn out for sixty days.

**California.**—The authorized strength of the National Guard of California is 8,172. The actually organized force includes 161 general and staff officers, 215 other officers, 4,083 infantry, 261 cavalry, 586 artillery, and 315 naval militia. This force is formed into a division of 6 brigades, comprising 8 regiments and a battalion of infantry, a regiment of artillery armed as infantry, 2 light batteries of artillery, a troop of cavalry, and 4 signal corps. The naval battalion, of 4 companies, is not included in the division, but acts under the Adjutant General of the State. The divisional headquarters are at San Francisco. Headquarters of brigades are at Los Angeles, San Francisco, Fresno, Sacramento, Chico, and Eureka respectively. The companies of the several regiments and battalions are distributed in cities and towns throughout the State. Ambulance corps and hospital corps are attached to each brigade. Signal corps have also been organized for several brigades. The number of adults in the State liable to serve is 139,343. Encampments occupy seven to nine days.

There is an annual State appropriation of \$180,000. The Federal appropriation, 1894, was \$7,844.58.

Cavalry troops are armed with Springfield carbines and sabers. Colt's revolvers are allowed for one half of each troop. The 2 batteries of artillery carry 7 Parrott rifled guns, 6 Napoleons, 6 Gatlings, 2 Hotchkiss guns, and 1 3-inch B. L. rifle. Infantry carry the Springfield rifle. The average camp equipage for each regiment includes 12 wall tents. Each company is called upon to attend 3 drills a month except in December. Cavalry must have mounted drill twice a year. Armories are not State properties. Most of them are rented. There are no arsenals in the State. There are several independent companies, in addition to the State troops.

Organizations in the larger cities could assemble at from eight to twelve hours' notice. The whole organized force except 2 companies could assemble within three days at San Francisco, Sacramento, or Los Angeles. About 75 per cent. would serve for sixty days.

**Colorado.**—The authorized strength of the National Guard of Colorado is 2,847. The actually organized force includes 38 general and



staff officers, 45 other officers, 836 infantry, 65 cavalry, and 47 artillery. This force is formed into a brigade, with headquarters at Denver. It consists of 2 regiments of infantry, 1 troop of cavalry, a battery of light artillery, and a signal corps. Bicycles form part of the signal-corps equipment. The number of adults in the State liable to serve is 85,000. Encampments occupy about eight days.

The State appropriation is secured from the military poll tax. The average for 1893 and 1894 was \$30,645. The Federal appropriation is not officially reported.

Cavalry troops have carbines and sabers. The battery carries 2 Napoleons and 2 Gatlings. Infantry and signal corps use the Springfield rifle. The camp equipage, recently received from the Federal Government, includes 118 wall tents and 3 for hospital use. Each company drills once a week. Armories are hired by the State for each company. There are no arsenals.

The organized force can be concentrated at Denver or any other important point in from forty-eight to sixty hours, without railroad right of way; with right of way, within twenty-four hours. From 80 to 90 per cent. would turn out for sixty days for State service.

**Connecticut.**—The authorized strength of the National Guard of Connecticut is 4,383. The actually organized force consists of 25 general and staff officers, 183 other officers, 2,720 infantry, 114 artillery, 81 naval militia, and 36 members of a signal corps. The troops are formed into a brigade, with headquarters at Hartford. It consists of 4 regiments of infantry, a light battery, a machine-gun battery, 2 separate companies, a battalion of naval militia, and a signal corps. Each regiment is assigned to two counties. There is an ambulance corps and hospital corps. The number of adults in the State liable to serve is 92,230. Brigade encampments occupy eight days.

There is no fixed State appropriation. Funds are secured on requisition. The Federal appropriation for 1894 was \$5,175.67.

Artillery carry 4 3-inch rifles and 4 Gatlings. Three regiments of infantry use Peabody rifles, and one possesses Springfields. The camp equipage includes 1,298 tents. There are 22 armories. A number of these belong to the State. The arsenal is at Hartford. Independent companies include 2 companies known as the Governor's Horse Guards, 2 companies of foot guards, and an organization known as the Putnam Phalanx.

The organized force can be concentrated in any of the largest towns in from eight to twelve hours. Seventy-five per cent. would turn out for sixty days.

**Delaware.**—The authorized strength of the Delaware National Guard is 600. The actually organized force consists of 15 general and staff officers, 35 other officers, 323 infantry, and 54 cavalry. The number of adults in the State liable to serve is estimated at 42,123. This force is formed into a brigade, consisting of a regiment of infantry and a troop of cavalry, with headquarters at Wilmington. There is an ambulance, hospital, and signal corps.

No State appropriation was granted in 1894. No Federal appropriation is reported.

Camp equipage consists of 36 wall, 7 hospital, and 150 common tents. Companies drill once a week. There is an armory at Wilmington. There is no arsenal in the State.



MAJ.-GEN. GEORGE R. SNOWDEN,  
Pennsylvania N. G.

**District of Columbia.**—The authorized strength of the National Guard of the District of Columbia is 3,320. The actually organized force includes 64 staff officers, 82 other officers, 1,215 infantry, 54 cavalry, 39 artillery, 95 engineers, 22 members of an ambulance corps, and a field-music corps of 28. This force is formed into a brigade, composed of 2 regiments and one separate battalion of infantry, a troop of cavalry, a battery of light artillery, a cycle company, a company of veterans, an engineer battalion, an ambulance corps, and a corps of field music. Brigade headquarters are at Washington. Signal duties are performed by the engineer corps. The number of adults in the district liable to serve is about 42,000. Encampments occupy six days.

There is a District appropriation.

For the year ending June 30, 1895, the sum was \$26,500; national appropriation, \$8,000.08.

Cavalry carry Springfield carbines, Colt's revolvers, and sabers. Artillery armament consists of 2 Gatling guns and 2 light 6-pounder bronze guns. Infantry use the Springfield rifle. Camp equipage consists of 168 wall, 549 common, and 10 hospital tents. Companies drill once a week. There are 6 halls for drill purposes, including 2 regular armories. There are no arsenals in the District. Independent commands comprise the National Rifles, the Old Guards, and several colored companies.

For local duty, the force can be concentrated on Pennsylvania Avenue, Washington, within three hours; for outside service within twenty-four hours. Seventy-five per cent. of the force would respond for a short term of service. For a long term of service, the whole force would be available.

**Florida.**—The authorized strength of the Florida State troops is 1,474. The actually organized force includes 827 infantry and 69 artillery. This force is formed into 5 battalions. Three of these consist of infantry, and the re-

mainder of infantry and artillery. The headquarters of battalions are at Jacksonville, Leesburg, Pensacola, Gainesville, and Tampa. The number of adults in the State liable to serve is 60,000. Encampments occupy about eight days.

There is a State appropriation of \$5,000 for camp instruction, also additional sums for other purposes. The Federal appropriation, 1894, was \$3,486.48.

Gatling guns are used by the artillery. Infantry companies are armed with Springfield rifles. The camp equipage includes 391 wall tents and 14 for hospital use. Companies are required to drill once a week. In each county where a company is located county authorities provide for armories. There is no arsenal. Stores are held at the Capitol.

The maximum of time necessary for concentration at any point is forty-eight hours; if called into Federal service, 80 per cent. of organized strength would respond for duty; "but if for sixty days, the call would be ruinous to the business of many of the officers and men."



MAJ.-GEN. J. W. PLUME,  
New Jersey N. G.

**Georgia.**—The authorized strength of the State militia, known as the Georgia Volunteers, is 12,330. Of this total, 94 officers and 1,978 men are colored. The actually organized force includes 3,515 infantry, 589 cavalry, 134 artillery, and 268 naval militia. Of these, 83 officers and 1,076 men are colored. There are no divisions or brigades. The white infantry force contains 2 regiments of 3 battalions, 4 regiments of 2 battalions, and 1 battalion unassigned. There are 4 battalions of white cavalry, including 1 regiment of 3 battalions. The white artillery consists of 2 unassigned companies. There are 3 battalions and 4 unassigned companies of colored infantry, also 1 company of colored cavalry and 1 company of colored artillery. There is an ambulance corps and a hospital corps, also a signal corps. The number of adults in the State liable to serve is 264,021. Encampments occupy about ten days.

There is a State appropriation. In 1893 and 1894 the sum was \$20,000. The Federal appropriation, 1894, was \$11,213.96.

Artillery carry 4 3-inch M. L. rifles, 2 brass field pieces, and a Gatling gun. Thirteen of the 14 cavalry troops use the Springfield carbine, also a saber. One troop is armed with the Marlin carbine. Infantry use the Springfield rifle. The camp equipage includes 364 wall tents and 4 for hospital use. Companies drill once a week, except cavalry, whose exercises are held usually once a month. Some battalions and companies own their own armories. Others rent buildings for the purpose. Military stores are held at the Capitol.

Within twenty hours, the organized force, except cavalry, could be concentrated at Atlanta, Savannah, Albany, or Griffin. About 85 per cent. of the force would turn out for sixty days.

**Idaho.**—The authorized strength of the Idaho National Guard is 450. The actually organized force is 305, consisting of 8 staff officers and 297 infantry. The number of adults in the State liable to serve, 1893, was 13,932. The above are the only details available concerning Idaho, and have been taken from the Federal report for 1894.

**Illinois.**—The authorized strength of the Illinois National Guard is 8,999, exclusive of 401 officers. The actually organized force consists of 59 general and staff officers, 317 other officers, 4,957 infantry, 99 cavalry, 135 artillery, and 359 naval militia. This force is formed into 3 brigades. The First Brigade, with headquarters at Chicago, includes 2 infantry regiments of 3 battalions and 1 with 2 battalions, also a battery of artillery and a troop of cavalry. The Second Brigade, with headquarters at Springfield, comprises 2 infantry regiments, of 3 battalions each, and a battery of artillery. The Third Brigade, with headquarters at Aurora, consists of 2 infantry regiments, of 3 battalions each, and a troop of cavalry. There is a hospital corps in every regiment. Each regiment has a bicycle and a signal detachment. The number of adults in the State liable to serve is 852,635. Annual regimental encampments last eight days; brigade encampments, every four years, have a similar duration.

The State appropriation, 1895, was \$120,000. The Federal appropriation amounted to \$20,918.20.

Cavalry use Springfield carbine and a saber. One troop is armed with revolvers. Artillery carry 8 Gatling guns, 4 3-inch M. L. Rodman rifles, and 4 12-pounder Napoleons. This arm is also supplied with sabers and revolvers. Infantry use the Springfield rifle. Three Gatling guns are included in the infantry armament. The camp equipage includes 900 tents. Weekly drills are required. All armories are rented. The State arsenal is at Springfield. There are numerous independent organizations, consisting mainly of boys, and located principally at Chicago. They drill with arms by permission of the Adjutant General.

The whole or any portion of the force can be concentrated at Chicago within eighteen hours; at East St. Louis, in sixteen hours; at Springfield, in fourteen hours. Plans for emergencies are on file in the Adjutant General's office. Eighty-five per cent. of the force would turn out for sixty days.



**Indiana.**—The authorized strength of the State militia, known as the Indiana Legion, is 4,582 men. The actually organized force includes 15 general and staff officers, 205 other officers, 2,839 infantry, and 200 artillery. This force is formed into a brigade containing 4 regiments of infantry and 3 batteries of artillery. Indianapolis is the headquarters of the brigade. Men are instructed in ambulance, hospital, and signal work. The number of adults in the State liable to serve is 481,192. Encampments occupy from six to eight days.

The annual State appropriation is \$45,000. The Federal appropriation is \$13,821.45.

Artillery carry 12 guns, including 4 machine guns and 8 3-inch rifles. Infantry use Springfield rifles. The camp equipage includes 843 tents. Drills are held weekly. Buildings for use as armories are hired, with the exception of the light artillery battery at Indianapolis. There is a United States arsenal at Indianapolis.

The force can be concentrated at Indianapolis within from ten to twenty-four hours. Nearly the entire force would turn out for sixty days.

**Iowa.**—The authorized strength of the Iowa National Guard is 5,000. The actually organized force includes 50 general and staff officers, 203 other officers, and 2,155 infantry. The force is formed into 2 brigades, and consists of 4 regiments of infantry of 3 battalions each, and a hospital corps. There is a signal corps made up by details from companies. This corps is partially mounted on bicycles and partially armed with Remington pistols. The number of adults in the State liable to serve is 269,510. Regimental encampments last six or seven days. There is an annual State appropriation of \$45,000. The Federal appropriation amounts to \$11,213.96.

The infantry arm for about two thirds of the force is the same as that used by the United States Infantry; the remainder use the Springfield rifle, old pattern. There is a Gatling gun for artillery purposes. The total camp equipage consists of 383 wall tents, including 15 for hospital use. Companies drill once a week. There are no armories; halls are rented for drill purposes. A fireproof arsenal is located at Des Moines.

The force can be concentrated within twenty-four hours at any point where a regiment is quartered. Ninety per cent. would turn out for sixty days.

**Kansas.**—The authorized strength of the Kansas National Guard is 3,500. The actually organized force includes 22 general and staff officers, 109 other officers, 1,557 infantry, and 83 artillery. This force is formed into 3 regiments of infantry and 2 batteries of artillery. The number of adults in the State liable to serve is 100,000. No reports are available concerning encampments or appropriations. Artillery armament comprises 4 Napoleons and 1 Gatling gun. Infantry use the Springfield rifle. There is no report available concerning camp equipage. There are drill rooms or armories at the headquarters of every company. The independent organizations include 2 colored companies of infantry.

The whole force can be concentrated at central points within fourteen hours.

**Kentucky.**—The authorized strength of the State militia, known as the Kentucky State Guards, is 3,500. The actually organized force includes 17 general and staff officers and 1,454 infantry. This force consists of 3 infantry regiments. There is no brigade organization. The number of adults in the State liable to serve is 361,137. Encampments occupy ten days.



BRIG.-GEN. FREDERIC M. SACKETT,  
Adjutant-General of Rhode Island.

There is an annual State appropriation of \$10,000. The Federal appropriation, 1894, was \$11,213.96.

There are 2 3-inch M. L. field pieces and 3 Gatling guns available for artillery. Infantry use the Springfield rifle. Camp equipage includes 145 wall tents, of which 6 are for hospital use. Company drills are held weekly. There are no regular armories, but each county provides drill halls and storage. There is a small arsenal at Frankfort.

The force can be concentrated at central points within from ten to twelve hours. About 80 per cent. would turn out for sixty days.

**Louisiana.**—The authorized strength of the Louisiana State National Guard is 4,000. The actually organized force includes 13 general and staff officers, 99 other officers, 1,067 infantry, 401 light artillery, and 141 naval militia. This force is formed into a brigade, consisting of 5 battalions and 3 separate companies of infantry and 3 batteries and 1 battalion of artillery. The number of adults in the State liable to serve is about 138,439.

There is no report available concerning a State or Federal appropriation. Artillery armament comprises 4 Gatling guns, 2 12-pounders, 4 10-pounders, 3 M. L. rifles, 2 B. L. rifles, 1 howitzer, and 1 Hotchkiss. Infantry use the Springfield rifle. Camp equipage includes 45 wall tents. Companies drill once a week. There are armories in nearly every city at or near which troops are quartered. The total number of armories given is 13.

No data is available to show length of time necessary for concentration, but the entire force can probably be got together in less than twenty-four hours.

**Maine.**—The authorized strength of the State militia, known as the National Guard of the

State of Maine, is 2,114. The actually organized force includes 11 general and staff officers, 90 other officers, 1,125 infantry, and 22 members of an ambulance corps. The infantry force is formed into 2 regiments. The number of adults in the State liable to serve is 97,220. Encampments occupy five or six days.



BRIG.-GEN. CHARLES F. BEEBE,  
Oregon N. G.

The State appropriation is secured by a tax of  $\frac{1}{2}$  of 1 mill upon all taxable property. In 1894 this tax produced \$26,185.87. The Federal appropriation, 1894, amounted to \$5,299.72. There are 3 brass 12-pounders, 3 brass 6-pounders, and 2 Gatling guns available for artillery. Infantry use the Springfield rifle. Camp equipage consists of 218 wall and 21 conical tents. Each company must drill at least twice a month. Rooms called armories are provided for each company, and partially paid for by the State. There is a small arsenal near Bangor. An independent command, called the Yarmouth Rifles, is quartered at Yarmouth. It has no connection with the National Guard.

The force can be concentrated at Portland, Lewiston, Auburn, Saco, Biddeford, Augusta, Bangor, or any other important point within twenty-four hours. About 90 per cent. would turn out for sixty days to serve within the State.

**Maryland.**—The authorized strength of the Maryland National Guard is not fixed, but may consist of 40 companies of 65 men each. The actually organized force includes 25 general and staff officers, 175 other officers, 1,912 infantry, and 135 naval militia. The troops are formed into a brigade of 3 regiments of infantry, a veteran corps, and 3 separate colored companies. Brigade headquarters are at Baltimore. The number of adults in the State liable to serve is 125,000. Encampments occupy about ten days.

There is an annual State appropriation of \$45,000. The Federal appropriation, 1894, was \$6,972.96. Infantry are armed with Springfield rifles. Camp equipage consists of 438 common and 37 wall and hospital tents. Companies drill once a week. One infantry regiment occupies an armory in Baltimore provided by the city. Ar-

mories for other organizations are rented from the State appropriation. There are no arsenals. Extra stores are kept in the Fifth Regiment armory. A battalion of naval militia has been formed. It is practically independent, but must report to the Adjutant General, and, through the Governor, to the Secretary of the Navy. Two of the 3 infantry regiments can be concentrated at Baltimore within from four to six hours. From 85 to 90 per cent. would turn out for sixty days.

**Massachusetts.**—The authorized strength of the State militia, known as the Massachusetts Volunteer Militia, is 6,514, not including the bands. The actually organized force includes 22 general and staff officers, 419 other officers, 4,302 infantry, 285 cavalry, 266 artillery, 501 naval brigade, 502 cadets, 49 members of a signal corps, and 61 members of an ambulance corps. This force embraces 6 regiments of infantry, 2 corps of cadets, 1 battalion and 1 separate company of cavalry, 1 battalion and 1 separate battery of artillery, an ambulance corps, and a signal corps. The whole force is divided into 2 brigades, with headquarters at Boston and Lynn. In each brigade there are 3 infantry regiments of 12 companies and a proportion of the other arms. The number of adults in the State liable to serve is 389,529. Encampments occupy from four to eight days.

There is an annual State appropriation of \$45,000. The Federal appropriation, 1894, was \$6,972.96.

Cavalry have Springfield carbines and sabers. Artillery ordnance consists of 8 3-inch M. L. field guns, 4 12-pounder Napoleons, and 6 Gatling guns. The naval brigade is armed with Lee rifles, Gatlings, howitzers, and rapid-fire Hotchkiss guns. Infantry use the Springfield rifle. Camp equipage consists of about 900 wall tents. Companies are expected to drill once a week. There are 9 State armories. Two of these are in Boston, the others being situated at Worcester, Fall River, Fitchburg, Lowell, Lawrence, Lynn, and Springfield. In 36 other towns there are leased or rented halls. There is an arsenal at South Framingham. Seven independent commands exist in the State, including the Ancient and Honorable Company of Artillery, the Boston Light Infantry Association, and 5 veteran associations.

The force can be concentrated within eighteen hours at any one point in a regimental district, and within twelve hours thereafter can be moved any other point selected. About 86 per cent. would turn out for sixty days.

**Michigan.**—The authorized strength of the Michigan National Guard is 3,644. The actually organized force includes 18 general and staff officers, 160 other officers, and 2,643 infantry. This force is formed into a brigade, consisting of 5 regiments of infantry of 2 battalions each. The headquarters of the brigade are at Ypsilanti. The number of adults in the State liable to serve is 224,000. Encampments occupy five days.

The State appropriation, 1895, was \$120,000. The Federal appropriation, 1894-'95, was \$20,918.20.

One Gatling gun is available for artillery use. Infantry use Springfield rifles. Camp equipage includes 607 wall tents. Companies drill once a



week. There are no State armories. Buildings are rented for drill purposes. There is a small arsenal at Lansing. There are many independent commands, privately armed and equipped, not controlled or recognized by the State. Besides these independent organizations there is a battalion of naval militia. The force could be concentrated within forty-eight hours at the principal points. About 90 per cent. would turn out for sixty days.

**Minnesota.**—The authorized strength of the Minnesota National Guard is 2,570. The actually organized force includes 38 general and staff officers, 243 other officers, 1,625 infantry, and 113 artillery. This force is formed into a brigade, consisting of 3 regiments of infantry and a battalion of artillery, with headquarters at St. Paul. There is a signal corps in 2 of the 3 regiments. The number of adults liable to serve is 160,000. Encampments occupy nine days.

There is an annual State appropriation of \$40,000. The Federal appropriation, 1894, was \$7,844.58.

The artillery equipment consists of 2 3-inch rifles and 2 Napoleon guns. Infantry carry the Springfield rifle. Camp equipage includes 200 wall tents. Companies drill once a week. Armories are in use at Stillwater and Redwing; at other places small buildings, called armories or drill rooms, are used. The only independent commands are 4 organizations of Sons of Veterans. There are no arsenals in the State.

The force can be concentrated within twenty-four hours at St. Paul, Minneapolis, Kasota, or Duluth; 50 per cent. would turn out for sixty days.

**Mississippi.**—The authorized strength of the Mississippi National Guard is 1,800. The actually organized force includes 15 general and staff officers, 160 other officers, 1,200 infantry, 80 cavalry, and 240 artillery. This force is formed into a brigade, consisting of 3 regiments and a cadet battalion of infantry, a battalion of cavalry, and a battalion of artillery, attached to an infantry regiment. Headquarters of the brigade are at Columbus. The number of adults in the State liable to serve is 228,700, of which number 127,900 are colored. Encampments occupy seven days.

The State appropriation, 1895, was \$3,600, but it can only be used in extraordinary cases, such as riots, insurrections, or rebellions. The Federal appropriation, 1894, was \$7,763.61, with an additional allowance for transportation of supplies.

Infantry are armed with rifles of a make not specified. Cavalry carry carbine and saber. The artillery armament consists of 8 guns, including 4 Gatling guns. Camp equipage comprises 305 tents, 100 of which have walls, 200 are common, and 5 are for hospital use. Company drills take place at short intervals. Armories are rented by companies, ordinary halls and rooms being used. There is no arsenal in the State. There are 2 independent organizations at Natchez. These are not officially reported.

The force can be concentrated at Jackson, Meridian, West Point, Holly Springs, Greenville, or other important points within twenty-four hours. About 90 per cent. would turn out for sixty days.

**Missouri.**—The authorized strength of the Missouri National Guard is 2,500. The actually organized force includes 14 general and staff officers, 1,961 infantry, and 121 artillery. This force is formed into a brigade, with headquarters at Kansas City. The brigade consists of 4 regiments of infantry and 2 batteries of artillery. Each regiment contains 2 battalions of 4 companies each. There is no organized ambulance corps or hospital corps, but provision is made in each regiment to meet emergencies. The number of adults in the State liable to serve is 400,000. Encampments occupy one week.

The State appropriation for 1894, with 1895, was \$25,000. The Federal appropriation, 1894-'95, was \$14,664.41.

Artillery carry 5 3-inch M. L. rifles and a Gatling gun. Infantry use Springfield rifles. Camp equipage consists of 349 common tents, 8 conical, 86 wall, and 10 for hospital use. Companies drill once a week. There is an armory, hired, for the combined use of a regiment and a battery, at St. Louis. Two of the remaining companies own their own armories; the others hire rooms for drill and storage purposes. There is an arsenal in Jefferson City.

The force can be concentrated at St. Louis within from twenty-four to thirty hours. About 80 per cent. would turn out for sixty days.



MAJOR CHARLES F. ROE,  
Squadron A, New York N. G.

**Montana.**—The authorized strength of the Montana National Guard is 585. The actually organized force includes 15 general and staff officers, 42 other officers, and 438 infantry. This force is formed into a regiment of infantry and a signal corps. The headquarters of the regiment is at Butte City, where 3 companies are stationed. The number of adults in the State liable to serve is 25,000. Encampments occupy seven days.

The State appropriation, 1894, was \$21,700. The Federal appropriation, for year ending June 30, 1895, was \$2,587.83. Carbines and sabers are available for cavalry. Four wrought-iron M. L. rifled guns are available for use of artillery.

The infantry arm is the Springfield rifle. Camp equipage provides tentage for 600 men. Companies usually drill once a week. There is a State armory at Helena; at other points rooms are hired. There is also an arsenal at Helena.



COL. THOMAS R. MATHEWS,  
1st Regiment, Massachusetts Volunteer Militia.

The force can be concentrated at the several armories within twenty-four hours. Eight companies could be assembled at Helena or at Bozeman within six hours. From 60 to 75 per cent. would turn out for sixty days.

**Nebraska.**—The authorized strength of the Nebraska National Guard is 2,000. The actually organized force includes 7 general and staff officers, 91 other officers, 997 infantry, 46 cavalry, and 62 artillery. This force is formed into a brigade, consisting of 2 regiments of infantry, a troop of cavalry, and a battery of artillery. Omaha is the headquarters of the brigade. The number of adults in the State liable to serve is 135,000. Encampments occupy six days.

The State appropriation, 1894, was \$30,000. The Federal appropriation, 1894, amounted to \$6,900.90.

Cavalry carry carbines. Artillery armament consists of 2 Rodman guns. Infantry are armed with Springfield rifles. Camp equipage includes 38 wall tents, 379 common, and 6 for hospital use. Companies drill at least twice a month. There is an armory at every place where a company is located. There is no arsenal in the State. The existence of 12 independent commands is reported. The strength of each is not given.

The force can be concentrated at Omaha, Lincoln, or Kearney within thirty-six hours. One hundred per cent. would turn out for sixty days.

**Nevada.**—The authorized strength of the Nevada National Guard consists of 112 men, officers included, in each county where more than 2,000 votes are polled at general elections, with an additional company for each additional 1,000 votes. The law provides that any organized companies in existence prior to the passing of this act should not be disbanded. The actually organized force includes 8 general staff officers, 39 other officers, 376 infantry, and 62

artillery. The force consists of 7 companies of infantry and a battery of light artillery attached to infantry. The 7 companies constitute a regiment. The headquarters, 2 companies of infantry, and the battery of artillery are stationed at Virginia City. The number of adults in the State liable to serve is 14,000. Encampments occupy six days.

There is an indirect State appropriation, each company drawing a county allowance of \$75 per month, with extra allowance when ordnance is issued. These allowances are reimbursed by the State. The Federal appropriation, 1894, was \$2,587.83.

Artillery carry 2 3-inch M. L. rifles. Infantry use Springfield rifles, with a Gatling gun attached for regimental use. Camp equipage consists of 103 tents, 10 of which have walls and 3 are for hospital use. Companies drill once a week. Armories, with one exception, are rented. The armory at Carson is owned by a company. There is no arsenal in the State. A storeroom at Carson is utilized for arsenal purposes.

The whole force can be concentrated at Reno within forty-eight hours. Four companies and the battery can be assembled at Reno within four hours, and 2 more companies within twenty-four hours. An accurate percentage of men who would turn out for sixty days can not be given, but nearly all can be relied upon to meet an emergency.

**New Hampshire.**—The authorized strength of the New Hampshire National Guard is 1,663. The actually organized force includes 10 general and staff officers, 110 other officers, 1,120 infantry, 64 cavalry, and 79 artillery. The force is formed into a brigade, consisting of 3 regiments of infantry, a troop of cavalry, and a battery of light artillery. Brigade headquarters are at Concord. Each regiment of infantry consists of 2 battalions, and each battalion of 4 companies. The number of adults in the State liable to serve is 34,000. Encampments occupy one week.

The annual State appropriation is \$30,000. The Federal appropriation, 1894, was \$3,450.45.

Cavalry have sabers only. Artillery carry 4 12-pounder brass smooth-bore guns. Infantry use the Springfield rifle. Camp equipage consists of 393 small and 15 large tents. Companies drill once a week. There is a State armory at Nashua and an armory building at Keene. There is an arsenal at Concord. There are 2 independent organizations of veterans and 1 of cadets.

The whole force can be concentrated at White River Junction or any other point in the State within thirty-six hours. About 80 per cent. would turn out for sixty days.

**New Jersey.**—The authorized strength of the New Jersey National Guard is 5,609. The actually organized force includes 65 general and staff officers, 248 other officers, 3,369 infantry, 54 cavalry, 57 artillery for Gatling-gun purposes, and 176 naval militia. This force is formed into a division of 2 brigades, each containing 3 regiments of infantry. The Second Brigade includes a Gatling-gun company. The headquarters of the division are at Newark; that of the First Brigade at Jersey City; and that of the Second Brigade at Camden. Provision is made for ambulance, hospital, and signal purposes.



The number of adults in the State liable to serve is 284,887. Encampments occupy six days.

There is a State appropriation of \$500 per annum for infantry and artillery companies, \$750 for Gatling-gun companies, and \$1,000 for cavalry companies. Additional sums are also appropriated for brigade purposes, etc. The Federal appropriation, 1894, was \$8,716.

Cavalry are supplied with carbines, revolvers, and sabers. Artillery carry 2 Gatling guns, also Springfield rifles. Infantry are armed with Springfield rifles. There is a reserve artillery armament of 12 Napoleon guns, 4 3-inch Griffin guns, 4 bronze guns, 4 howitzers, and 7 Gatling guns. Camp equipage is ample. Companies drill once a week. There are 4 regimental armories. There is one arsenal in the State. Numerous cadet corps exist and are attached to the National Guard.

The whole division can be concentrated at any given place within the State inside of six hours. At least 75 per cent. would turn out for sixty days.

**New Mexico.**—The authorized strength of the New Mexico militia is 1,000. The actually organized force includes 18 general and staff officers, 38 other officers, 268 infantry, and 152 cavalry. This force is formed into a regiment of 5 companies of infantry, with headquarters at Albuquerque, and 3 troops of cavalry. The number of adults in the Territory liable to serve is 25,000. The Territorial appropriation for 1894 was \$1,000. The Federal appropriation, 1894, was \$4,000. Cavalry carry carbines and infantry use the Springfield rifle. Camp equipage consists of 2 wall and 20 common tents. More tents have been applied for. There is an armory at Santa Fé. There is no regular arsenal in the Territory. An armory is used for store purposes.

The force can be concentrated in a few hours. A large percentage would turn out for sixty days.

**New York.**—The authorized strength of the New York National Guard is 15,000. The actually organized force includes 89 general and staff officers, 641 other officers, 12,159 infantry, 134 cavalry, and 416 artillery. The cavalry arm is being strengthened. An additional troop of 80 men has been formed in Brooklyn, and one of 60 men in Buffalo. There is a battalion of naval militia consisting of 20 officers and 324 men, with headquarters at New York. There are also 2 separate divisions of naval militia, the total strength of each being 51 and 49 respectively. Their headquarters are at Rochester. This force is formed into 4 brigades, with headquarters at New York city, Brooklyn, Albany, and Buffalo. The First Brigade consists of 7 regiments of infantry, a squadron of cavalry, 2 batteries of light artillery, and a signal corps. The Second Brigade consists of 4 regiments and a separate company of infantry, a battery of light artillery, a troop of cavalry, and a signal corps. The Third Brigade consists of a battalion and 30 separate companies of infantry and a battery of light artillery. The Fourth Brigade consists of 2 regiments and 14 separate companies of infantry and a battery of light artillery. There are hospital corps and regimental ambulance appliances in each brigade. The Fourth Brigade has appliances and trained men for signal purposes. The

number of men liable to serve is 750,000. Encampments occupy one week.

There is an annual State appropriation of \$400,000 with additional sums for special purposes. The Federal appropriation, 1894, amounted to \$31,054.05.

Cavalry armament consists of Remington carbines and sabers. Artillery armament includes 12 3½-inch B. L. rifles, 6 light 12-pounder guns, 7 Gatling guns, and 4 mountain howitzers. There is also a reserve of 4 3½-inch B. L. rifled guns. Camp equipage, available or ready for delivery, consists of 1,465 wall tents, including 65 for hospital use. The regulations require one inspection, 5 drills and parades, and 12 evening drills during each year. There is ample armory accommodation. An arsenal is located in New York city. The only independent organizations are the Old Guard and the Albany Burgesses' Corps.

The entire force can be concentrated at any given point within forty-eight hours. About 90 per cent. would turn out for sixty days.



COL. DANIEL APPLETON,  
7th Regiment, New York N. G.

**North Carolina.**—The authorized strength of the North Carolina State Guard is 5,000. The actually organized force includes 32 general and staff officers, 1,462 infantry, 45 cavalry, and 175 naval artillery. This force is formed into a brigade consisting of 4 infantry regiments of 7 companies each, an unattached colored company of infantry, a troop of mounted rifle-men, and a battalion of naval artillery. Brigade headquarters are at Tarboro. The number of adults liable to serve is 240,000. Encampments occupy about eight days.

The State appropriation, 1894, was \$16,000. The Federal appropriation, 1894, amounted to \$9,587.83.

The armament of cavalry and infantry is the same as in the United States army. The naval battalion is furnished with Lee magazine rifles, a Gatling gun, 2 3-inch B. L. and 3 12-pounder M. L. howitzers. Camp equipage consists of 375 common, 78 wall, and 4 hospital tents. Companies drill once a week. There is one large armory at Winston. Halls are rented by nearly all the companies for drill purposes. There is

an arsenal at Raleigh. There is an independent company of infantry at Fayetteville. It is not part of the State guard.

The force can be concentrated in from twelve to twenty-four hours, according to location. From 75 to 90 per cent. would turn out for sixty days.

**North Dakota.**—The authorized strength of the North Dakota National Guard is 884. The actually organized force includes 4 general and staff officers, 45 other officers, 370 infantry, 73 cavalry, and 54 artillery. This force consists of a regiment of infantry, a battery of light artillery, and 2 troops of cavalry. The infantry regiment consists of 8 companies, with headquarters at Jamestown. The home station of artillery is Lisbon. Cavalry stations are Dunseith and Bottineau. The number of adults liable to serve is 50,000. Encampments occupy ten days.

There is an annual State appropriation of \$11,000. The Federal appropriation is \$2,587.83 per annum.

Cavalry carry Springfield carbines. Artillery equipment consists of a Gatling gun and 2 3-inch M. L. rifles. Infantry are armed with Springfield rifles. Camp equipage consists of 20 wall, 65 common tents, and 6 for hospital use. Companies drill from once to three times a week. There are small rented armories in 11 towns. There is no arsenal in the State.

The force can be concentrated at any point in less than twenty-four hours. About 95 per cent. would turn out for sixty days.



COL. WILLIAM K. CAFFEE,  
2d Regiment, Missouri N. G.

**Ohio.**—The authorized strength of the Ohio National Guard is 9,460. The actually organized force includes 18 general and staff officers, 455 other officers, 5,125 infantry, 93 cavalry, 437 artillery, and 66 members of a bicycle corps. This force consists of 9 regiments of infantry, 8 batteries of artillery, 2 troops of cavalry, and a bicycle corps of cadets. It is not brigaded. Men for hospital work form part of their own regiments. Three regiments have ambulance wagons. Men for signal work are trained in several regiments. Signal equipment includes a number of bicycles. The number of adults in the

State liable to serve is about 645,000. Encampments occupy six days.

The State appropriation, 1894, was \$33,299.58. The Federal appropriation, 1894, was \$19,840.09.

Cavalry carry Springfield carbines, Colt's revolvers, and regulation sabers. Artillery armament aggregates 10 3-inch rifles, 12 Gatlings, and 6 bronze pieces. Camp equipage consists of 649 wall tents, including 8 for hospital use. Companies drill once a week. There are large armories built or being built in 8 cities. In the smaller towns, buildings are rented for the purpose. There is a State arsenal at Columbus. At Cleveland there are 6 independent organizations; also 1 at Columbus. They are not recognized by the State. One of these is a battery with Gatling guns.

There are 24 points for concentration. At any one of these troops can be concentrated within twelve hours. A large percentage would turn out for sixty days.

**Oklahoma.**—The authorized strength of the National Guard of the Territory is not officially stated. The actually organized force includes 4 general and staff officers, 9 other officers, and 202 infantry. This force is formed into 3 companies. The number of adults in the Territory liable to serve is not officially reported. No report is available concerning a Territorial appropriation. The Federal appropriation, 1895, was \$1,000. Infantry use the Springfield rifle.

**Oregon.**—The authorized strength of the Oregon National Guard is 2,166. The actually organized force includes 26 general and staff officers, 1,275 infantry, 108 cavalry, and 60 artillery. This force is formed into a brigade, comprising 3 regiments of 2 battalions of 4 companies each, a separate infantry battalion of 2 companies, 2 troops of cavalry, and a battery of artillery. The headquarters of the brigade are at Klamath Falls. Men are especially enlisted in each organization for hospital work. There is a signal officer on the staff of each regiment. The number of adults in the State liable to serve is 88,049, not including exemptions. The duration of encampments is not officially reported.

There is an annual State appropriation of \$30,000. The Federal appropriation, 1894, was \$3,486.48.

Cavalry troops have Spencer carbines and light sabers. One troop has revolvers. The battery armaments include 2 brass 6-pounders and 2 Gatling guns. The infantry arm is the Springfield rifle. Camp equipage consists of 193 tents, including 34 with walls and 6 for hospital use. Companies drill once a week. There is a large armory at Portland. Other armories are hired halls. There is no arsenal in the State.

The force can be concentrated at Portland within three days. About 75 per cent. would turn out for sixty days.

**Pennsylvania.**—The authorized strength of the Pennsylvania National Guard is 10,878, not including 3 divisions of naval militia. The actually organized force includes 65 general and staff officers, 7,638 infantry, 188 cavalry, 245 artillery, 183 naval militia, 63 Invincibles, and 256 Fencibles. This force is formed into a division of 3 brigades. The First Brigade, with headquarters at Philadelphia, comprises 4 regiments of



infantry, a battalion of Fencibles, a colored company, a troop of cavalry, and a light battery. A battalion of naval militia is attached to this brigade. The Second Brigade, with headquarters at Franklin, comprises 6 regiments of infantry, a troop of cavalry, a battery of artillery, and a battalion of naval militia. The Third Brigade, with headquarters at Lebanon, consists of 5 infantry regiments, a troop of cavalry, and a battery of artillery. There is a hospital corps in every regiment. The division is able to furnish good signal service, with appropriate equipment. The number of adults in the State liable to serve is 806,230. Encampments last about eight days.

The State appropriation, 1894, was \$320,000. The Federal appropriation, 1894, was \$27,891.87.

Cavalry carry Winchester carbines, also a number of Colt's revolvers, Sharp's carbines, and sabers. The artillery armament includes 6 2-inch B. L. rifles and 6 3-inch M. L. rifles. Infantry carry the Springfield rifle. Camp equipment includes 92 hospital tents, 1,591 wall tents, and 2,390 common tents. Companies drill once a week. There are 6 large armories, 2 in Philadelphia, 1 in Wilkesbarre, 2 in Pittsburg, and 1 in Scranton. Most of the others are large rooms or halls. There is an arsenal at Harrisburg. There are numerous separate organizations of a social or political character, carrying arms for parade purposes, but not in any way recognized by the State.

The entire force can be concentrated in thirty-two hours at any point. Plans are ready for use in case of emergency. About 95 per cent. would turn out for sixty days.

**Rhode Island.**—The authorized strength of the State National Guard, known as the Rhode Island Militia, is 1,400. The actually organized force includes 13 general and staff officers, 92 other officers, 783 infantry, 96 cavalry, 118 artillery, and 5 members of a signal corps. This force is formed into a brigade consisting of 2 regiments of infantry, 2 separate colored infantry companies, a battalion of cavalry comprising 2 troops, a machine-gun battery, a light battery, and a signal corps; also 2 companies of naval reserves, consisting of 113 officers and men, not included in figures above given. Headquarters of the brigade are at Providence. Ambulance and hospital equipment is attached to the brigade. The number of adults in the State liable to serve is 73,945. Encampments occupy six days.

The State appropriation, 1894, was \$104,000. The Federal appropriation, 1894, was \$3,450.45.

Cavalrymen are armed with Springfield carbines and sabers. Artillery armament includes 4 3-inch wrought-iron guns, 12 6-pounder and 4 4-pounder bronze M. L. rifles, and 4 Gatling guns. Infantry and the naval reserve are armed with Springfield rifles. Camp equipment consists of 359 wall and 5 hospital tents. Companies drill once a week. There are armories at Pawtucket, Newport, and Bristol. Other drill rooms are rented. There are no arsenals in the State. Independent organizations consist of the Newport Artillery Company, the United Train of Artillery (Providence), Bristol Train of Artillery, Kentish Guards, and Warren Artillery.

The force can be concentrated within twelve

hours at Providence. Seventy to 75 per cent. would turn out for sixty days.



COL. JOHN W. EBEL,  
1st Regiment, Indiana N. G.

**South Carolina.**—The authorized strength of the State militia, known as the South Carolina Volunteer Troops (white) and National Guard (colored), is 4,674. The actually organized force includes staff officers (number not officially stated), 3,069 infantry, 1,519 cavalry, and 219 naval militia. The composition of this force, as to regiments and troops of cavalry, is not officially reported. The number of adults in the State liable to serve can not be ascertained from any published statement.

There is no definite information available concerning the annual State and Federal appropriation for militia purposes. The details given above comprise all the information available.

**South Dakota.**—The authorized strength of the South Dakota National Guard is 3,057. The actually organized force includes 29 general and staff officers, 679 infantry, and 46 artillery. This force is formed into a regiment of infantry consisting of 3 battalions of 4 companies each, a battalion of infantry, and a battery of artillery. The number of adults in the State liable to serve is 79,219.

The State appropriation, 1894, was \$4,000. The Federal appropriation, 1894, amounted to \$3,486.48.

Artillery carry 2 3-inch wrought-iron rifles, Springfield rifles, and sabers. Infantry use Springfield rifles. Camp equipment consists of 72 wall and 1 hospital tent. Armories are hired. There are arsenals at Watertown, Pierre, and Rapid City. There are some Sons of Veterans independently organized, and not recognized by the State.

The force can be concentrated from the several armories within about twelve hours at Lake Preston or Aberdeen. About 75 per cent. would turn out for sixty days.

**Tennessee.**—The authorized strength of the Tennessee National Guard is not limited. The actually organized force includes 18 general and staff officers, about 1,350 infantry, and 100 artillery. This force is formed into a brigade consisting of 2 regiments, 2 battalions, and 2 unattached companies of infantry; also a battery and

2 detachments of artillery. Brigade headquarters are at Memphis. The number of adults in the State liable to serve is 180,000. Encampments occupy ten days.

The State appropriation, 1894, was \$15,000. The Federal appropriation, 1894, amounted to \$10,351.35.

Carbines and sabers are provided for cavalry purposes. Artillery carry 4 3-inch M. L. rifles, 2 Napoleons, 3 Gatlings, and a mountain howitzer. Infantry use the Springfield rifle. Camp equipage consists of 70 wall, 100 common, and 2 hospital tents. Companies drill once a week. Armories are rented, the smaller ones being used as club rooms. There is no State arsenal; stores are kept at the Capitol. Military instruction is given to cadets at 9 of the largest educational institutions in the State, including the State University. Cadet rifles and equipments are furnished from the Federal supply. A Federal officer is on duty for drill at the 3 largest institutions. The force can be concentrated within twenty-four hours at Memphis, Nashville, or Chattanooga. About 90 per cent. would turn out for sixty days.



COL. WENDELL P. BOWMAN,  
1st Regiment, Pennsylvania N. G.

**Texas.**—The authorized strength of the State militia, known as the Texas Volunteer Guard, is 3,000. The actually organized force includes 32 general and staff officers, 252 other officers, 2,250 infantry, 290 cavalry, and 110 artillery. This force is formed into a division of 2 brigades, each brigade consisting of 3 regiments of infantry. A regiment of cavalry, a battalion of artillery, and a battalion of colored infantry are unattached. The headquarters of the division are at Austin. Brigade headquarters are at Austin and Plainview. There is a signal corps, partly organized, with equipment. The number of adults in the State liable to serve is 300,000. Encampments occupy eight to nine days.

The State appropriation, 1894, was \$20,000. The Federal appropriation, 1894, amounted to \$12,939.

Cavalry are armed with Springfield carbines and sabers. Artillery carry 3-inch rifles and Gatling guns. Infantry use the Springfield rifle. Camp equipage consists of 595 wall, 60 common,

and 16 hospital tents. Companies drill once a week. There are no State armories. The State arsenal is at Austin. The independent commands consist of 7 unassigned companies in different sections of the State.

The whole force can be concentrated within sixty hours at Austin, Houston, Fort Worth, Dallas, Longview, or Jefferson. At least 80 per cent. would turn out for sixty days.

**Utah.**—The authorized strength of the National Guard of Utah is 4,691. The actually organized force includes 28 general and staff officers, 726 infantry, 140 cavalry, 105 artillery, and 23 members of a mounted signal corps. This force is formed into a brigade consisting of 2 regiments of infantry, 3 troops of cavalry, and 2 batteries of light artillery. The signal corps is a distinct organization. Headquarters of the brigade are at Salt Lake City. The number of adults in the State liable to serve is 25,000. Encampments occupy eight days.

There is an annual State appropriation of \$1,500. The Federal appropriation is \$3,000 per annum.

Cavalry armament includes Springfield carbines, Colt's revolvers, and sabers. Artillery carry 8 B. L. rifled cannon and 2 Gatling guns. Camp equipage consists of 50 wall, 20 common, and 2 hospital tents. Infantry use the Springfield rifle. Companies drill once a week. Drill rooms are usually rented. There are no arsenals in the State. Stores are kept at Fort Douglas.

The entire force can be concentrated within thirty hours at Ogden, Salt Lake City, or Provo. About 70 per cent. would turn out for sixty days.

**Vermont.**—The authorized strength of the Vermont National Guard is 790. This is also the organized strength, and includes 24 general and staff officers, 637 infantry, 80 artillery, and 49 cadets. This force is formed into a brigade, which consists of a regiment of 3 infantry battalions, a battery of light artillery, and a partly independent command of artillery cadets. Brigade headquarters are at Brattleboro'. The companies are distributed throughout the State. Special arrangements are made for hospital and ambulance service. The number of adults in the State liable to serve is 44,164. Encampments occupy six days.

There is no specific State appropriation. The annual amount is usually about \$15,000. The Federal appropriation in 1893 amounted to \$3,486.48.

Artillery carry 4 new 3'2-inch steel B. L. rifled guns, also sabers. Infantry use the Springfield rifle. The camp equipage is adequate. Companies drill once a week. Rooms are hired for drill purposes. There is an arsenal at Montpelier.

The infantry force can concentrate in about twelve hours at any of the principal cities; artillery within seven hours. About 95 per cent. would turn out for sixty days.

**Virginia.**—The authorized strength of the State militia, known as the Virginia Volunteers, is 5,176. The actually organized force includes 10 general and staff officers, 336 other officers, 2,391 infantry, 191 cavalry, 167 artillery, and 204 naval militia. This force is formed into a brigade of infantry, with headquarters at Richmond, a regiment of cavalry, consisting of 5



troops, and a battalion of artillery. The infantry brigade consists of 4 regiments. There are 4 unattached infantry battalions. The number of adults in the State liable to serve is 220,000. Encampments occupy ten days.

The State appropriation, 1894, was \$11,242.57. The Federal appropriation, July, 1894, amounted to \$10,351.35.

The cavalry arm is the Springfield carbine. Sabers are also carried. For artillery use there are 4 12-pounder and 4 6-pounder brass guns, also 12 3-inch iron rifled pieces. Artillery carry sabers. Infantry use the Springfield rifle. Camp equipage consists of 65 wall and 30 common tents. Companies drill once a week. There are 4 armories at Richmond and 5 in other cities set apart for volunteer use. There is an arsenal at Lexington, and a bell house at Richmond is used for store purposes.

About 60 per cent. of the force can be concentrated at Richmond in twelve hours, and about 25 per cent. additional within eighteen hours. From 80 to 95 per cent. would turn out for sixty days.

**Washington.**—The authorized strength of the Washington National Guard is 2,343. The actually organized force includes 27 general and staff officers, 82 other officers, 808 infantry, 120 cavalry, and 42 artillery. This force is formed into a brigade, with headquarters at Spokane. The brigade consists of 1 regiment and 1 battalion of infantry, 1 cavalry battalion of 4 troops, and 1 battery of light artillery. Men in infantry regiments are detached for signal duty. The number of adults in the State liable to serve is 86,156. Encampments occupy nine days.

The annual State appropriation is \$40,000. The Federal appropriation, 1894, amounted to \$3,450.45.

The cavalry arm is the Springfield carbine, with saber and pistol. Infantry use the Springfield rifle. Camp equipage is ample. Companies drill once a week. All drill halls are rented. There are no arsenals in the State.

The whole force can be concentrated within fifty hours. The infantry regiment and cavalry troops can be assembled within twenty-four hours. Between 65 and 70 per cent. would turn out for sixty days.

**West Virginia.**—The authorized strength of the West Virginia National Guard is 1,438. The actually organized force includes 21 general and staff officers, 81 other officers, and 789 infantry. This force is formed into a brigade, consisting of 2 regiments of infantry, with headquarters at Parkersburg. The number of adults in the State liable to serve is not officially reported. Encampments occupy six days.

The annual State appropriation is \$15,000. The Federal appropriation, 1894, amounted to \$5,175.67.

Springfield rifles are in use. Camp equipage consists of 287 tents of all kinds, including 6 for hospital use. Companies drill once a week. Rooms are rented by companies for drill purposes. There are no arsenals in the State.

The whole force can be concentrated within twenty-four hours at Charleston or Grafton. About 80 per cent. would turn out for sixty days.

**Wisconsin.**—The authorized strength of the Wisconsin National Guard is 3,081. The actual-

ly organized force includes 35 general and staff officers, 165 other officers, 2,523 infantry, 37 cavalry, and 54 light artillery. There is no brigade organization. The force consists of 4 regiments of infantry, 1 troop of cavalry, and 1 light battery. The headquarters of one infantry regiment, the troop of cavalry, and the battery of artillery are at Milwaukee. A few men in infantry regiments are trained for signal purposes. The number of adults in the State liable to serve is 375,601. Encampments occupy seven days.



COL. HENRY L. TURNER.  
1st Regiment, Illinois N. G.

The amount disbursed for State military purposes, 1894, was about \$100,000. The Federal appropriation is \$10,351.35 per annum.

Cavalry carry the Springfield carbine, revolver, and saber. Artillery armament includes 2 3-inch rifles and 2 Gatling guns. Camp equipage includes 227 wall tents, 3 common, 3 miscellaneous, and 13 hospital tents. Companies drill three times a month. There are 37 company armories. They are all rented. There are no arsenals in the State. Surplus stores are kept in the Capitol at Madison.

The entire force can be concentrated at West Superior or Marinette within fifteen hours; at other prominent points within twelve hours. Ninety per cent. would turn out for sixty days.

**Wyoming.**—The authorized strength of the Wyoming National Guard is not limited by law. The actually organized force is 450. This force consists of a regiment of infantry, with headquarters at Evanston. The number of adults in the State liable to serve is 12,000. The State appropriation for two years ending March 31, 1895, was \$7,200. The Federal appropriation, 1894, amounted to \$2,587.83. Two 3-inch steel guns are available for artillery service. Infantry use the Springfield rifle. No official report on camp equipage is available. Companies drill once a week. There are no armories; drill halls are rented. There are no arsenals in the State.

The force can be concentrated within a few hours. About 75 per cent. would turn out for sixty days.

**Summary.** *Strength.*—The authorized strength, which represents the force available

if every officer and enlisted man allowed by law were commissioned or enlisted, varies from 15,000 in New York to 450 in Idaho. In 5 States and Territories there is no fixed limit to the strength. These States and Territories include Tennessee, Oklahoma, Arkansas, Wyoming, and Nevada.



COL. ALONZO B. COIT,  
14th Regiment, Ohio N. G.

**Infantry.**—The 3 States having the largest infantry force available at the present time for active service are New York, with 12,159; Pennsylvania, with 7,638; and Ohio, with 5,125. The remainder of the States having over 3,000 infantry ready for the field are Massachusetts, 4,302; New Jersey, 3,369; South Carolina, 3,069; Georgia, 3,515; Illinois, 4,957; and California, 4,178.

**Cavalry.**—Six of the 9 States in the North Atlantic division have cavalry militia. The same is true of the South Atlantic division. Of the 12 States comprising the North Central division, 5 only include cavalry. Among the troops available at this time 4 of the 8 States and Territories in the South Central division and 6 of the 11 States and Territories in the Western division have this arm of the service represented. The 3 States having the largest cavalry force are South Carolina, with 1,519, white and colored; Georgia, with 589; and Texas, with 290. The States having more than 200 cavalry in addition to the 3 States already given are Massachusetts, 285, and California, 261. Several other States, including New York, are organizing an additional force of cavalry.

**Artillery.**—The only States and Territories without artillery militia, according to the latest available reports, are Maine, Delaware, Maryland, West Virginia, North and South Carolina, Michigan, Iowa, Kentucky, Oklahoma, Montana, Wyoming, New Mexico, Arizona, and Idaho.

The 3 States having the largest artillery force at present are California, 586; Ohio, 437; and New York, 416. Other States having 200 artillery or over are Massachusetts, 266; Pennsylvania, 245; Indiana, 200; Alabama, 204; Mississippi, 240; and Louisiana, 401.

**Adults liable to serve.**—The 3 States of the Union credited with the largest number of

adults liable to serve are Illinois, 852,635; Pennsylvania, 806,230; and New York, 750,000. The only other State able to furnish more than 500,000 fighting men under a special call to arms is Ohio, with 645,000.

The States able to furnish from 250,000 to 500,000 are Massachusetts, 389,529; New Jersey, 284,887; Georgia, 264,021; Indiana, 481,192; Wisconsin, 375,601; Iowa, 269,510; Missouri, 400,000; Kentucky, 361,137; and Texas, 300,000. Figures are not available under this heading for South Carolina and Oklahoma.

**Organization.**—The organized militia force in New Jersey, Pennsylvania, Mississippi, Texas, and California is formed into a division of several brigades. The force in nearly every State and Territory is brigaded. The exceptions are Maine, Georgia, Ohio, Wisconsin, South Dakota, Kentucky, Alabama, Oklahoma, Montana, Wyoming, New Mexico, Arizona, and Nevada.

**Hospital or Ambulance Corps.**—Of the 49 States and Territories, from 15 to 20 are lacking in provision for hospital and ambulance force and equipment in connection with the State militia. Those included in the last Federal report as being most serviceable are Maine, Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania—being 6 of the 9 States in the North Atlantic division; the District of Columbia, Ohio, Illinois, and Oregon.

**Signal Corps.**—Corps for signaling purposes have been organized in Massachusetts, Rhode Island, Connecticut, New York, Georgia, Montana, Colorado, Utah, and California. In 14 other States and Territories there are trained detachments ready to serve. In California one signal corps is mounted and equipped as cavalry. In Connecticut, Iowa, Colorado, and Utah the signal corps are mounted on bicycles. This last form of equipment is also used in connection with an Ohio regiment. Homing pigeons are utilized for signaling in the District of Columbia. The latest Federal report credits Massachusetts, Connecticut, and Montana with having attained the greatest proficiency in this branch of the militia service.

**Encampments.**—In 1894 officially ordered encampments of State troops took place for practice drills and other exercises in 30 States. In some of the other States companies and battalions went into camp of their own volition. According to the latest reports, 15 States have ground set apart as State property for camp exercises. During recent encampments in Vermont, New York, Pennsylvania, Wisconsin, Minnesota, and Texas regular troops were present.

**Mobilization.**—The time required for concentrating the entire command ranges, approximately, from three days in Oregon and California to twelve hours in Connecticut. This excludes the District of Columbia, where, for local service, the force could be mustered within three hours.

The percentage of the entire force that could probably be counted on to turn out for sixty days' active service, as given in the various State summaries preceding, is based on estimates furnished by commanding officers, and varies from 95 per cent. in New York, Pennsylvania, and North Dakota to 50 per cent. in Minnesota and South Dakota. The States and Territories reported as having well-developed plans prepared



to meet emergencies are the District of Columbia, North Carolina, Illinois, South Dakota, and Alabama. In numerous other States plans have been partially prepared.

**Armed Resistance.**—One reason why the synopsis of State summaries at the beginning of this article has been arranged by geographical groups is that some idea may be gained of the possibilities with reference to armed resistance on land in the event of threatened invasion.

For convenience of illustration, let it be supposed that New York city and vicinity required protection. From the statistics furnished in the introductory part of the article the aggregate strength of the National Guard within each geographical division can be easily noted. The first part of the entire force to reach threatened points in New York State would be, of course, that located within the North Atlantic division. Taking it for granted that the railroads give right of way to troops, and that no obstacles would be encountered in the matter of equipment or transportation to railroad rendezvous, and allowing twenty-four hours clear for the troops in each State to assemble at their selected points of concentration, within State boundaries, it would seem safe to say that fully 20,000 infantry, 300 cavalry, and 700 artillery, with at least 50 ordinary field pieces, 20 Gatling guns, and 8 howitzers, would be in position for immediate action within forty-eight hours of the first alarm. Of these, a large number would be ready for action within twelve hours, and more than one half within twenty-four hours. This force, equipped with at least 5,000 tents and supplemented by about 700 naval militia, would within another twenty-four hours or thereabouts be reinforced by quite two thirds of the organized militia of the South Atlantic group.

Each day thereafter, regiments, troops, and batteries of fully equipped officers and men with an ample supply of armament and ammunition, would reach their appointed rendezvous for attack or defense, those of the South-Atlantic division being closely followed by the forces comprised in the North and South Central divisions and the Western division, with the net result that in less than six days, in round numbers, from 80,000 to 90,000 infantry, from 4,000 to 5,000 cavalry, from 4,000 to 5,000 artillery, and from 2,000 to 3,000 naval militia, fully officered, armed, and equipped, would stand at the points threatened, fully prepared to support the Federal troops and engage the enemy. The difference between the organized force and the total authorized strength being over 50,000, such an emergency as the one just referred to would bring into service a sufficient number of adults in each State and Territory to protect State interests during the absence of the organized militia troops.

**Appropriations.**—The largest regular annual State appropriation (\$400,000) is made by New York. This sum does not include a number of allotments for special purposes. In 1894, other States appropriating \$100,000 or more were Massachusetts, Rhode Island, Pennsylvania, Illinois, Wisconsin, and California. The amount appropriated by Congress annually (\$400,000) is divided among the States according to the representation to which each is entitled in Congress,

and to the Territories and the District of Columbia in such proportions as the President may direct. The largest Federal allotment is that granted to New York.

**Ammunition.**—All States and Territories except North Dakota, Arizona, Oregon, and California have on hand, ready to be delivered promptly to troops on arrival at points of concentration, amounts of cavalry and infantry ammunition ranging from 600,000 rounds in New York to 10,000 each in Florida, Missouri, Washington, and the District of Columbia. In addition to these amounts nearly every company throughout the United States keeps a fairly large stock at its armory or within easy reach. The batteries of artillery are usually kept fairly well supplied with artillery ammunition, the largest quantity being for Gatling-gun purposes.

**Camp Equipage.**—Nineteen States are reported as having sufficient tentage for the present force. A similar number of States are not sufficiently well equipped. Some of these are taking steps to supply the deficiency. The above 38 States own their tent equipage. The balance of the States and Territories are not yet satisfactorily arranged for in this matter. Only a few States have complete mess outfits.

**Drills.**—The drilling capabilities of the State troops are continually improving. The interest taken in their efficiency by the Federal Government, as represented by specially detailed army officers, is producing excellent results.

In the Federal summary, 1894, it is noted that the degree of proficiency in drill attained by large bodies of troops is reported as ranging from excellent in some organizations in Massachusetts, New York, Ohio, and Pennsylvania, to poor. "The best-executed drills seem to be those of the company in close order, but little attention seems, as a rule, to have been paid to company extended order in most States. The drill of the cavalry is generally reported as being good; in some cases, excellent. The artillery drill is generally very good, and special mention is made of the proficiency of Battery A, Missouri National Guard, and of the Vermont battery. So much time is given to the ceremonies that they are generally better performed than the regular drills."

**NEBRASKA**, a Western State, admitted to the Union March 1, 1867; area, 77,510 square miles. The population, according to each decennial census since admission, was 122,993 in 1870; 452,402 in 1880; and 1,058,910 in 1890. Capital, Lincoln.

**Government.**—The following were the State officers during the year: Governor, Silas A. Holcomb; Lieutenant Governor, Robert E. Moore; Secretary of State, Joel A. Piper; Treasurer, Joseph S. Bartley; Auditor, Eugene Moore; Attorney-General, Arthur S. Churchill; Superintendent of Public Instruction, Henry R. Corbett; Commissioner of Public Lands and Buildings, Henry C. Russell—all Republicans except the Governor, who is a Populist, as is also the Adjutant General, P. H. Barry; Chief Justice of the Supreme Court, T. L. Norval; Associate Justices, A. M. Post and T. O. C. Harrison—all Republicans.

**Finances.**—The State valuation in 1895 was \$171,468,207.48, a falling off from 1894, when it

was \$183,717,498.78. The decrease is in personal property. Improved lands have increased in acreage from 17,558,533 to 18,091,963, and in value from \$61,411,598 in 1894 to \$61,817,884 in 1895. The value of railroad property and sleeping cars is placed at \$25,492,513.08. Horses are valued at \$5,019,253, and cattle at \$4,132,794. It is estimated that the taxes will be too small at 5 mills on this valuation to meet the expenses of the general fund for the coming two years, and that the floating debt at the end of that time will amount to at least \$1,400,000. The total tax for all purposes is about  $7\frac{1}{4}$  mills.

The Bureau of Labor, in the report of mortgage indebtedness for the year ending May 31, 1895, shows that the amount of incumbrances is decreasing.

The inspector of oils reports that the total received for inspection of illuminating oils in 1894 was \$10,106.40, and the salaries and expenses amounts to \$11,274.31. The gasoline fees, amounting to over \$10,000, the inspector refused to pay into the treasury, lest they might some time be demanded of him on the ground that they were illegally taken. The State then brought suit against the inspector's bondsmen. The question whether gasoline was contemplated as coming under the law had been settled in the affirmative at a former term.

The case of the State against ex-Treasurer Hill (see "Annual Cyclopædia" for 1893, page 504) and his bondsmen was tried in the spring, and the jury failed to agree. The State appealed to the Supreme Court.

**Education.**—The December apportionment of State school funds disposed of \$216,336.33, and the rate for each pupil was 61 cents. The whole number of children was 352,028. The amount apportioned in May, 1895, was \$256,996.42, and the rate per pupil was 70 cents. At that time 362,729 children of school age were listed, fully 10,000 more than the number afterward reported.

The regents of the State University, in their report to the Legislature, said that to make it adequate to the accommodation of the young men and women of the State who are flocking to it additional buildings, to cost over \$400,000, will be required. The State has appropriated only about \$25,000 toward the erection of the present buildings, which have cost between \$350,000 and \$400,000. A short course in agriculture was established, the Legislature having given for its use the Morrill fund received from the National Government. A class of 95 was sent out in June, the largest in the history of the university.

The Nebraska Wesleyan University graduated 16 at its last commencement. The original debt of \$50,700 was paid then by subscription.

**The Penitentiary.**—The joint committee of the Legislature appointed to investigate charges of cruelty and misconduct at the Penitentiary reported that no ground was discovered for the charges; but they recommended that the contract system by which the prisoners were maintained and worked should be abolished, and that the State should buy the plant of the contractor in charge and itself maintain the prisoners and manage their labor. This was decided upon, and the contractor's property, together with the

value of his unexpired lease, was appraised at \$33,400. The Board of Public Lands and Buildings appointed ex-Warden Beemer as superintendent and steward, with the power to lease convict labor. But the Governor disputed the right of the board to make the appointment, claiming that all business and the making of contracts ought to be through the warden, and that in the appointment of Beemer the board exceeded its authority by creating a new office. The matter was complicated by an application for an injunction distraining the Auditor from issuing the warrant to the contractor in payment for his plant. The board could not annul his lease until the payment was made, and appealed to the Governor to eject him, which the Governor declined to do. When this difficulty was over, the board directed ex-Warden Beemer to take control at the Penitentiary as the new contractor, but the warden, supported by the Governor, refused to admit him and would receive no supplies from him. The prisoners were kept idle while this controversy was pending. It was taken to the courts and was undecided at the end of the year.

**Charities.**—The Governor appointed a new superintendent, Dr. Abbott, for the Lincoln Hospital for the Insane, and the appointment was confirmed by the Senate and was to take effect March 10. But the superintendent in charge, Dr. Hay, refused to retire, claiming that by the statutes he is appointed for six years, and hence there was no vacancy. The Governor declared that he would install his appointee by force, if necessary, and the superintendent applied for an injunction to prevent it. In April the Governor asked Dr. Hay to resign, and intimated that in case he did not, charges would be preferred against him and he would be removed for cause. Charges were brought and the superintendent's counsel laid them before the Board of Public Lands and Buildings with a request that the board grant a hearing on them. The charges—which were for extravagant management, negligence, and the permitting of abuse of patients by subordinates—were, however, heard by the Governor under protest from Dr. Hay. Dr. Hay presented statements to refute the charge of extravagance, showing that the Lincoln Hospital for the Insane is maintained at less *per capita* than 16 asylums in other States, but one, the Colorado institution at Colorado Springs, costing less. The Governor also made an appointment of a new assistant physician, and this was resisted on the same grounds as the other. The Attorney-General asked the courts to settle the controversy. There was similar trouble about the control of other State institutions.

**Agriculture.**—The cultivation of beets for sugar was greatly stimulated in 1895 by the action of the Legislature, and will be still further increased by the introduction of improved processes of manufacture. Since and including the year 1891 the sugar factory at Grand Island has paid for beets an aggregate of \$485,303. Of that sum the beet growers in the autumn of 1895 received \$180,000, though much of the crop failed to bring the maximum price; but numerous instances were reported where beet growers realized over \$45 an acre net profit. A



much larger acreage was devoted to the purpose than formerly, and it was estimated that the factories in the State would have turned out 4,500,000 pounds in the season. Local organizations for promoting the culture of beets have been formed, and a convention was appointed to be held in Lincoln Feb. 5 and 6, 1896.

The cultivation of alfalfa has been highly successful in parts of the State.

The corn crop for the year was estimated at 18 bushels to the acre.

The work of irrigation has made good progress. Many private plants are established with wells and windmills. The extent of irrigating canals is summarized by the State engineer as follows: There are 372 canals either constructed or under construction, having a total length of 1,908 miles, of which 1,156 are completed. These canals, when finished, will have cost \$2,015,336, of which amount \$1,271,808 has already been expended. The number of acres under ditch will be 866,180.

A law for dividing the State into irrigation districts and creating a State Board of Irrigation was passed, and all persons who have built ditches are required to describe them in detail in an application to the board, and state how much water they want.

A large irrigation convention was held in Sidney in December.

**Omaha.**—The bill for a new board of fire and police commissioners, passed by the Legislature, and applicable to Omaha, was resisted as invalid. The Governor vetoed the bill, which was passed over the veto; and he refused to act on the appointing board, of which he was *ex officio* a member. The question came before the Supreme Court, and the law was declared valid.

**The Relief Commission.**—The report of the commission appointed to distribute the charity contributed for the relief of destitute citizens, finished its work and made its report in August. Following are extracts from it.

It was found on taking up the work of investigating the loss and destruction of crops and the destitution of citizens from the hot winds of July last, that of the 91 counties of the State, 61 have been affected by the calamity, and that in 26 the crops had been totally destroyed. An imaginary line from Furnas County, on the southern border of the State, north-easterly to Knox County, on the Missouri river, comprehends on the west of it the counties referred to. It is believed that the agricultural loss to this section was equal to \$100,000,000. In July, 1894, all crops promised an abundant harvest, and not less than 200,000,000 bushels of corn were to be considered as the entitled product, of which there were gathered not more than 13,000,000 in the entire State. Valuable contributions in kind were forwarded from various localities on the Ohio river in the East, from sympathizing sections of the South, particularly Georgia and Louisiana, and especially from Illinois and from Iowa, from the New England States, California, and Oregon. The most weighty obligation which rests on the commissioners is that due to the officers of the railway lines throughout the State for free transportation and remitted rates of freight. The telegraph and telephone companies contributed each its service. The citizens of Omaha and Lincoln provided storage for all supplies delivered and awaiting transportation there. The Senators and Representatives to Congress and the Commissioner of Agriculture at Washington supplied 92,000 packages of garden seeds. The Merchants' Exchange at St. Louis and

the Board of Trade at Chicago, commercial bodies of large importance, extended their most substantial sympathies in liberal cash contributions.

The financial statement shows receipts of \$79,449.63.

The Committee on Appropriations of the Connecticut Legislature proposed to send \$5,000 from the State treasury, and other States offered assistance in the same way; but these proposals were declined by the Governor, and the work was left to voluntary contribution and the aid of the Nebraska Legislature.

**The Barrett Scott Case.**—Several men were arrested on suspicion of being connected with the horrible lynching of the defaulting treasurer of Holt County (see "Annual Cyclopædia" for 1894, page 505), and 3 were held for trial. The case was carried to Boyd County, in order to remove it from the scene of excitement. Some of the accused were identified by the murdered man's little daughter and a young lady, both of whom were with Mr. and Mrs. Scott in the carriage when he was taken from it; and they were shown to have been members of a vigilance committee and to have been away from home at the time, and together; but they swore alibis for themselves and for one another, and the jury failed to convict.

**Legislative Session.**—The regular biennial session began Jan. 1 and ended April 5. The members were divided among parties as follow: Senate—25 Republicans, 7 Populists, and 1 Populist-Democrat; House—4 Democrats, 72 Republicans, 4 Populists, and 19 Populist-Democrats.

John M. Thurston was elected United States Senator to succeed Charles F. Manderson.

Of 130 bills that were passed, 9 were vetoed by the Governor, and 3 of these were passed over the veto.

An appropriation of \$1,375,479.21 was made for the current expenses of the government for the two following years, and one of \$26,722.31 for the payment of miscellaneous claims against the State, and another for the same purpose of \$80,833.02. For salaries of officers of the State government, State institutions and departments \$808,075 was appropriated. For defending in the Federal court the maximum-rate law (see "Annual Cyclopædia" for 1893, page 503, and for 1894, page 505), an appropriation of \$21,648.75 was made. For payment of the Legislature \$85,000 was set apart, and an additional \$40,000 for incidental expenses. An appropriation of \$50,000 was made for relief of the sufferers by the drought, and an act was passed to give \$200,000 to provide seed and feed and for its distribution.

The registration law was amended, making it apply only to cities of over 7,000 population, and providing for three days instead of five for general registration.

Amendments to the election laws prescribed the manner of voting for amendments to the Constitution, of designating newspapers to publish proposed amendments, and of placing on the official ballot names of candidates nominated by petition.

The State banking law was amended so as to require all State banks to be chartered under the seal of the State by the State banking

board. Four public statements are required annually. Two directors are required to be present when a bank is examined. Bank examiners' bonds are raised from \$10,000 to \$25,000. Instead of uniform fee for examination, fees are graded according to capital of banks. Banks must keep 15 per cent. of deposits on hand, and in cities of 20,000 population or over 20 per cent. Incorporated banks are prohibited from buying or holding any part of their stock. All banks are required to set apart one tenth of their net proceeds until they have a surplus of at least 20 per cent. No bank can hold any real estate, except bank building and fixtures, to exceed one third of its capital, unless taken to satisfy a debt, and it must then be sold within five years. Notes by any bank or banker or partnership can not be carried as an asset. No dividend can be made where any bad debt or loss is carried as an asset.

It was made unlawful for any railway to use any car or engine not equipped with automatic couplers after Jan. 1, 1898, and to run any train not having enough automatic brakes so that the engineer can control the train without requiring brakemen to go between the cars.

Corporations working under the mutual assessment and other similar plans for life and accident insurance must give bonds and show applications for at least 250 lives, for at least \$1,000 each, and must be licensed by the Auditor, and make annual statements to him. Accumulations shall be invested in United States bonds, State or municipal bonds, or in notes secured by real-estate mortgage or in district irrigation bonds not to exceed 40 per cent. of the value thereof, and deposited with the Auditor.

The statute relating to the formation of new counties was so amended as to make 450 square miles the minimum territory, and the votes necessary to the establishment of a new county a majority instead of a three-fifths vote.

A bounty of  $\frac{1}{2}$  of 1 cent a pound was ordered for the manufacture of sugar by established factories and  $\frac{1}{2}$  to those hereafter established, and the same for chicory. The sugar beets must have been paid for to the grower at a rate not less than \$5 a ton, and the chicory at not less than \$10.50. The sugar must contain not less than 90 per cent. of crystallized sugar, and the chicory must be 99 per cent. pure. This law is to be in force for three years.

It was enacted that any "person making or keeping for sale any imitation butter or cheese shall be fined not less than \$10 nor more than \$20, but the manufacture of substitute butter not colored shall not be prohibited. Each package shall be stamped 'imitation butter.'"

Other acts were:

Providing for boards of health in cities of the second class and villages.

Allowing cities of the second class and incorporated villages to issue bonds to the amount of 5 per cent. of the assessed value of their property for extension or enlargement of their waterworks.

Authorizing councils in cities of the second class and village boards by ordinance to levy a special license tax not to exceed \$5 per annum upon every fire insurance company transacting business in such city or village, the tax so raised to be used for the support of volunteer fire departments.

Providing for boards of park commissioners in

cities, and empowering cities to issue bonds for park purposes.

Regulating the practice of dentistry.

Raising the age of consent from fifteen to eighteen years.

Imposing a penalty of one to ten years' imprisonment for cattle stealing, buying stolen cattle, or harboring cattle thieves.

Imposing a fine of \$10 to \$50 for the manufacture, sale, or giving away of cigarettes or cigarette materials.

To protect Mongolian pheasants.

Making daylight burglary a felony.

Imposing heavy fines on landowners who allow the Russian thistle to grow upon their lands.

Providing for the establishment of a branch soldiers' home at Milford.

Twelve constitutional amendments were proposed, the principal of which were:

Providing that all votes shall be by ballot, or such other method (voting machine) as may be prescribed by law, the secrecy of voting to be retained.

Providing for the investment of the permanent school fund in registered school district bonds.

Authorizing the Legislature to provide that in civil actions five sixths of the jury may render a verdict.

Authorizing three fifths of both houses to change salaries of State officers.

Adding 3 railroad commissioners to the list of State officers.

Authorizing the Legislature to increase the number of supreme and district judges.

Limiting the number of State officers, except on concurrence of three fourths of each House.

Authorizing the Legislature to create an appellate court.

Among joint resolutions were the following:

That Nebraska shall hereafter, in a popular sense, be known and referred to as the 'Tree-planters' State.

Authorizing the Governor to appoint 3 commissioners to act in conjunction with a like commission of the State of South Dakota in ascertaining the true and correct boundary line between Nebraska and South Dakota as far as the same may be the boundary between the counties of Clay in South Dakota and Dixon in Nebraska.

Asking Congress to provide for payment to all Union soldiers who were confined in rebel prisons during the war a pension of \$2 a day during the time so confined and \$12 a month for the remainder of their lives.

That the Legislature of Nebraska hereby declares the flower commonly known as "golden rod" to be the floral emblem of the State.

**Political.**—A justice of the Supreme Court was to be chosen this year, and 2 regents of the State University. At the Democratic State Convention, Aug 22, in Omaha, the free-silver element was in control, and the resolutions declared in favor of free and unlimited coinage of gold and silver at the ratio of 16 to 1. The candidates named were: For Justice, Charles J. Phelps; for Regents, A. T. Blackburn and Robert Kittle. A delegate attempted to place the following before the convention as a minority report:

We recommend the administration of President Cleveland, as being able, patriotic, and honest, and reaffirm the platform adopted by the Democratic National Convention at Chicago in 1892.

Scarcely had the first word been uttered when the whole convention was protesting. There was such a roar that order was not established for



ten minutes, when the offending resolution was tabled without comment.

The second Democratic State Convention, called by the "bolters," and made up of the Administration, antisilver Democrats, met in Lincoln, Sept. 5, with 631 delegates. The resolutions, which approved the Administration and declared for "sound money," were unanimously adopted. The following nominations were made: For Supreme Judge, T. J. Mahoney; for Regents of the State University, W. S. Ashby and John H. Ames.

The Republican Convention, in Lincoln, Oct. 3, nominated for Justice T. L. Norval; and for Regents C. H. Morrill and H. L. Goold. The platform denounced the Wilson tariff law and asked the enactment of another "McKinley bill"; favored the use of both gold and silver as money, and demanded a national currency of equal debt-paying power; denounced the Democratic administration's supine neglect of American interests in foreign lands; expressed sympathy with the Cuban revolutionists; pledged the support of the party to irrigation interests; and congratulated the people on the re-enactment of the sugar-bounty law.

The Populist State Convention opened in Lincoln Aug. 28. The platform reaffirmed the party principles. Much discussion was caused by a resolution in reference to the A. P. A., and the matter was finally settled by the adoption of a resolution deprecating the bringing of religious issues into politics. Samuel Maxwell was nominated for Justice, and Ella W. Peattie and James H. Bayston for Regents.

The Prohibitionists nominated A. G. Wolfenbarger for Justice, and J. J. Bryant and Anna R. Woodbey for Regents.

The Republicans elected their candidates. Following were the returns for Justice of the Supreme Court: Norval, Republican, 79,516; Maxwell, Populist, 70,578; Mahoney, Administration Democrat, 18,638; Phelps, Free-silver Democrat, 10,214; Wolfenbarger, Prohibitionist, 4,344. Messrs. Goold and Morrill, Republican, were elected by votes of 81,847 and 80,962 respectively. Of the district judges elected at the same time, 20 were Republicans, 2 Democrats, 3 Populists, and 3 Populist-Democrats.

**NETHERLANDS**, a constitutional monarchy in western Europe. The First Chamber of the States General has 50 members, elected for nine years by the provincial councils, one third of them retiring every three years. The Second Chamber is composed of 100 members, elected directly for four years by popular suffrage, every Dutch male citizen being entitled to a vote if he pays 10 guilders in direct taxes above the limit of partial exemption or has a separate lodging. One half of the members are elected every two years. The reigning sovereign is Queen Wilhelmina, born Aug. 31, 1880, whose mother, Queen Emma, widow of the late Willem III, acts as regent during the daughter's minority. The ministry constituted May 7, 1894, was composed as follows: President of the Council and Minister of Foreign Affairs, Dr. J. Roell; Minister of the Interior, Dr. S. van Houten; Minister of Finance, Dr. J. P. Sprenger van Eyk; Minister of Justice, Dr. W. van der Kaay; Minister of the Colonies, J. H. Bergsma; Minister of Marine,

Jonkheer H. M. van der Wyck; Minister of War, Lieut.-Gen. C. O. H. Schneider; Minister of Waterstaat, Commerce, and Industry, P. W. van der Sleyden.

**Area and Population.**—The area of the kingdom is 12,648 square miles. The population on Dec. 31, 1893, was computed to be 4,732,911, consisting of 2,341,484 males and 2,391,427 females. The number of marriages in 1893 was 34,311; of births, 159,005; of deaths, 90,372; excess of births, 68,633. The number of emigrants in 1893 was 4,820, all destined for the United States, comprising 2,262 adult males, 1,248 women, and 1,310 children. Of the total population 32½ per cent. is found in the cities and large towns. The population of Amsterdam at the end of 1893 was 446,657; of Rotterdam, 228,597; of the Hague, 174,790; of Utrecht, 91,070.

**Finances.**—The budget for 1895 makes the total revenue 128,311,870 guilders, of which 11,910,000 guilders come from the land tax, 11,712,000 guilders from the personal tax, 6,870,000 guilders from the tax on incomes from investments, 4,523,000 from the tax on professional incomes, 26,400,000 guilders from the tax on alcoholic drinks, 15,995,000 guilders from other excise taxes, 19,815,000 from stamps, registration, and succession duties, 5,811,250 guilders from customs, 7,895,000 guilders from the post office, 1,336,500 guilders from telegraphs, 2,355,000 guilders from domains, 661,400 from the lottery, 130,000 from shooting and fishing licenses, 214,820 guilders from the assay tax on gold and silver articles, 1,400,000 guilders from pilot dues, 5,175 guilders from mining royalties, and 7,327,625 guilders from other sources. The total expenditures are estimated at 135,742,280 guilders, of which 821,000 guilders are for the royal household, 667,860 guilders for the state authorities, 5,287,063 guilders for justice, 13,446,889 guilders for the interior, 15,412,305 guilders for the navy, 21,402,187 guilders for the army, 35,188,309 guilders for the national debt, 19,158,535 guilders for finance and worship and payments to communes, 1,377,023 for central administration of the colonies, 22,125,728 guilders for commerce, industry, railroads, and canals, and 50,000 guilders for unforeseen expenses. The budget for 1896 estimates the expenditures at 138,300,000 guilders, and anticipates a deficit of 7,500,000 guilders.

The capital of the public debt in 1895 was 1,076,220,050 guilders, of which 695,000,000 guilders pay 2½ and 375,000,000 guilders 3½ per cent. The paper money amounts to 15,000,000 guilders.

**Army and Navy.**—The peace effective of the permanent army is 1,880 officers and 26,905 men, with 5,595 horses. The army is recruited partly by voluntary enlistment for six or eight years, one third of the troops being raised in that way, while the rest are drawn from the militia levies, of which the annual contingent is 10,400. The land militia serve seven years and the naval militia five years. The Chamber, on March 14, 1895, passed a bill for supplying the army with the Mannlicher rifle of 6.5 millimetres caliber.

The naval force consists of 9 armored seagoing vessels of 2,000 to 5,400 tons displacement ("Konink der Nederlanden," "Koninkin Wilhelmina," "Prins Hendrik," "Evertsen," "Kortenaar," "Piet Hein," "Guinea," "Schorpioen," and "Stier"), with 4½ to 8 inches of armor and 1 to

8 heavy guns, the largest having a caliber of 28 centimetres; 3 other squadron vessels incomplete ("Holland," "Zeeland," and "Friesland"); 13 monitors having 5½ inches of armor and 1 or 2 28-centimetre guns; 22 gunboats, besides 5 river gunboats; and 6 frigates and 2 corvettes.

**Commerce.**—The imports and exports in 1894 were divided between different countries as follows, values being given in guilders (1 guilder = 40 cents):

COUNTRIES.	Imports.	Exports.
Great Britain.....	246,100,000	260,800,000
Germany.....	287,400,000	556,800,000
Belgium.....	161,100,000	155,200,000
France.....	21,500,000	11,900,000
Sweden and Norway.....	21,300,000	2,400,000
Russia.....	175,300,000	5,200,000
Roumania.....	33,600,000	100,000
Turkey.....	11,500,000	3,800,000
Italy.....	5,800,000	5,100,000
Spain.....	29,000,000	1,000,000
Dutch East Indies.....	225,000,000	53,800,000
British East Indies.....	43,800,000	700,000
Africa.....	8,200,000	15,700,000
United States.....	132,100,000	22,200,000
Brazil.....	5,500,000	.....
Peru and Bolivia.....	14,500,000	.....
Other countries.....	39,100,000	14,000,000
Total.....	1,460,800,000	1,114,700,000

Of the total value of the imports, 440,200,000 guilders represent articles of food and drink, 526,200,000 guilders raw materials, 239,000,000 guilders manufactured articles, and 240,900,000 guilders miscellaneous articles. Among the exports alimentary substances amounted to 384,400,000 guilders, raw materials to 366,000,000 guilders, manufactures to 236,500,000 guilders, and miscellaneous merchandise to 125,100,000 guilders. The imports of precious metals were 14,400,000 guilders and exports 2,700,000 guilders. Iron and steel and their manufactures were imported in 1893 to the amount of 122,219,000 guilders and exported to the amount of 75,547,000 guilders; imports of textile fabrics and materials were valued at 130,513,000 and exports at 161,332,000 guilders; cereal imports at 213,648,000 and exports at 116,383,000 guilders; imports of coal at 44,418,000 guilders and of petroleum at 9,162,000 guilders; imports of rice at 46,240,000 and exports at 12,089,000 guilders; imports of coffee at 35,013,000 and exports at 19,932,000 guilders; imports of butter at 1,917,000 and of margarine at 23,923,000 guilders and exports of butter at 13,003,000 and of margarine at 43,842,000 guilders; exports of cheese at 10,541,000 guilders; imports of drugs at 181,569,000 and exports at 145,926,000 guilders; imports of wood at 28,470,000 and exports at 15,773,000 guilders; imports of skins at 21,397,000 and exports at 19,738,000 guilders; imports of copper at 48,562,000 and exports at 40,978,000 guilders; exports of flax at 16,796,000 guilders; imports of oil seeds at 34,485,000.

**Navigation.**—The Dutch mercantile navy in the beginning of 1894 numbered 442 sailing vessels, of 118,590 tons, and 154 steamers, of 176,646 tons. There were entered in the ports of Holland during 1894 the total number of 1,451 sailing vessels, of 1,109,014 cubic metres, and 8,302 steamers, of 18,455,556 cubic metres, and cleared 1,597 sailing vessels, of 1,200,535 cubic metres, and 8,144 steamers, of 18,150,999

cubic metres. Of the sailing vessels entered 1,138 and of those cleared 1,162 carried cargoes, and of the steamers 7,910 were entered and 5,501 were cleared with cargoes. Of the vessels entered 625 sailing vessels, of 309,480 cubic metres, and 2,192 steamers, of 5,042,252 cubic metres, were of Dutch nationality.

**Communications.**—The railroads in operation on Jan. 1, 1894, had a total length of 1,815 miles, over half of which belong to the Government. The total length of the canals is 1,907,170 miles and of other navigable waters 3,000.

The State telegraphs in 1894 had a total length of 3,465 miles, with 12,395 miles of wire. The number of dispatches sent in 1894 was 4,423,739, of which 2,247,192 were internal, 2,137,818 international, and 38,729 official. The receipts were 2,951,079 francs; the expenditures, 4,459,380 francs for ordinary and 258,959 francs for extraordinary purposes.

The number of letters sent through the post office in 1894 was 61,236,000 in the internal and 21,198,000 in the foreign service; of postal cards, 31,907,000 internal and 5,243,000 foreign; of printed inclosures, 105,220,000 internal and 514,000 external; of registered letters and postal orders, 3,019,000 internal, remitting 304,321,000 francs, and 514,000 external, remitting 110,357,000 francs.

**Legislation.**—The bill for the reform of the franchise, framed by Minister of the Interior Van Houten, goes almost as far as the more radical measure of Tak van Portvliet, which was rejected in 1892. That bill proposed to increase the number of electors to 800,000, more than double the existing number, by conferring the franchise on every Dutchman twenty-three years of age who can show that he is not a burden on the community. The bill of a minister must be submitted to the Council of State before it is offered in the Second Chamber; but a bill may be proposed in the Second Chamber by any one of its members, and, like a ministerial measure, it must first be discussed in committee before it comes up for public debate. The First Chamber must either adopt in its entirety a measure that has gone through the Second Chamber or reject it, but can not amend its provisions. The electoral law of 1850 fixed the maximum electoral impost at 112 guilders for the capital and 20 guilders for the rural communes, but the amount could be decreased according to local conditions. By the partial revision of the Constitution in 1887 the electoral tax was lowered and made invariable, increasing the electorate from 140,000 to 300,000. This measure was admitted to be provisional only, and the Clerical ministry that came into power in 1888 promised an extension of the suffrage; but it failed to keep the promise. It was overthrown and Tak van Portvliet, the Radical reformer, entered the ministry three years later with a scheme to confer the right to vote upon every true-born Dutchman twenty-three years of age, who could furnish external evidences of capacity and well-being. Owing to the vagueness of this condition a long and exciting controversy followed, and Mr. van Houten, who drew up the bill, adopted the views of the Moderate Liberals, who combined with the Conservatives and under the name of the Anti-Revolutionary



tionary party insisted that the evidences of well-being should consist in the payment of certain specified taxes, not the fact that a citizen is self-supporting. The Anti-Revolutionaries pictured the country as falling a prey to the Socialists and Anarchists in the event of the admission of 500,000 new electors. Mr. Tak accepted various amendments to meet the wishes of the Moderates, but resigned when the Chamber was on the point of deciding that a lodging or habitation that qualifies for the franchise must consist of not less than two rooms, thus shutting out a large proportion of the competent workingmen. The Anti-Revolutionists gained the victory at the polls in 1894, and their interpretation of the Constitution was therefore embodied by Mr. van Houten in the new electoral bill. The bill fixes the electoral age at twenty-five; reduces the property qualification to the payment of a land tax of 1 guilder; and admits a new category of voters, consisting of householders or lodgers who pay a certain rent, citizens who own or rent boats of 30 tons burden, men whose earnings are at least 275 guilders a year or who have 50 guilders in the savings bank, and those who follow certain specified professions or occupations. The same conditions qualify electors for the provincial states and the communal councils.

The Socialists were left almost unrepresented in the new Dutch Chamber by the defeat of their leader, Domela Nieuwenhuis; but some of their principles are inscribed in the programme of the Radicals that follow the guidance of Tak van Portvliet, who proclaim it to be the duty of the state to institute social reforms and to protect the workingman. To appease this element the Government in August, 1895, appointed a commission composed of 25 members representing all shades of political opinion, to report on the best system of state pensions for old and infirm members of the working class. The immediate subjects presented to the States General by the speech from the throne opening its session on Sept. 17 are the reform of the personal tax and the new electoral bill.

**The Amsterdam Exhibition.**—An international exhibition was held in the summer of 1895 on the grounds originally prepared for the exhibition of 1883. The plan at first was to collect exhibits of hotel equipments and facilities of travel, and thus the designing and furnishing of hotels and *cafés* and the equipment of railroads and ships came to be the prominent features of the exhibition, though electrical inventions and various industries were also well represented. One striking exhibit was a restaurant in which the guests were served by means of electrical contrivances without the help of waiters. Another feature was a reproduction of the life and scenes of old Holland.

**The Dutch East Indies.**—The Asiatic possessions of the Netherlands comprise the populous island of Java and other large and small Malaysian islands, having an aggregate area of 719,674 square miles and 33,121,300 inhabitants. Java and Madura, with an area of 50,848 square miles, had in 1893 a population of 24,642,985. Batavia, the capital, had 110,669 inhabitants; Surabaya, 147,339; Surakarta, 99,258. The European population of Java and Madura was

48,649, and there were 248,484 Chinese and 16,123 Arabs. The other possessions, called the outposts, are the island of Sumatra, southern Borneo, Riouw, Banka, Billiton, Celebes, Menado, Amboine, western New Guinea, Timor, and Bali and Lombok, having an aggregate population of 8,478,300. The Governor General of the East Indies is assisted by a council of five members. Jonkheer C. H. A. van der Wyck was appointed Governor General in July, 1893.

The budget for 1895 makes the total revenue 128,041,045 guilders, of which 21,825,863 guilders are derived from sales of coffee, 143,550 guilders from sales of quinine, 5,325,137 guilders from sales of tin, 17,668,000 guilders from the opium monopoly, 15,235,000 guilders from customs, 17,164,250 guilders from the land tax or tithes, 8,557,000 guilders from the salt duty, 1,792,000 guilders from posts and telegraphs, 9,573,000 guilders from railroads, and 30,757,245 guilders from various sources. The total expenditure was estimated at 138,431,354 guilders.

The army of Netherlands India on Jan. 1, 1895, was made up of 15,867 European and 20,738 native soldiers. There were 427 staff and specially detailed officers, with 2,138 men; 731 officers of infantry and 29,638 men; 31 cavalry officers and 883 men; 129 officers of artillery and 3,287 men; and 64 engineer officers and 659 men; total, 1,382 officers and 36,605 subofficers and privates.

The naval force consists of 1 modern protected cruiser ("Sumatra"), 1 old ironclad of 5,400 tons displacement, 14 gunboats, 3 paddle-wheel steamers, and 1 torpedo boat. The number of cannon is 141. The crews number 2,169 men.

The value of the imports in 1893 was 177,358,000 guilders, of which 159,474,000 guilders represent merchandise imported on private account and 6,586,000 guilders stores imported for the Government, making the total merchandise imports 166,060,000 guilders, while the specie imports were 11,298,000 guilders, 10,298,000 guilders for individuals and 1,000,000 guilders for the Government. The total value of the exports was 192,431,000 guilders, 171,023,000 guilders representing private exports of merchandise, 20,377,000 guilders exports of merchandise for the Government, and 1,031,000 guilders exports of specie. The merchandise imports of Java and Madura were 115,230,000 guilders in value, and the exports 129,806,000 guilders; the imports of merchandise from the exterior provinces were valued at 44,244,000 guilders, and the exports at 41,217,000 guilders. The values of the principal exports from Netherlands India in 1893 were: Sugar, 71,049,000 guilders; coffee, 37,629,000 guilders; tobacco, 30,226,000 guilders; tin, 12,043,000 guilders; pepper, 3,218,000 guilders; rice, 3,092,000 guilders; copra, 2,418,000 guilders; rattans, 2,643,000 guilders; skins, 2,325,000 guilders; indigo, 2,225,000 guilders; nutmegs, 1,921,000 guilders.

The number of vessels that visited the ports in 1893 was 2,946 steamers, measuring 3,340,000 cubic metres, and 1,401 sailing vessels, of 4,347,000 cubic metres capacity.

The railroads of Java had a total length in 1895 of 879 miles, and there were 184 miles building, while in Sumatra there were 174 miles working and 20 miles under construction.

The telegraph lines, which belong to the Government, had a total length in 1893 of 4,274 miles, with 6,547 miles of wire. The number of dispatches in 1893 was 564,334, of which 367,572 were paid inland and 165,730 paid international dispatches. The postal traffic in the same year was 8,671,842 domestic and 7,925,823 international letters. The receipts of the post office were 2,090,000, and expenses 3,516,000 guilders.

The expedition sent in 1894 to subjugate the Balinese Rajah of Lombok was successful, and the rajah, who had bought rifles to fight the Dutch instead of paying the regular tribute, and had entered into intrigues with British and other foreigners and brought the fertile island and its industrious Sassak population to a deplorable condition by his misrule, was taken to Batavia for trial and deposed. One of the constantly recurring seditious conspiracies was discovered early in 1895 in the residency of Buitenzorg, Java, and 50 chiefs and their followers, who were supposed to be plotting a general massacre of Europeans and Chinese, were arrested.

**NEVADA**, a Pacific coast State, admitted to the Union Oct. 31, 1864; area, 110,700 square miles. The population, according to each decennial census since admission, was 42,491 in 1870; 62,266 in 1880; and 45,761 in 1890. Capital, Carson City.

**Government.**—The following were the State officers during the year: Governor, John E. Jones; Lieutenant Governor, Reinhold Sadler; Secretary of State, Eugene Howell; Treasurer, W. J. Werterfield; Comptroller, C. A. La Grave; Superintendent of Public Instruction, H. C. Cutting; Attorney-General, R. M. Beaty—all Silver party; Adjutant General, C. H. Galusha, Republican; Chief Justice of the Supreme Court, R. R. Bigelow, Republican; Associate Justices, Charles H. Belknap, Democrat, and M. S. Bloomfield, Silver party.

**Finances.**—The report of the Comptroller, rendered in January, gives the following details: On Dec. 31, 1894, the debt of the State amounted to \$157,628.91, and there were \$146,065.18 in the treasury applicable to its payment. The Territorial indebtedness is represented by a \$380,000 5-per-cent. irredeemable State bond belonging to the school fund. The cash in the treasury Jan. 1, 1894, was \$384,546.45; received during the year, \$453,461.23; transfer from library fund, \$13.50; total, \$838,021.18. Disbursements during the year, \$522,174.56; cash in treasury, Dec. 31, 1894, \$315,846.62. The actual expenses of the State Government for the two years 1893-'94 were \$505,386.23. The revenue collected applicable to the payment of those expenses was \$490,872.95.

**Education.**—There were \$78,645.88 in the school fund, \$7,868.26 in the university fund 90,000-acre grant, and \$12,140.18 in the university fund awaiting investment. In conformity to an amendment to the Constitution, an act approved Feb. 4, 1891, provides for the investment of these moneys in the bonds of other States as well as in United States bonds and bonds of Nevada, and \$100,000 of United States securities were purchased during 1894. The expenditures from the distributive school funds for the benefit of the public schools and the State University for 1893-'94 amounted to \$249,815.59.

The school population in 1894 was 9,454; the number enrolled, 7,298; the average number belonging, 5,839; the average attendance, 5,190; average duration of school, 7-8 months; average salary of teachers monthly, \$70.16; total number of schools, 294.

There were about 223 students enrolled at the State University at the beginning of 1895. The mechanical building and machinery were destroyed by fire in November, causing a loss of about \$8,000.

**State Institutions.**—Following are reports of the cost of these and the number of inmates for the biennial period 1893-'94:

State Prison—appropriation, \$65,000; total cost, \$62,994.18; receipts for board of United States and county prisoners and sales, \$18,993.89; net cost, \$44,000.29; average number of prisoners, 88½; average daily expense for each, 68 cents.

State Insane Asylum—appropriation, \$80,000; amount expended, \$70,908.62; receipts, \$2,165.16; net cost, \$68,743.46; average number of patients, 187<sup>4</sup>/<sub>10</sub>; average daily expense, including improvements, transportation, etc., 50<sup>35</sup>/<sub>100</sub> cents.

State Orphans' Home—appropriation, \$28,000; expense, \$27,975.17; receipts, \$279.50; net cost, \$27,695.67; average number of children, 80; average daily cost, 47<sup>4</sup>/<sub>10</sub> cents.

For the Deaf, Dumb, and Blind—appropriation, \$2,000; cost, \$2,357.47; deficit, \$357.47. There is no State institution. Children are sent to the California Institution for the Deaf, Dumb, and Blind at Berkeley. The cost is \$300 a year.

**Farming.**—A report on the crops says: "Nearly everything in the way of crops and fruit has yielded far better than was expected at the beginning of the season. While the rainfall was below the normal, the supply of water for irrigation held out very well, except in central Elko County, along the upper portion of Humboldt river. The tame hay crop is fair, although wild hay cut less than usual. All small fruits yielded better than for years in Humboldt, Lyon, Storey, Douglas, Ormsby, and the extreme southern portions of Washoe County.

**Mining.**—Considerable activity was reported in the mining districts during the year. Gold is said to have been taken out in many places. The De Lamar district, in southern Nevada, especially, where the mines have been in operation only about three years, has had a great influx of gold seekers. The activity there is said to have been unequaled in the State since its palmy days. Most of the large mines are controlled by the De Lamar company, which was reported in August to be shipping about \$100,000 in gold every month.

The men have been paid in checks and small aluminum coins issued by the company, of different face values, which have been in general circulation in that section as well as portions of Utah. This was held by United States officials to be contrary to the law, making it punishable to make or utter any coins. The company claimed as their reason for using these instead of Government coins that it was unsafe for them to transport gold and silver back into the camp, and that as the money was not intended for general circulation they were violating no law. The United States District Attorney, however, be-



lieved differently, and arrested the superintendent. An examination was had and the superintendent was held, but allowed to go on his own recognizance. Later, the attorneys of the company in New York were consulted, and they directed that the aluminum coins should be withdrawn from circulation.

The Mount Como group of mines was bonded in August to an English company for \$40,000 for six months. A tunnel is to be run from the mill in Palmyra cañon to the North Rapidan mine. This tunnel will run through 2 claims of the group now bonded, and drain all the mines in that section so that they can be prospected and worked to a greater depth.

Vigorous work has been begun on the Brunswick lode. The plan is given as follows: "The Comstock companies to purchase 5,000 feet of the Brunswick lode at \$12.50 per foot. This ground to be prospected from the Sutro Tunnel, and the expense to borne *pro rata* by the companies interested. The Sutro Tunnel to be extended west through the west formations. A branch tunnel to be started from the vicinity of the Alta shaft and extended into the American Flat country. The expense of this tunnel to be borne by 12 of the south-end mines. The drift run from the Alta will be in a country which has proved to be mineral-bearing, but which is so wet that it can not be worked. The new tunnel will drain it at a depth of between 1,300 and 1,400 feet."

**Legislative Session.**—The seventeenth session of the Legislature began Jan. 21 and ended March 23. Lem Allen was elected Speaker of the Assembly. The political character of the two Houses was: Senate—3 Republicans, 3 Independents, and 9 Silver party; Assembly—9 Republicans, 1 Populist, and 20 Silver party.

The Assembly passed a bill repealing the law of the last Legislature limiting the session to fifty days. The Senate adopted a substitute for this bill, passing it unanimously, that this Legislature might sit to the full constitutional limit of sixty days, but should draw pay for only fifty days. The session continued sixty days.

The State University received an appropriation of \$38,000 for land and a building for dormitories and \$1,000 for a library.

Bills were introduced providing for consolidating certain counties. A bill was passed incorporating Storey County, doing away with the city of Virginia and the town of Gold Hill, and vesting their property in the county, providing for one county general fund instead of the three city and county funds, and for a tax levy for county purposes of \$3.50 instead of \$3.60.

The validity of this law was questioned. It was claimed that if put into operation it would do away with the saloon license by the act of setting aside the city organization.

A law was passed requiring that owners of sheep pastured in the State must pay a license or must have legal title to or have made the first payment upon a certain amount of land for each sheep. The question came before the courts whether lands leased from the overland railroad are to be included under the above description. Judge Cheney, in the district court, decided in the affirmative.

Another bill provided that live stock driven

into the State from other States shall be liable to the same tax as stock that have wintered in Nevada, notwithstanding the tax on such stock may have been paid in other States. Live stock driven in for commercial purposes are, however, exempt from this rule. It also extended the time for assessing live stock by giving the assessor authority to make the assessment on any calendar day of the year. The occasion for the law as given is that it has been the custom for California sheep owners to drive their flocks into Nevada and summer them there. They fatten on the grasses and damage the roads in Nevada, yet do not contribute to support the State or county governments.

A bill making changes in the election laws, so as to secure the purity of the ballot, was one of the important measures of the session.

The game law was amended, extending the season for killing teal, mallard, and the like, to April 1. The close season for grouse, quail, woodcock, and similar game is from March 15 to Sept. 15.

An act was passed to protect public ranges from wild horses. This is made necessary by the great numbers of these horses—estimated as high as 200,000—that are roaming over the State, eating off the grass so that sheep and cattle are deprived, and also in many instances leading off domestic horses from the ranches.

The statutes were ordered compiled by the Attorney-General and F. H. Harman and published at \$5 a copy.

The following joint resolution passed:

That we demand the collection of the indebtedness of the Pacific Railway companies to the United States, as it matures upon the same principle that individual demands are enforced, and we instruct our Senators and Representatives in Congress to vote for such a bill as will dispose of this important question to the best interests of the people of the State of Nevada and the whole people of the United States, and in accordance with the law and justice to all.

And be it further resolved that we demand the enforcement of the Interstate Commerce act everywhere.

Another joint resolution, after a preamble in reference to the restoration of silver and the services of Senator Jones, continued:

That the people of Nevada fully appreciate the transcendent intellectuality that has characterized the zealotness of Senator Jones in the National Senate and at Belgium's capital in behalf of Nevada's interests, and trust that he may be spared to persevere in the good work until victory may be achieved.

A concurrent resolution declared opposition to national banks, and in favor of free and unlimited coinage of silver.

Another resolution that passed both houses accused the President, "aided by the Democracy, of high crimes and misdemeanors in the financial policy of the Administration, especially relative to the silver question, and declared that he was deserving of impeachment," etc.

In reference to the address of the Bimetallic League, it was

*Resolved*, That we hail with satisfaction the action of the American Bimetallic League, in calling on the people of the United States to make all the questions in the campaign of 1896 subordinate to the paramount one of the restoration of silver and the cause of monetary reform.

That the people of Nevada fully approve and endorse the declaration of principles and addresses formulated by the Bimetallic League at its session at Washington on Tuesday, March 5, and will encourage and sustain the work of Nevada's friends by pledging the electoral vote of the State to Hon. George C. Sibley for President, or any true friend of the people, in preference to the candidate of any party whose interests are irrespectively connected with the single standard.

An act providing for a portrait of ex-Gov. Colcord was amended by the Assembly with a provision that the work be done by a Nevada artist.

A bill providing for the submission of an amendment allowing woman suffrage was lost in the Assembly by a vote of 12 to 17.

Other acts of the session were:

Making it the duty of county commissioners of any county in which public arms, accouterments, or military stores are now had or shall hereafter be received for the use of any volunteer organized militia company to provide a suitable and safe armory for organized militia companies within said county, and providing that the expense should be paid from the State general fund, but not making an appropriation. The Constitution forbids payment of money from the treasury except in consequence of an appropriation. Providing that after May, 1896, commissioned officers will be elected for two-year terms, and not less than 44 members will constitute a military company, instead of 40, as at present.

Regulating appeals to the Supreme Court.

Changing the name of the State insane asylum to Hospital for Mental Diseases.

Appropriating \$15,000 for an annex to the State insane asylum.

Declaring the willful intention of any person to prevent another person from securing employment a misdemeanor.

Providing for the establishment of high schools in various counties.

To prevent the spread of contagious diseases.

Regulating the practice of dentistry.

Providing for Typographical Union labels on public printing.

Requiring corporations to pay their employees monthly and in lawful money.

**NEW BRUNSWICK**, an eastern province of the Dominion of Canada. Capital, Fredericton.

**Government.**—The Executive Council, or ministry, consists of the Hon. A. G. Blair, Premier and Attorney-General; Hon. J. Mitchell, Provincial Secretary; Hon. A. J. Tweedie, Surveyor General; Hon. H. R. Emmerson, Commissioner of Public Works; Hon. A. S. White, Solicitor-General; Hon. Albert T. Dunn and Hon. C. H. Labillois, members of Council without portfolio or salary. Mr. Blair is a Liberal in politics and has been Premier of the province since 1883. As in Nova Scotia and Ontario, it retains a local Government of a different political nature from that which the province supports in the Dominion. But Mr. Blair has had Conservative members in his Government and at times it has been called a coalition. Elections for the Assembly took place on Oct. 16, 1895, and resulted in another victory for the Premier.

**Legislation.**—The third session of the Twenty-eighth General Assembly was opened by Lieut.-Gov. John James Fraser, Jan. 31, 1895, in Fredericton. The most important paragraphs of his speech were these:

The liberal provision which the Legislature has made in the past few years for the encouragement of the dairy interests of the province and the cordial co-operation of the Dominion authorities with my Government in this important work have produced very gratifying results. Three years only have elapsed since the province was obliged to depend very largely upon outside production for its cheese supply. Last year, not only was the home demand fully supplied by the home production, but there remained a considerable surplus for export.

The importance of providing for a more equitable representation in Parliament of those counties whose wealth, population, and relative importance have increased in recent years, has engaged the serious attention of my Government. The measure which my Government will submit to you will be found, it is hoped, to some extent at least, to redress the inequalities which in these respects now exists.

An active interest is being awakened among the enterprising business men of St. John in favor of holding a provincial exhibition in that city during the current year. Should the plans of the association provide for a suitable display of agricultural products, my Government believes it would be desirable to assist the undertaking in a substantial manner.

The principal legislation of the session—which was prorogued on March 5—consisted in the following acts:

To secure to wives and children the benefit of life insurance.

In aid of an exhibition at St. John.

To provide for the inspection of butter and cheese intended for export.

Respecting the property of married women.

Relating to the issue of provincial debentures.

To amend further the New Brunswick medical act of 1881.

Respecting assignments and preferences by insolvent persons.

To amend "the New Brunswick Elections act of 1889."

To provide for the cost of certain international bridges.

**Finances.**—Mr. Mitchell delivered his budget speech Feb. 6. At the end of the fiscal year the bonded indebtedness was \$2,628,000; at the time of speaking it was \$2,675,000. During the year \$30,000 of bonds bearing 6 per cent. interest had been replaced at 4 per cent. The same policy would be pursued in 1895 with \$109,000 debentures. The floating debt was \$146,483. During the year a large number of steel bridges had been built. The total estimated expenditure was \$669,372, the actual outlay \$661,521. The estimated receipts for 1895 were \$670,560, the chief items being \$483,560 from the Dominion Government subsidy, \$145,000 from territorial revenue (mainly timber lands), and \$24,000 from taxes on incorporated companies. The estimated expenditure for 1895 was \$669,194, the chief items being \$14,160 upon the administration of justice, \$21,650 upon agriculture, \$183,914 upon education, \$27,600 upon executive government, \$114,000 upon interest, \$19,295 on legislation, \$40,000 upon the lunatic asylum, \$11,000 upon public printing, and \$192,150 upon public works.

**Education.**—The Provincial Board of Education consists of the Lieutenant Governor, the members of the Executive Council, the President of the University of New Brunswick, and the Chief Superintendent of Education. The schools are by statute free and unsectarian. Since 1890 there has been an increase of 136 in



the number of schools, 132 in the number of teachers, and 1,125 in the number of pupils. During the first term of 1894 there were 1,653 schools in the province, 1,749 teachers, and 61,280 pupils. The average attendance during the year was 69,648. The expenditure for the year ending June 30, 1894, included \$150,882 from provincial grants, \$92,281 from county funds, and \$183,166 from district assessments, a total average cost of \$6.13 per pupil.

**Agriculture.**—The report of the Commissioner of Agriculture, presented in January, 1895, claimed a very prosperous season in dairying and great success for the governmental importation of thoroughbred stock. The crops, on the whole, do not seem to have been good, but the cultivation of apples and small fruits was greatly increased and very successful. Dairying was the chief new resource of agriculturists during the year. There were 45 factories in the province in 1894, against 9 three years before. The number of patrons had increased from 200 to 1,200, the value of the product from \$18,000 to \$100,000, the export of cheese from nothing to \$20,000, and of butter from nothing to \$8,000. The official report speaks of meetings averaging 100 a year, which have been addressed on this subject and attended by 25,000 people. On Aug. 16, 1894, an agricultural conference was held at Fredericton, attended by 4,000 persons, and addressed by the Governor General, Lord Aberdeen, ex-Gov. W. D. Hoard, of Wisconsin, Lieut.-Gov. Fraser, of New Brunswick, Premier Blair, and others.

**Fisheries.**—During 1894 the province had 819 fishermen in vessels and 10,831 in boats. The value of these boats, traps, nets, wharves, etc., was placed at \$1,680,912, and the value of the yield was \$4,351,527—an increase of \$600,000 over 1893 and of \$1,150,000 over 1892. Its export of fish was \$715,619. The distribution of the catch in 1894 will be seen from the following figures: Salmon, \$454,974; hake, \$81,940; mackerel, \$152,184; pollock, \$46,787; herring, \$1,127,197; halibut, \$23,748; cod, \$492,493; smelts, \$336,400; haddock, \$89,983; sardines, \$278,706; lobsters, \$531,570; oysters, \$67,840; miscellaneous, \$667,655.

**Shipping.**—The registered tonnage carrying cargo into and out of the province during 1894 was \$1,167,586. The tonnage of vessels employed in the provincial coasting trade was in 1894 \$1,118,787.

**NEWFOUNDLAND.** Several important acts were passed by the Legislature during the session of 1895, some of which were rendered necessary by the financial crisis that followed the failure of the only two banks in the island on Dec. 10, 1894. Their notes constituted almost the entire currency of the country, and when these became worthless people found themselves without any medium of exchange. To meet this serious emergency the Legislature passed an act providing for the registration of notes of both banks then in circulation, and for a guarantee thereupon by the Government of 80 per cent. of their value in the case of Union Bank notes, and of 20 per cent. in the case of the Commercial Bank. Notes thus guaranteed were not to be presented for payment till July 1, 1897; and no notes were to be redeemed before Jan. 1,

1897, nor after Dec. 31, 1897. This measure afforded a slight temporary relief; but so great was the distrust that the guaranteed notes soon ceased to circulate, and it was not till 3 Canadian banks had opened branches in St. John's that a satisfactory currency was established.

Two acts followed, providing for liquidation of the 2 banks. Trustees were appointed, who were empowered to realize and distribute the assets and to make compromises with the debtors and creditors of the banks.

Another act was passed regarding the currency, which is in dollars and cents. It orders that the sovereign shall be worth \$4.86½, and British silver be taken at proportionate rates. The gold eagle of the United States, weighing 10 pennyweight 18 grains troy, shall pass for \$10, and multiples or parts thereof in proportion. Coins struck for circulation in the colony shall be legal tender for the rates assigned them. No other coins shall be legal tender.

Another act provides for the raising of a loan of £550,000, and the appropriation annually of £27,700 for payment of interest and creation of a sinking fund. Interest on the whole public debt is to be a first charge on the revenue of the colony. The loan is to be applied to the payment of the floating debt of the colony and other services.

Another act provided for the establishment of a fire department for the city of St. John's, which is to be in connection with the Newfoundland constabulary. Toward its support the Municipal Council contributes \$7,000 per annum and the insurance companies \$2,000.

The act to amend the law relating to slander provides that words spoken or published which impute immorality are actionable, and the plaintiff is entitled to damages without proof of special damage.

The act to continue for a further period the Newfoundland French Treaty act provided for the continuance of this act to Dec. 31, 1897.

The act respecting reduction of salaries of public officials gives power to the Governor in Council to reduce all salaries according to a fixed scale, which is laid down.

The act to remove certain disabilities under the election act of 1889, after reciting facts in connection with the election petitions and trials of 1894, by which certain members of the House of Assembly were disqualified for alleged corrupt and illegal acts and practices, declares that nothing in the corrupt practices act of 1887 shall be construed to render any one unseated incapable of being a candidate for, or sitting or voting in the existing General Assembly, or of holding any office under the Crown.

**Events.**—Dec. 10, 1894, Newfoundland's Black Monday, will long be remembered in the annals of the country. On that day, without any warning, the people found themselves without a currency, and all business was suspended. Factories and workshops had to dismiss their employees. The failure of the banks was speedily followed by the collapse of 7 large mercantile firms and a number of the smaller trading establishments. Want of employment created widespread destitution among the working people. The revenue declined rapidly, as it depended on the duties on importations, now considerably reduced.

The people courageously faced their difficulties, confident that they were able to overcome them, and that better days were in store. The establishment of branches of 3 Canadian banks of high standing in St. John's was attended with the best results, and helped greatly in restoring confidence. Speedily business began to revive. The Bank of Montreal extended a helping hand to the Government, and by a loan enabled it to meet all liabilities on Jan. 1 and April 1. Money became more plentiful, and shops and stores resumed their former busy aspect. The destitute poor were temporarily provided for by generous contributions from abroad. Factories and workshops resumed operations, and employment became more plentiful as the year advanced. About 2,500 men found employment on the railway.

Still more important was the success of the seal fishery, which proved to be the best for many years, and in value exceeded \$600,000. This was followed by one of the best summer cod fisheries experienced in recent years. Not only was the catch large, but, owing to favorable weather and greater care, the cure was superior to that of recent years. The cash trade proved to be the best for many years.

Meantime a floating debt of \$2,500,000 remained, and the condition of the revenue created much anxiety as to the ability of the colony to meet its liabilities. This had a depressing effect at home and exercised an injurious influence on credit abroad. If a loan could be obtained sufficient to wipe out the floating public debt, and if a retrenchment policy were adopted, then all might go well. The Hon. Robert Bond, Colonial Secretary, obtained in the London money-market a loan of \$2,500,000 at 4 per cent., to be repaid in forty years. He also negotiated a loan of \$1,000,000 for the savings bank at  $3\frac{1}{2}$  per cent., rendering this institution absolutely safe in any emergency. As soon as the success of the loan was announced, the Government formulated a stringent retrenchment policy, which was adopted by the Legislature, and at the same time a slight increase of taxation was made. The retrenchments announce aggregate \$494,000. All official salaries are reduced, and reductions are also made in the grants to various public services. The expenditure for the fiscal year is estimated to reach \$1,331,000, while the estimated revenue for the year is \$1,725,022.

The revenue, which had suffered severely by the crash, has rallied to a wonderful extent, and as business improved and imports increased, it fully shared in the general prosperity. Before the end of 1895 it regained its normal condition. The revenue for October and November exceeded that of the same months in 1894; and as quarter day approached, Jan. 1, 1896, the Government was able to remit to London the money required for payment of interest on the public debt and to meet all home liabilities out of the revenue for the year.

The old "truck" or credit system, on which the fisheries had been carried on for generations, has received its deathblow; and in future these industries will be conducted on a cash basis. The effect of the "truck" system was to undermine and destroy the industry and honesty of the fishing classes, to render them reckless and indolent,

and to involve them hopelessly in debt. At the same time the system worked disastrously for the merchant class, and ultimately ruined them.

A general election took place at the close of 1893, resulting in a decided victory for the party headed by Sir William Whiteway. The numbers stood: 24 Whitewayites, and 12 Opposition. When the new Legislature met in February, 1894, it was found that 19 members of the Whiteway party, including the Premier himself and all the members of his Cabinet, had been petitioned against on the ground that they had been guilty of bribery and corruption. When the cases came up for hearing before the judges of the Supreme Court, the first three tried were found guilty, and were unseated and disqualified for standing again as candidates during the term of the present Parliament. Finding that the others were likely to share the same fate, Sir William Whiteway advised the Governor to dissolve the present Parliament and order a new election. Had this been done it would have ended the prosecutions for bribery and left all open to re-election. But the Governor refused to act on the advice of his ministers, on the ground that it would amount to his using the royal prerogative for the purpose of interfering with the ordinary course of justice, and shielding men who were accused of corrupt practices. In this course he was sustained by the imperial authorities. In consequence, Sir William Whiteway resigned, and the Hon. D. Morrison, leader of the Opposition, was called on to form a Government. Not having a majority in the House of Assembly, the new Government could not carry any measure; and the Legislature was prorogued from time to time, so as to permit the accused members to be tried. The trials proceeded, and, one after another, 17 members of the Whiteway party were unseated, till only 7 were left. The new Government had then a majority; the House met and passed the necessary bills, and the session closed.

When the new elections were ordered, to fill the vacancies caused by the unseating of members, the great majority went against the Morrison Government, and a large majority of Whitewayite candidates were returned. This finally led to the resignation of the Government, and Mr. Green was called upon to form a Government, which he did, and soon afterward an act was passed removing the disabilities of the condemned members; so that Sir William Whiteway and the other disqualified members were re-elected, and he again became Premier.

While these political events were in progress there was much excitement, and party animosity ran high. Much friction was experienced in carrying on the Government under such anomalous conditions, and especially in the collection of the revenue. But when the Legislature assembled, in the spring of 1895, these political turmoils were hushed in presence of the financial calamity; and the Legislature devoted itself to devising remedial measures and saving the colony from bankruptcy.

In April, 1895, the Government sent a deputation to Canada to endeavor to negotiate terms for the admission of Newfoundland into the Dominion; but, after protracted discussions, the attempt at union proved a failure, the terms



offered by Canada not being such as Newfoundland could accept.

In October, 1895, discoveries were made of extensive smuggling operations from St. Pierre to Newfoundland, causing serious losses to the revenue. Ramifications of this smuggling system were found to extend to St. John's and the principal ports of the island. Several seizures were made, and about 20 of the smugglers were tried and heavily fined. It is estimated that the annual loss to the revenue by smuggling is not less than \$100,000. The French at St. Pierre afford every facility for the illicit traffic, and refuse to allow a British consul to reside there.

The French shore treaty question is still unsettled, and the *modus vivendi* has been extended till the end of 1897. Under this arrangement matters have of late been going on rather smoothly.

**Trade.**—The value of imports in 1894 was \$7,164,738; exports, \$5,811,169. The revenue in 1894 was \$1,641,035. The public debt amounted to \$9,116,535.

**Railways.**—The new line from Placentia Junction to Port-au-Basque, 500 miles, is making rapid progress and is admirably built. During 1895 it reached Bay of Islands on the western coast, 356 miles from the Junction and 406 miles from St. John's, leaving 144 miles to be built. By the close of 1896 it will be completed and operated to Port-au-Basque. A short run of 100 miles by swift steamers across the Gulf of St. Lawrence to Cape Breton island will place travelers in connection with the continental railway system, and Newfoundland will almost cease to be an island. On the completion of the present line the colony will have 610 miles of railway.

**Mining.**—Two important discoveries have been made during the past year. One is of a coal area, 12 miles long and 6 broad, on the new line of railway, near the eastern end of Grand lake, 40 miles by rail from Bay of Islands. One seam is estimated to contain 11,000,000 tons, and there are 6 smaller seams. The coal is of excellent quality. In St. George's Bay, at no great distance from the railway iron ore is reported in abundance. Not less important is the discovery of a deposit of iron ore on Belle Isle, Conception Bay, a dozen miles from St. John's. There are 2 beds of ore on the island, which have an area of 2 square miles. A mining expert estimates that these contain 50,000,000 tons of ore. It is all surface mining. The ore tests 55 per cent. The property has been leased to a Nova Scotia company, who have already shipped several large cargoes to be smelted at New Glasgow.

Copper mining, in the north of the island, continues to be prosecuted successfully. In 1894 28,824 tons of copper ore and regulus were exported, the value being \$235,179. In addition, 40,582 tons of iron pyrites were exported from a mine in Pilley's island, valued at \$285,474.

**Fisheries.**—The total value of the exports of fishery products in 1894 was \$5,144,589. The bank fishery employed 58 vessels and 785 men. The average catch per man was 69 quintals. The seal fishery of 1895 employed 20 large steamers, carrying 4,680 men. The number of seals taken was 270,058. The export of lobsters

in 1894 was 48,056 cases; value, \$312,364. The export of herrings in the same year was 132,060 barrels; value, \$244,789.

**Education.**—Under the retrenchment policy, the education grant is fixed at \$124,559. The system is denominational, and the whole grant is divided denominationally, according to the population, and the expenditure is controlled by denominational boards.

**NEW HAMPSHIRE**, a New England State, one of the original thirteen, ratified the Constitution June 21, 1788; area, 9,305 square miles. The population, according to each decennial census, was 141,885 in 1790; 183,858 in 1800; 214,460 in 1810; 244,022 in 1820; 269,328 in 1830; 284,574 in 1840; 317,916 in 1850; 326,073 in 1860; 318,300 in 1870; 346,991 in 1880; and 376,530 in 1890. Capital, Concord.

**Government.**—The following were the State officers during the year: Governor, Charles A. Busiel; Secretary of State, Ezra S. Stearns; Treasurer, Solon A. Carter; Attorney-General, Edwin J. Eastman; Adjutant General, Augustus D. Ayling—all Republicans; Commissioner of Insurance, John C. Linehan; Bank Commissioners, James O. Lyford, Alpheus W. Baker, John Hatch; Mr. Lyford was succeeded Dec. 1 by Thomas J. Walker; Superintendent of Public Instruction, Frederic Gowing; Railroad Commissioners, Henry M. Putney, Benjamin W. Prescott, Thomas Cogswell; Labor Commissioner, John W. Bourlet; Chief Justice of the Supreme Court, Charles Doc; Associate Justices, William M. Chase, Alonzo P. Carpenter, R. M. Wallace, I. N. Blodgett, L. W. Clark, and Isaac W. Smith, who retired in May, and was succeeded by Frank N. Parsons.

**Finances.**—The transactions of the treasury for the year were: Cash, June 1, 1894, \$259,027.44; receipts to June 1, 1895, \$1,792,904.47; total, \$2,051,931.91; expenditures, \$1,908,739.10; balance, \$143,192.81. The net debt, June 1, 1895, was \$2,026,300.65; reduction during the year, \$10,241.58.

Among the extraordinary appropriations were \$94,604.76 for the State Library building; \$16,430.59 for the asylum special appropriation; \$13,025.22 for the balance of current expenses at the State Prison, and \$2,722.96 for repairs there; \$14,729.90 for carrying out legislative resolves; \$8,814.81 for White mountain roads; \$8,397.45 for the Soldiers' Home; \$7,500 for Dartmouth College; and \$6,847.42 for the Webster and Stark statues. Bonds to the amount of \$146,000 were redeemed during the year.

The State treasury was robbed about noon, June 3, of \$3,385.50 belonging to the State and valuable securities belonging to the Treasurer.

**Valuations.**—The equalized valuation of the State, which is to form the basis of apportionment of the State taxes for five years beginning with 1895, and covering the inventories of cities and towns, savings-bank deposits, railroad property, and insurance capital subject to taxation, aggregates \$286,756,618. In 1890 the amount was \$262,378,917. Since 1879, the date of the formation of the Board of Equalization, the increase has been \$79,791,601. "The increase has arisen very largely," says the report of the board, "from savings-bank deposits (\$45,000,000), railroad properties (\$11,000,000), and insurance capi-

tal (\$1,275,000). In the same time there has been a decrease in 'money on hand, at interest, or on deposit' from nearly \$20,000,000 in 1879, when the law requiring sworn inventories went into effect and was universally enforced, to about \$6,000,000 in 1894, when in a large portion of cities and towns it has practically become a dead letter. In the past four years the equalized valuation in the 10 cities of the State has advanced \$15,238,854, or more than three fifths of the entire increase previously shown. The depreciation of agricultural properties in the State is becoming year by year more apparent." The number of ratable polls has risen from 86,827 in 1879 to 100,017 in 1894. With a State tax of \$500,000, which has been the regular annual levy since 1888, the amount required on each \$1,000,000 of valuation, under the new apportionment, will be \$1,750; with the last apportionment (1890) it was slightly in excess of \$1,900.

**Education.**—The forty-eighth annual report of the schools of the State, issued in October, 1894, gives the number of schools as 2,222; the average length of school sessions in weeks, 24.95; the average attendance, 42,030; the average to each school, 18.91; the percentage of average attendance to the whole number, 67.3; the number reported attending private schools, 7,425; whole number of male teachers, 280; female teachers, 2,907; average wages of the former, \$49.78 a month; of the latter, \$27.36. There are reported 52 public high schools and 22 private schools of similar grade. The State Normal School at Plymouth has about 75 students.

The Legislature passed an act establishing a two-years' course in practical and theoretical agriculture, a department of horticulture, and a system of practical instruction and manual training at the College of Agriculture, to which students shall be admitted who can pass a fair and reasonable examination in reading, spelling, writing, arithmetic, English grammar, and the geography and history of the United States. This act was the result of the agitation in reference to the college which has been going on for some time. It was claimed that the trustees and instructors were devoting their efforts mainly to building up a classical, scientific, and polytechnic institution. The Legislature appropriated \$2,500 a year for two years, for the purpose of carrying the act into effect.

The class from Dartmouth Medical College, numbering 38, was the largest ever graduated in that department.

The term at Dartmouth College opened in September with a freshman class of 130, while 20 upper classmen from other colleges were added. The standard for admission has been raised in all departments and also the rank for college work. State aid to the amount of \$7,500 a year was continued to the college by the Legislature for the present biennial period.

**State Institutions.**—The report of the Board of Lunacy for the year ending Sept. 30, 1894, shows that there were then in the State asylum 404 patients. Jan. 1 there were 402. The new building for male convalescents was opened in November, 1895. It is designed to accommodate 26 patients. The cost was nearly \$19,000, exclusive of plumbing and heating. The old buildings are being refitted. The mortality in

1894 was a little over 6 per cent. The percentage of recoveries was 28.23, a slight increase over that of the previous year.

The report of the Orphans' Home at Franklin for the year ending May 31, shows that 55 were received during the year and 4 returned from on trial, making a total of 135. The receipts were \$11,644.73, and the expenditures \$10,736.65. The profit from the farm was \$1,035.

The Soldiers' Home received an appropriation of \$15,000 for two years, in addition to such sums as the State may be entitled to receive from the General Government in aid of the support of disabled soldiers and sailors for that period, and \$10,000 was appropriated for building and furnishing a hospital.

The report of the State Prison for the year ending Nov. 30, 1894, shows that there were then 172 inmates, of whom 4 were women. The earnings from all sources were \$11,412.11, the expenditures \$24,597.20. This includes \$3,250 for the purchase of a shop. While the expenses of the prison were more than \$1,000 less than in 1893, there was a large deficit caused by the loss of earnings during the months from January to May, and to the lower price received for convict labor since that time. In December, 1895, it was decided to continue the contract with the chair manufacturers, but they are to pay an increase of 10 cents a day.

**Insurance.**—The commissioner's report, published in July, gives statistics as follows:

Domestic fire companies: Risks written, \$42,243,566.44; premiums received, \$494,840.94; losses paid, \$283,580.08. These figures show a decrease of risks written, \$12,976,373.96; in premiums received, \$88,244.12; and an increase in losses paid of \$37,328.57. The New Hampshire business of companies of other States and countries was: Risks written, \$33,828,209.10; premiums received, \$492,936.33; losses paid, \$289,496.33.

The number of authorized life insurance companies May 1, 1895, was 22, an increase of 1 over the previous year. The principal items are: Number of policies issued, 2,514; amount, \$3,945,677; policies in force Dec. 31, 1894, 14,606; amount, \$24,800,011; amount of premiums received, \$884,442; losses and claims, \$371,806.

The business of the casualty and surety companies within the State for the year ending Dec. 31, 1894, was: Risks written, \$9,927,930.47; premiums received, \$64,432.91; losses paid, \$31,611.99.

**Savings Banks.**—In January the largest of the Concord banks announced a reduction of dividends from 4 to 3 per cent., and was followed by the others. The reason given was the withdrawal of deposits consequent on the operation of the income-tax law. Two of the Concord banks lost in 1894 over \$100,000 each in deposits. The Nashua Savings Bank, the fifth largest in the State, closed its doors March 5, an injunction having been issued against it on application of the bank commission. The withdrawals were very heavy after the reduction. Eight savings banks were under injunction at the close of the year. The net decrease of deposits in the savings banks for the year was \$3,870,240.79. The guarantee fund and surplus



of the savings banks decreased for the same period \$582,887.52 by reason of losses, reduction of book values of assets, and charges incident to the protection of Western real-estate holdings.

There are 7 trust companies that are now conducting savings bank departments, and 2 that are closing out that branch. The savings deposits of the 7 aggregate \$1,680,760.30.

The Legislature of 1895 reduced the rate of taxation on deposits from 1 per cent. to three quarters of 1 per cent. This made the total of savings-bank tax for the year \$484,000, against \$705,000 in 1894. Many of the banks then increased their dividends to  $3\frac{1}{4}$  per cent.

**Railroads.**—The great railroad event of the year in the State was the lease of the Concord and Montreal to the Boston and Maine, which was decided upon in a meeting of the stockholders June 29. The vote stood 34,538 $\frac{1}{2}$  shares in favor to 10,047 against the lease. At the same meeting it was voted that the capital stock be increased \$1,200,000, making it in all \$7,200,000. This practically removes the control of the railroads of the State to owners outside, and does away with competition.

**Manufactures.**—A comparison of the establishments reporting to the Labor Bureau in 1893 and 1894 shows a decrease in every respect. The capital invested in 1893 was \$14,968,161; in 1894, \$14,488,890; wages paid declined from \$4,879,606 to \$4,397,607; and value of product, from \$18,936,633 to \$16,312,963.

**Farming.**—On Jan. 1, 1890, the selectmen of the towns reported 1,342 abandoned farms in the State, with vacant buildings suitable for occupancy. During 1895 the selectmen were requested to make a canvass of this class of farms, and reported 750. Letters of inquiry about these farms, received by every mail, come mainly from residents of cities desiring farms for permanent homes or summer residences.

**Fish and Game.**—There are 11 hatcheries in the State, the largest number in any State of the Union. Two were built last season. The strict enforcement of the game laws has increased the number of deer in all parts of the State, especially the northern section, where it is estimated they outnumber the sheep 2 to 1, while moose and caribou have been seen there for the first time in many years.

**Forests.**—The report of the Forestry Commission says that the area of forests in the State comprises practically 60 per cent. of the entire surface, and has not greatly changed since the publication of the report of the first temporary Forestry Commission in 1895.

The acreage of virgin spruce is about 525,000, of which about 300,000 is in the White-mountain district. The annual product from this is for lumber about 240,000,000 feet, and for pulp about 40,000,000 feet. The amount used for pulp is increasing about 15 per cent. a year.

**The State Library.**—The new building for the library at Concord was dedicated Jan. 8. The library now numbers 35,000 to 40,000 volumes. The act providing for the new building was passed by the Legislature of 1891 with an appropriation of \$175,000. Land was bought the same year for \$28,500, and contracts let.

The further sum of \$75,000 was appropriated in order that the plans might be enlarged.

The architecture of the building is Romanesque or Italian Renaissance. The structure is two stories high, except for the square tower that rises from its southwest corner. The exterior is of New Hampshire granite, the body being of red stone from the Conway quarries, while the cornices, belts, pilasters, buttresses, balustrades, and entrance steps are of Concord granite. The 8 polished columns of the main entrance are of green granite from Conway.

**The Law and Order League.**—The first annual circular of this league, issued in May, says that more than 400 liquor sellers were prosecuted and scores were driven out of the business during the year. Between June 1 and Sept. 12, 1895, the league is reported to have had 308 more cases of illegal selling. The fight on the enforcement of the laws has been very hot in the cities. The Ministers' Association, of Manchester, filed charges with the Governor against the police commissioners, accusing them of neglecting to enforce the liquor law.

**Legislative Session.**—The ninth biennial session began Jan. 2 and ended March 29. There were 283 Republicans in both Houses and 104 Democrats. Frank W. Rollins was chosen President of the Senate and Stephen S. Jewett Speaker of the House. William E. Chandler was re-elected United States Senator by a vote of 261 to 79.

The commission appointed by the Legislature of 1893 to revise and amend the militia laws made its report, and a revised code for government of the State troops was adopted.

Many bills relating to the liquor traffic were brought in, and the House appointed a special committee to which to refer them. The bills providing for greater restriction of the traffic were lost.

Several acts were passed in reference to savings banks.

An act to establish a new apportionment for the assessment of public taxes was passed, and another, amending the law on taxation, specifying as personal estate liable to be taxed: Stocks in public funds and corporations; the surplus capital on hand of banking institutions; money on hand or at interest more than the owner pays interest for; stock in trade; carriages over \$50 in value; horses, asses, mules, oxen, cows, and other neat stock over three years old; sheep and hogs over one year old (but two such hogs to each family shall be exempt); and fowls of every description exceeding \$50 in value.

An act to aid in the reorganization of corporations provides that when a mortgage of a corporation has been foreclosed the purchasers may obtain all the rights, powers, and privileges of the original corporation.

Amendments were made to the statutes relating to charter fees, public funds liable to be taxed, proceedings in insolvency, discharge from arrest, grade crossings, foreign insurance companies and their agents, teachers, and school boards, and fish and game.

Other acts were:

Prohibiting the giving of cigarettes, snuff, or tobacco to minors.

Authorizing the Governor to institute suits at law or in equity in the name of the State whenever such

course shall be necessary to prevent the diversion of water that would naturally flow into New Hampshire.

Providing for strict examination of supposed insane persons before committal to an asylum.

Providing that seats shall be provided for women employed in factories and stores.

Prohibiting the display of foreign flags on public buildings.

For the protection of associations and unions of workmen and persons in their labels, trade-marks, and forms of advertising, and the owners of literary, dramatic, and musical compositions and works of art in their property.

Allowing trustees and guardians to invest funds in their hands in the bonds of any city, town, or district whose net debt does not exceed 5 per cent. of the last assessment for purposes of taxation. Net debt is to be understood as excluding indebtedness for water supply as well as the amount of sinking funds.

Prohibiting the killing of wild pigeons and turtle doves before Aug. 1, 1898.

Amending the law relating to the sale of adulterated butter and cheese, providing that such butter and cheese shall be plainly labeled.

Imposing a fine of \$20 for every billiard or pool table and every bowling alley kept for hire without license.

Prohibiting the taking of fish through the ice from the waters of certain specified ponds and lakes.

Requiring selectmen in each town to assess taxes for establishing and maintaining free public libraries.

Appropriating \$500 for the introduction of foreign game birds.

Requiring school boards to prescribe and enforce scientific temperance instruction.

Among the joint resolutions passed were the following:

Providing for permanent headquarters for the State Grand Army of the Republic in the Statehouse.

Appropriating \$11,600 for the repair of highways in the State.

Providing for taking the sense of the qualified voters of the State as to the expediency of calling a constitutional convention.

**NEW JERSEY**, a Middle Atlantic State, one of the original thirteen, ratified the Constitution Dec. 18, 1787. Area, 7,815 square miles; population in 1890, 1,444,933; by the State census of 1895, 1,672,942. Capital, Trenton.

**Government.**—The following were the State officers during the year: Governor, George T. Werts, Democrat; Secretary of State, Henry C. Kelsey; Treasurer, George B. Swain; Comptroller, William S. Hancock; Commissioner of Banking and Insurance, George S. Duryee; Attorney-General, John P. Stockton; Adjutant General, William S. Stryker; Superintendent of Public Instruction, Addison B. Poland; Chancellor, Alexander T. McGill; Vice-Chancellors, John T. Bird, who, July 30, was appointed Vice-Ordinary of the Prerogative Court to fill the vacancy occasioned by the death, Dec. 25, 1894, of Vice-Chancellor and Vice-Ordinary Abraham V. Van Fleet, Henry C. Pitney, John R. Emery, Robert S. Green, who died May 7, and Alfred Reed, who was appointed June 4; Chief Justice of the Supreme Court, Mercer Beasley; Associate Justices, Bennet Van Syckel, David A. Depue, Jonathan Dixon, William J. Magie, Charles G. Garrison (reappointed), Job H. Lippincott, William S. Gummere, and George C. Ludlow, who was appointed to the judgeship made vacant by the resignation of Vice-Chancellor Reed; Clerk of the Supreme Court, Benjamin F. Lee.

**Finances.**—The reports of the Comptroller and the Treasurer show the following: The receipts of the State fund during the year ended Oct. 31, 1895, were: From tax on railroad corporations, \$1,103,956.98; from tax on miscellaneous corporations, \$698,342.36; from collateral inheritance tax, \$121,339.35; from official fees, \$102,751.09; from State Prison receipts, \$52,702.64; from judicial fees, \$31,548.45; from dividends, \$18,870; from loans to sinking fund, \$40,000; from other sources, \$6,420.96; total receipts, \$2,175,931.83; total net receipts being \$2,120,346.59. The ordinary disbursements amounted to \$1,638,893.43; the extraordinary disbursements were \$527,692.70; the special appropriations were \$46,868.49. The balance on hand Oct. 31, 1895, was \$893,747.88, as against \$986,855.91. Among the extraordinary disbursements were \$139,590.23 for the Paterson armory and \$75,295.26 for the Jersey City armory. The estimated resources for 1895 are \$2,965,117.88; the estimated disbursements, \$1,993,529.32; the estimated balance, \$971,588.56.

The war debt (the only debt of the State) has been reduced to \$660,400 by the payment during the year of \$71,000. Of this amount \$44,000 was loaned from the State fund to the sinking fund, which returned \$40,000 to the State fund. The sinking fund at the close of the fiscal year 1894 owed the State fund \$134,819; at the close of 1895 the sum owed was \$138,819. The available assets of the sinking fund are \$413,711.40.

The condition of the school fund is as follows: Total amount of securities Oct. 31, 1895, \$3,508,725.80; securities Oct. 31, 1894, \$3,498,490.77; decrease in school fund securities, \$10,235.03. The cash balance Nov. 1, 1894, was \$218,207.90; gross receipts during the year, \$280,113.21; total, \$498,321.11; gross disbursements during the year, \$332,701.48; balance Oct. 31, 1895, \$165,619.63, out of which sum there must be reinvested in school fund securities \$83,130.11, leaving available for payments required to be made from the income of the school fund \$82,489.52; decrease in cash balance from 1894, \$52,588.27; net decrease in property of the fund, \$62,823.30. The total property of the fund Oct. 31, 1895, was \$3,664,110.40, in addition to which there was due \$66,171.51.

The returns of the taxable property in the several counties as valued in 1895 for taxation in 1896 by the county boards of assessors for school and local purposes give a total of \$786,998,070, an increase over 1894 of \$12,599,738.

The State Board of Assessors this year valued the railroad and canal property at \$221,576,221; and on this amount the tax levied for State purposes is \$1,107,881.10; for local use, \$412,682.02. Property exempt from taxation was valued at \$90,864,564, making the total valuation of property in the State \$1,099,438,855, an increase during the year of \$30,194,640.

**Banks.**—The abstract of the condition of the national banks of New Jersey on Sept. 28, 1895, shows the average reserve to have been 30.46 per cent., against 30.55 per cent. on July 11. Loans and discounts increased from \$48,903,104 to \$61,321,840. Stocks and securities from \$9,222,336 to \$9,272,999. Gold coin decreased from \$1,811,143 to \$1,783,738. Total specie from \$3,356,259 to \$3,076,586. Lawful money reserve from



\$5,819,639 to \$5,211,343. Individual deposits increased from \$53,206,397 to \$56,292,660.

The total resources of the 26 savings banks of the State Jan. 1, 1895, amounted to \$39,995,752, an increase for the year of \$2,266,650. The gain in the number of depositors was 6,263, the total number of open accounts being 144,160.

The number of State banks is 21. The State banking exhibit shows: Loans and discounts, \$7,471,096.76; overdrafts, \$14,441.15; due from banks, \$1,123,012.66; cash on hand, \$505,415.13; stocks and bonds, \$320,069.79; furniture and fixtures, \$33,040.30; bonds and mortgages, \$124,635.11; current expenses and taxes paid, \$41,394.57; checks and other cash items, \$31,601.76; other assets, \$17,606.53; total, \$10,635,113.66.

**Trust Companies.**—The resources of the trust companies were as follow: Bonds and mortgages, \$3,892,392.32; stocks and bonds, \$3,415,056.24; loans secured by collateral, \$4,255,062.38; loans on personal security, including bills purchased, \$2,163,327.32; loans to cities and towns, \$179,000; overdrafts, \$1,782.56; due from banks, \$493,309.89; real estate, \$787,303.85; cash in banks and deposit companies, \$1,779,850.70; cash on hand, \$483,035.21; cash items, \$1,251,269.27; other assets, \$365,538.51; total, \$17,940,729.19.

**Legislative Session.**—The Legislature met Jan. 8, and continued in session until March 22, when a recess to June 4 was taken, and it adjourned June 13. William J. Sewell, Republican, was chosen United States Senator to succeed John R. McPherson.

An act was passed, going into effect March 25, reconstituting the Board of Arbitration, naming 5 persons to constitute the board, each arbitrator to receive an annual salary of \$1,200 a year.

One of the provisions of an act regulating surety companies doing business in the State requires each company to keep on deposit with the Comptroller at least \$50,000 in good securities.

By other acts the organization of the Naval Reserve was provided for.

The Legislature appointed 4 commissions, of 3 persons each, who are to report to the Legislature of 1896. One commission is to revise and codify the corporation laws; a second is to examine the subjects of marriage and divorce, of insolvency, insurance, the form of notarial certificates, and other subjects with a view to securing uniformity of legislation in the several States; the third commission was to investigate the penal laws of the State; and the fourth was to confer with like representatives of New York for the acquisition of the Palisades of the Hudson river by the United States. A commission of 5 persons was appointed to make investigation as to the number and condition of the epileptics in the State.

A concurrent resolution was adopted unanimously by each House that the Comptroller of the State be and he is hereby requested to confer with the Attorney-General, and with his assistants, as law officer of the State, to institute at once legal proceedings to recover for the use of the State all sums of money due the State or illegally withheld by public officers, or custodians of public moneys.

Ninety-seven witnesses were examined by the committee; investigation of the acts of past and

present State officials and of State boards was made, and of business corporations and private individuals as well, and, on the reassembling of the Legislature, a majority report, signed by the 4 Republican members of the committee, was presented, as was also a minority report from the 1 Democratic member, which, in the main, agreed with the conclusions and recommendations of the majority report. The report made sweeping general charges, among them the following:

In the furnishing of coal, lumber, and other supplies for the Statehouse there was deliberate systematic swindling. Quantities and prices were falsely raised, goods being billed to the State and paid for that were never furnished; large percentages were added to bills, sometimes undoubtedly for the benefit of State officers; at other times, possibly, for the benefit of the dealer.

We think that from 1889 to 1894 there was great waste, and, in not a few cases, corruption and bribery of officials in the reconstruction, furnishing, and supplying of the Statehouse. Where gross overcharges and false charges occur, the evidence warrants the belief that it was always by the collusion or acquiescence of some State officer or employee.

The prices were exorbitant, being over double the usual retail price of the goods. Bills were falsified in quantities and prices. Large bonuses and commissions were paid to the State officers. Furniture and carpets paid for by the State were sent to persons holding offices under the State for their private use.

Much remedial legislation was recommended.

Among the bills passed by the Legislature in accordance with these recommendations of the committee, vetoed by the Governor, and passed over his veto, were the following:

Repealing the 17 acts relative to the printing of the laws, proceedings of the Legislature, and public documents.

Providing that the current printing and the printing of the Senate and House journals, minutes of joint meeting and executive sessions shall be awarded to the lowest bidder, the work to be done in the State.

Providing that after Nov. 1, 1895, no money shall be drawn from the treasury unless it shall have been explicitly appropriated by the annual appropriation act to the purpose for which it was drawn.

Providing that the clerk in chancery shall receive no compensation for services in suits brought by the State against corporations.

Among other bills that were passed, some of them over the Governor's veto, were these:

Providing that when parents of children are grossly immoral or unfit to be intrusted with their care and education, or shall neglect them, said children may be taken by petition to the Chancellor or Supreme Court and placed in charge of such person or persons as the court may name.

Allowing persons to give treatment by electricity who are graduates of a reputable medico-electro college of ten years' standing by filing affidavit with the Secretary of State.

Prohibiting the printing of the laws in any but the English language.

Requiring life insurance companies to make no discrimination in favor of individuals between insureds of the same class in amount of premiums paid.

Providing that trust and security companies having an undivided surplus equal to the capital stock need give no bond to act as trustee, guardian, etc.

Making it unlawful to sell loaves of bread weighing less than 1 pound, or any that is impure.

Providing that upon the expiration of the terms of the present Fish Commissioners the Governor, with

confirmation of the Senate, shall appoint 4 persons for terms of five years, who shall be known as the Board of Fish and Game Commissioners, but 2 of which members shall belong to the same political party.

Amending act relative to absconding debtors. Favors defendant relative to attachments.

Authorizing cities to issue bonds to the extent of \$100,000 to purchase condemned lands for public purposes.

Providing that household goods shall not be attached to value of \$200, unless the attachment is issued on account of debt on said household goods.

Securing to creditors an equal and just division of the estate of debtors who convey to assignee for the benefit of creditors.

Providing that the Mayor of Newark may appoint school commissioners.

Appropriating \$200,000 annually to the State School fund.

Appropriating \$325,000 for the improvement of Morris Plains Asylum.

Making a married woman liable on her "promise to pay," providing she has herself received something.

Making a married woman, living with her husband, equally liable with him for goods supplied for the use of the family.

Authorizing boards of education in all municipalities of over 10,000 population to provide free lectures to be given at night for the benefit of the laboring people.

Providing that Lincoln's birthday (Feb. 12) shall be a legal holiday.

As a result of the work done by the Senate Investigating Committee, the grand jury found indictments against John T. Van Cleef, secretary of the State Board of Assessors, as implicated in excessive charges for maps; against Bernard Ford, formerly superintendent of the State Capitol, and John Mullins, from whom he purchased large bills of furniture; against Mrs. Benedict Prieth, proprietress, and John L. Kuser, formerly manager and agent for the Newark "Freie Zeitung," for acts in securing contracts for printing; and, in the same connection, against Otto Heinz, a printer, and against Emil Kraentler, of the Newark "Deutsche Zeitung," and Charles S. Robinson, publisher of the "Princeton Press." Kuser, Robinson, Heinz, and Kraentler were indicted jointly, were tried for conspiracy to defraud the State, and were acquitted. Van Cleef also, who was tried for obtaining money under false pretenses, was acquitted. Bernard Ford during the summer was a fugitive from justice. Mullins was tried for conspiring with him to defraud the State, and was acquitted. On Dec. 24 Ford voluntarily appeared in court and was charged under 4 indictments for obtaining money under false pretenses, under 2 for official misconduct, and under 2 for conspiracy to defraud the State. His bail was fixed at \$1,000 and the date of trial fixed for Feb. 10, 1896.

**Education.**—The school census of 1894 gave the number of children of school age as 423,872. The amount of State school tax for 1894, levied in 1893 and expended in 1895, was \$2,119,360. The school tax for 1895 was \$2,196,240, the number of school children being 439,248. The annual appropriation to public schools was \$100,000. For the normal school \$42,493.76 was expended; for industrial education, \$36,326.35; for the Farnum Preparatory School, \$1,200; for free school libraries, \$4,730; for teachers' institutes, \$1,897.98; for the school census, \$2,066.99. The enrollment of the nor-

mal school was 537, the number of graduates 134. The model school is self-sustaining; its earnings during the year were \$23,349.59, and its enrollment 605.

The annual appropriation for the Agricultural Experiment Station is \$15,000.

The School for Deaf Mutes received for maintenance and tuition, \$37,164; for repairs, \$4,501.74; and \$13,474.15 for its new building. The number of pupils was 126, of whom 65 are boys and 61 girls.

For the blind and feeble-minded the State paid to the 2 institutions at Vineland and to other States \$93,932.57; 381 pupils were cared for, an increase over 1894 of 23 pupils, and of \$6,227.16 in expenditure.

**Hospitals.**—The amount disbursed this year for this account was \$214,958.01, as follows: To State Hospital for the Insane at Trenton, \$68,654.04; to State Hospital at Morris Plains, \$157,306.51; for additional land and buildings at Morris Plains, \$57,651.50. By the last quarterly report the number of county patients in the Trenton hospital was 903; at Morris Plains, 954; insane convicts at Trenton, 21; at Morris Plains, 54. The number of patients at Trenton hospital, Oct. 31, was 1,001; at Morris Plains, 1,116. The number of patients in the county asylums was 3,140, and to these asylums \$114,887.05 was paid. An act of 1895 authorized the expenditure of not more than \$125,000 for buildings at Morris Plains. The foundations have been laid of a new building having a frontage of 530 feet and a total depth of 300 feet. At the Trenton hospital an infirmary, to cost \$35,000, is in process of building.

**Soldiers' Home.**—During the year the average number of beneficiaries was 520; last year it was 509. The expenditures were \$62,698.01; the average cost of ration per day being about 18.5 cents. The total receipts of the year were \$68,166.01; the balance, \$5,467.48. The Legislature of 1895 reduced the annual appropriation \$36,000 to \$30,000, and also converted into the State Treasury a balance to the credit of the home of \$78,619.17. In 1895 the United States Government paid to the home \$32,955.23.

**Penal Institutions.**—For the State Prison \$175,812.08 was disbursed. The receipts from convict labor and other sources were \$52,702.64. The number of convicts Oct. 31 was 977, a decrease of 43 since the report of 1894. The Legislature of 1895 appropriated \$150,000 to enlarge the State Prison. A wing is being added, and a new hospital is under construction.

The Legislature of 1895 appropriated \$100,000 for the purchase of land at or near Rahway, and the erection of a building to be used as a place of confinement for male criminals between the ages of sixteen and thirty who are under sentence for the first time. The land has been secured, and work on one wing is begun, which will accommodate 255 prisoners. The disbursements for this institution amounted to \$81,928.28, of which the State contributed \$60,769.60. Of the special appropriation for water supply and hospital, \$8,936.18 also was paid over. The hospital is in course of erection. The number of inmates at the close of the fiscal year was 376, 86 had been released on their recognizance and 42 indentured.



At the Industrial School for Girls the *per capita* allowance for maintenance and repairs paid by the State amounted to \$20,116.95; the balance of the special appropriation of \$17,000 in 1894 for building an addition to the school, which was \$7,539.77, also was transferred. The expenses for maintenance and general repairs were \$15,385.39. There remained in the school Oct. 31, 119 inmates; 16 were indentured during the year, and 16 previously.

**State Census.**—The fifth State census, among other statistics, gives the following: Total population, 1,672,942; white males, 621,111; white females, 635,649; colored males, 28,714; colored females, 30,296; males, Irish, 41,814; females, Irish, 51,619; males, German, 62,885; females, German, 55,938; males, other nationalities, 80,513; females, other nationalities, 64,403; males under twenty years of age, 335,572; males over twenty, 499,465. The number of dwelling houses is 279,755; the number of families, 357,373.

**Road Building.**—The Road Commissioner reports, as work done under the commission, that 46.11 miles of highway have been completed, that 49.12 miles have been approved, and that applications have been filed for 130 miles of stone road.

An act of the last Legislature makes an annual appropriation of \$100,000 for road building. It makes the State pay 33½ per cent. of the cost of construction, the property owners 10 per cent., and the county the remainder.

**Electric Roads.**—The first rails of the trolley system that is to connect New York and Philadelphia were laid in February at Raritan. The plan of laying the rails along one side of the highway will be generally enforced by the county and township officials as a means of lessening the danger of the trolley and preventing the obstruction of public travel. The electric line between Burlington and Mount Holly was completed in July, and at first was operated by steam power, as the electric motors were not ready.

**The Palisades.**—The commissioners from New Jersey and New York agreed on a report to be presented to the Legislature of each State. This report states that the commissioners are of opinion that a portion of the Palisades, including the cliffs, should be preserved and held by the United States in order that it may remain open and unobstructed, and they recommend the passage of an act by Congress to provide for the purchase of the lands, and to establish a military and national park. They also propose that New York and New Jersey cede jurisdiction of certain lands to the United States for specified purposes and under conditions.

**Memorial Tablets.**—Two stone tablets to mark the place at which Gen. Washington and the Continental army crossed the Delaware river on Christmas night, 1776, preceding the battle of Trenton, were dedicated at Taylorsville, Pa., and Washington's Crossing, N. J., Oct. 15. The Pennsylvania monument was erected by the Buck's County Historical Society, and the New Jersey monument by the Society of the Cincinnati in the State of New Jersey.

**Decisions.**—By the last Legislature a naturalization act, making fraud more difficult, was passed, the Attorney-General having previously

declared it unconstitutional. The act defines which of the State courts shall have jurisdiction over the subject of naturalization, eliminating therefrom the courts of common pleas. The question of its constitutionality was brought before the Supreme Court on an application for mandamus, and on Aug. 31 Justice Van Syckel delivered an opinion by which the constitutionality of the act was upheld.

On March 14 an elective-judiciary act was passed over the Governor's veto, the effect of which was to give the people the power to select their own county judges. On Sept. 9 Justice Van Syckel, Justice Lippincott concurring, rendered a decision declaring the law invalid, because it merely changed the name of the county courts, while it sought to deprive the Governor of his constitutional right of appointing the judiciary. On Sept. 15 Justice Magie filed an opinion dissenting from the opinion of the other members of the court.

On March 5 Justice Van Syckel filed a memorandum declaring unconstitutional the Short law, under which Montclair and other Essex municipalities were incorporated.

On Feb. 26 Justice Reed filed an opinion in the Cranbury School case, argued at the November term, 1894. At a special meeting calling the legal voters of the township together to cast their votes authorizing certain expenditures, many women voted. Objections were raised, but the court decided, regarding the votes cast by women, that the act of 1887 allowed it, and in view of this the assessments made by the township authorities were affirmed.

A suit was brought to test the legality of the act passed March 20, 1889. This act fixed a minimum license fee in respect to population. In the township of Stafford the minimum fee was fixed at \$2,000. The population of the township is only 1,000. Justice Van Syckel pronounced the act unconstitutional.

**Political.**—The convention of the Prohibition party was held June 14. The platform declares for public ownership of all State and municipal monopolies, for woman suffrage, for a more equal distribution of the products of labor, for a free and untrammelled press. The last Legislature is arraigned for "truckling to the interests of the liquor and monopoly power." Henry W. Wilbur was nominated for Governor.

On Sept. 19 a Republican convention was held in Trenton. The essential portions of the platform were as follow:

We reaffirm our opposition to any attempt to impose upon this country a debased or depreciated currency and our firm belief in the wisdom and beneficence of a tax upon imports which will afford protection to American industries and adequate revenue. We reaffirm our purpose of restoring to New Jersey a clean and honest government.

We pledge ourselves to oppose any attempt to impose upon the people a tax for the support of the State government, any attempt to impair or divert from its proper use the fund for the support of the free public schools. We pledge ourselves to the abolition of unnecessary offices and the reduction of excessive salaries.

John W. Griggs was nominated for Governor. The Democratic convention was held in Trenton, Sept. 26. Among the declarations of the platform are the following:

We reaffirm the national Democratic platform adopted at Chicago in 1892, and cordially indorse the administration of President Cleveland.

We congratulate the people upon the revival of prosperity everywhere evident in our land, and we assert that the industrial depression with which we have been afflicted during the past three years is chargeable to the national legislation enacted by the Republican party. The purchase of silver to be stored in the Treasury and the enactment of unjust tariff laws to enrich a few favorites by the oppression of millions of consumers were the main causes of the paralyzation of our markets.

We denounce as maliciously false the statements of the Republican State platform that the government of New Jersey has been conducted by the Democratic party in a dishonest or extravagant manner.

We favor the adoption of a constitutional amendment that will render impossible any law for the legalization of gambling in any form.

We pledge the Democratic party to the enactment of laws that will secure to the people of New Jersey control of the potable waters of the State.

We condemn the action of the late Republican Legislature, which ridiculed every request made for legislation in the interest of organized labor and repealed acts passed by Democratic Legislatures for the protection of the wage workers of New Jersey.

Alexander T. McGill was nominated for Governor.

At the election in November 5 candidates were voted for. In addition to those above named the People's party, by petition, nominated William B. Ellis, and the Socialist-Labor party, by petition, nominated Joseph B. Keim. The result was the success of the Republican party, the Republican candidate for Governor and the 7 Republican State Senators being elected. The vote for Governor was as follows: Griggs, Republican, 162,900; McGill, Democrat, 136,000; Ellis, Populist, 1,901; Wilbur, Prohibitionist, 6,661; Keim, Labor, 4,147. The total vote was 311,609; in 1892 it was 336,871. The Legislature in 1895 was composed of 18 Republicans in the Senate and 43 in the House, and 3 Democrats in the Senate and 17 in the House.

**NEW MEXICO**, a Territory of the United States, organized Sept. 9, 1850; area, 122,580 square miles. The population, according to each decennial census, was 61,547 in 1850; 93,516 in 1860; 91,874 in 1870; 119,565 in 1880; and 153,593 in 1890. Capital, Santa Fé.

**Government.**—The following were the Territorial officers during the year: Governor, William T. Thornton, Democrat; Secretary, Lorion Miller; Treasurer, S. Eldodt; Auditor, Marcellus Garcia; Adjutant General, G. W. Knable; Solicitor-General, J. P. Victory; Superintendent of Public Instruction, Amado Chavez; Chief Justice of the Supreme Court, Thomas Smith; Associate Justices, N. C. Collier, N. B. Laughlin, G. D. Bantz, H. B. Hamilton; Clerk, George L. Wyllys.

**Finances.**—The receipts for the last two quarters of the forty-fifth fiscal year were \$168,795.30; the expenditures, \$134,455.96. The receipts for the first two quarters of the forty-sixth fiscal year to Sept. 1, 1895, were \$100,580.44; the expenditures were \$104,368.34. For appropriations made by the 31st Legislative Assembly the total sum of \$21,758.29 was paid.

The Territorial indebtedness July 25, 1895, was: Capitol building bonds, 7 per cent., \$200,000; Capitol contingent fund bonds, 6 per cent.,

\$50,000; current expense bonds, 6 per cent., \$150,000; provisional indebtedness bonds, 6 per cent., \$200,000; Insane Asylum bonds, 6 per cent., \$25,000; casual deficit bonds, 5 per cent., \$100,800; refunding bonds, 6 per cent., \$101,000; Penitentiary refunding bonds, 6 per cent., \$81,000; total bonded indebtedness, \$907,800.

**Valuation and Taxation.**—From the Governor's report to June 25, 1895, the following figures are taken: Valuation of lands in 1894, \$12,780,909.77; of houses and improvements, \$5,969,048.16; of 63,623 horses, \$1,263,613.65; of 3,724 mules, \$140,732.88. Upon the foregoing property the rate of assessment for 1894 was as follows: For Territorial purposes, 6 mills on the dollar; for casual deficit bonds, interest, 0.25 mills; for Territorial institutions, 1.50 mill; total rate of 7.75 mills. To the above rate is added one half of a mill on the assessed value of cattle. The total assessed value of all kinds of property was \$41,128,620.95; the exemptions of all kinds were \$2,038,119.31; balance subject to taxation, \$39,090,501.64. On this amount the arithmetical product of taxes for the forty-sixth fiscal year is: For Territorial purposes, \$233,683.61; for casual deficit, bond interest, \$10,288.98; for Territorial institutions, \$58,435.28; for cattle indemnity, \$2,227.69; total, \$304,636.56. The receipts in the treasury during the first three quarters of the forty-fifth fiscal year amounted to \$186,281.06.

A new tax law provides that after Jan. 1, 1895, "city councils and boards of trustees of incorporated towns shall have power and authority to levy taxes upon the same classes of property, 'real, personal, and mixed, within the limits of such city or town, as are subject to taxation for territory and county purposes for city or town purposes,' provided that only 1 per cent. shall be levied or collected upon the value of said property as assessed by such city or town."

**Education.**—The receipts during the school year, including balance due Dec. 1, 1894, were \$118,771.20. Expenditures: Teachers' wages, \$56,229.07; rent, fuel, etc., \$10,055.23; school-houses and grounds, \$6,935.75; on hand, \$26,929.09; total, \$115,820.94. The number of teachers was 403; and of schools 310, with an enrollment of 14,507 pupils. The School of Mines, which had been closed for a year, was reopened in September, with a fair attendance. The normal school at Silver City opened with about 100 students. The last Legislature appropriated \$10,000 for enlarging its buildings, and the same amount for the normal school at Las Vegas, which has not yet been opened. For the enlargement of the Agricultural College, where 85 students were entered in September, \$15,000 was voted, and for the Military Institute at Roswell a bond issue of \$15,000 was authorized. During the year the United States Government assumed control of the Ramona Indian school for girls, at Santa Fé.

The Asylum for the Deaf, Dumb, and Blind had under instruction during the year 10 deaf and 9 blind pupils.

**Charities.**—The 4 hospitals receiving Territorial aid are in good condition, and not hampered by lack of necessary funds. The number of patients received at the St. Vincent Hospital,



at Santa Fé, during the year ended March 4, 1895, was 131; the number treated was 158. The expenditures were \$7,119.67, and the legislative appropriation was \$6,000. To the Orphans' Home and Industrial School, for girls only, the expenses of which were \$5,872, for the care of 67 pupils during the year \$5,000 was appropriated.

For the enlargement of the Insane Asylum, which is very much crowded, an issue of bonds to the amount of \$35,000 was authorized.

**Penitentiary.**—There remained in the Penitentiary June 30, 1895, 191 prisoners, 264 being the total number in confinement during the year, a daily average of 166. The cost of maintenance has been reduced from 43 cents a day to 38.84 cents.

**Legislative Session.**—The Legislature organized Jan. 3 and adjourned Feb. 28. About 60 bills passed the two houses, but several of them failed to reach the Governor in time. With the exception of the appropriation bills and one or two other measures, very few general laws were enacted. Among them are the following:

Regulating cattle brands.

Prohibiting the sale of tobacco or giving it, in any form, to persons under eighteen years of age.

Amending chapter li of the laws of the twenty-eighth Assembly, so that no property shall be sold under decree until ninety days after the date of such decree.

Repealing certain sections of the Compiled Laws, so that a married woman is not now compelled to live with her husband irrespective of his treatment of her.

Providing for the probating of foreign wills.

Regulating the practice of medicine and establishing a board of health.

Authorizing the funding of outstanding indebtedness.

Allowing the funding of school warrants.

Providing that half of the delinquent Territorial taxes, amounting to about \$400,000, shall, when collected, be utilized for court purposes, the rest to go to the payment of interest on county bonded debts.

Providing for service of process in suits against nonresidents by publication.

Giving the Cattle Sanitary Board jurisdiction over diseased cattle.

Providing for the appointment of sheep inspectors.

Among bills carrying appropriations, in addition to the general biennial appropriation bill, were these:

Providing a bond issue of \$75,000 for the erection of the Capitol at Santa Fé; and one of \$15,000 for the New Mexico Institute, at Roswell.

Establishing a weather and crop service for collection of crop statistics and climatological data.

**Court of Private Land Claims.**—In this court there were tried between Aug. 13, 1894, and June 26, 1895, 37 suits, involving the ownership of 15,731,818 acres, the grant of 589,096 acres being confirmed. A claim for 10,000,000 acres in Arizona and 2,000,000 acres in New Mexico—known as the Peralta-Reavis grant—was brought before the New Mexico court and proved to be fraudulent. A rectangular tract was involved measuring 75 miles from north to south and 225 miles from east to west, and containing, in Arizona, the State capital, Phoenix, and the towns of Florence, Maricopa, Clifton, and others,

and supporting a population of more than 40,000 people. On March 27, 1883, James Addison Reavis filed in Arizona a petition setting forth that, by purchase from the heirs of the original grantee, he had become the owner of a tract in New Spain granted by Ferdinand VI of Spain to Miguel de Peralta de la Cordoba in 1748, located in 1758; the grant and location being confirmed by Carlos III. Upon this showing, sustained by pretended original documents from the Government archives of the city of Mexico, duly attested transcripts of the record in the city of Guadalajara, etc., Reavis petitioned the Surveyor General to recommend the confirmation of the alleged grant to him by the United States. After thorough investigation the prayer of the petitioner was denied, forgery and fraud being asserted. But while the claim was pending, on Sept. 2, 1887, Reavis filed an amended claim to the property under the title of his alleged wife, Doña Sofia Loreto Micaela de Peralta Reavis, née Maso y Silva de Peralta de Cordoba, alleged granddaughter of the original Miguel de Peralta de la Cordoba, and signed himself thereto as James Addison Peralta Reavis. This claim called for a still larger tract, and the suggestions of the Surveyor General in his adverse report were used to strengthen and perfect it. The pretended grant claim was filed for confirmation in the United States Court of Private Land Claims in Santa Fé, Feb. 18, 1893. Matthew G. Reynolds began the investigation on the part of the Government; experts were sent on investigating missions to Mexico and Spain and to California, and even judges of the court went to California, to Mexico, and to Spain to take testimony, with the final result of proving, in 1895, that the whole structure was a forgery; that no Miguel de Peralta ever existed, that no such grant as alleged was ever made, and that the wife of Reavis was really the daughter of one John Treadway and a Digger-Indian squaw.

**Supreme Court Decisions.**—A decision of this court given in October ends the suit of the Bent heirs against the Maxwell Land Grant Company, involving the title to a twelfth interest in the Maxwell grant, a case that has been before the courts for thirty-five years. The decision was a complete victory for the Maxwell Company.

**The Capitol.**—In 1884 the Territory issued \$200,000 of bonds at 7 per cent., and in 1887 \$50,000 at 6 per cent., to erect and furnish a Capitol building. In 1892, soon after its completion, it was burned; but figures given by the Capitol Custodian Committee show that the value of the uninjured portion of the building is not less than \$45,000. The last Legislature authorized the issue of bonds to the amount of \$75,000 at 5 per cent. to restore the building, and work was at once begun.

**Irrigation.**—The fourth annual Irrigation Congress met at Albuquerque, Sept. 16, delegates from Kansas, Nebraska, Texas, Colorado, California, Arizona, Utah, Oklahoma, and New Mexico, as well as Mexico and Canada, being present. It was asserted that the reclaiming of arid lands made additional legislation necessary, and the control by the General Government of the various irrigating systems was strongly advocated. Following is an account, under date

of Aug. 16, 1895, of what has been accomplished within a year in the Bluewater valley, Valencia County, through irrigation :

The Bluewater valley was nine months ago an arid, dry, sandy, and wind-swept waste. On Aug. 24, 1894, we placed our first scraperful of earth upon our proposed dam, since which time we have constructed a dam 150 feet base, 260 feet long, and 42 feet high. Capacity, 6,000 acre-feet of water. Waste-way cut through the solid rock mountain at south end of dam 170 feet long, 100 feet mouth, 30 feet throat, 20 feet width, with perpendicular fall of 6 feet at throat, and 4 feet fall from there to lower end. We have constructed 31 miles of canals and laterals—20 feet wide, 1 foot deep; 12 feet wide, 2 feet deep; and 8 feet wide, 3 feet deep, much of the work being done around rocky points and stony hillsides. Have cleared and plowed 2,600 acres sage-brush land, and have planted 2,000 acres. We have magnificent stands of grain in all our fields. Sugar and mangel beets have proved a great success.

**NEW YORK**, a Middle State, one of the original thirteen, ratified the Constitution July 26, 1788; area, 49,170 square miles. The population, according to each decennial census, was 340,120 in 1790; 589,051 in 1800; 959,049 in 1810; 1,372,111 in 1820; 1,918,608 in 1830; 2,428,921 in 1840; 3,097,394 in 1850; 3,880,735 in 1860; 4,382,759 in 1870; 5,082,871 in 1880; and 5,997,853 in 1890. According to a State census taken in 1892, the population was 6,513,344. Capital, Albany.

**Government.**—The following were the State officers during the year: Governor, Levi P. Morton, Republican; Lieutenant Governor, Charles T. Saxton; Secretary of State, John Palmer; Comptroller, James A. Roberts; Treasurer, Addison B. Colvin; Attorney-General, Theodore E. Hancock; State Engineer and Surveyor, Campbell W. Adams; Superintendent of Public Instruction, James F. Crooker, who was succeeded on April 6 by Charles R. Skinner; Superintendent of Insurance, James F. Pierce; Superintendent of Banking Department, Charles M. Preston; Superintendent of State Prisons, Austin Lathrop; Superintendent of Public Works, George W. Aldridge; Commissioner of Statistics of Labor, Thomas J. Dowling; Railroad Commissioners, Michael Rickard, S. A. Beardsley, and Alfred C. Chapin; Chief Judge of the Court of Appeals, Charles Andrews; Associate Judges, Albert Haight, John C. Gray, Rufus W. Peckham (who resigned in December to become an Associate Justice of the Supreme Court of the United States, and was succeeded, Dec. 31, by Irving G. Vaun), Denis O'Brien, Francis M. Finch, Edward T. Bartlett, Robert Earl.

**Finances.**—The balance in the treasury on Oct. 1, 1895, was \$811,762.98, as compared with \$1,548,286.57 Sept. 30, 1894. The receipts were \$19,630,121.83, as compared with \$18,537,948.03 in 1894. The expenditures were \$20,366,646.42, as compared with \$20,183,011.13 in 1894. There was a balance at the beginning of the year of \$1,548,286.57. The actual receipts of the year were \$736,524.59 less than the expenditures, but a balance on hand was available for paying the State's debts. In October, 1893, the beginning of the fiscal year preceding, there was a balance of \$3,183,349.67. This year's balance was only \$811,762.98, so that the working funds of the State are less than they have been for several years. This is due to the falling off in the col-

lateral-inheritance tax, the abolition of the pool-selling tax, and increased expenditures for the insane.

The Comptroller reports that the receipts from the corporations for 1895 were as follow: Insurance companies on premiums, \$132,588.04; insurance companies on capital, \$15,061.45; transportation companies on earnings, \$403,992.54; telephone and telegraph companies on earnings, \$30,460.26; transportation companies on capital, \$615,457.63; telephone and telegraph companies on capital, \$34,865.31; gas, electric, and miscellaneous corporations, \$589,243.65; foreign banks, \$34,306.47; total, \$1,855,975.35.

There was collected in 1895 \$1,367.90 from foreign corporations as license fees, making the total amount received from corporations \$1,857,343.25, an increase of \$211,464.37 over 1894. The Comptroller's department collected \$95,980.54 from the racing societies of the State, which was distributed among agricultural societies. Since this sum was distributed \$16,546.57 has been collected, making the total \$112,527.11. The State tax rate is 3.24 mills. Last year it was 2.18. The tax is to be distributed as follows: For schools, 0.94 mill; for canals, 0.36 mill; for general purposes, 0.94 mill; for State care of insane, 1 mill. This tax of 3.24 mills on the present valuation, \$4,292,082,167, will yield \$13,906,346.23, distributed as follows: General tax, \$4,034,557.24; schools, \$4,034,557.24; canals, \$1,545,149.58; State care of insane, \$4,292,082.17; total, \$13,906,346.23. The amount received from the corporation and organization tax for the year ending Sept. 30, 1895, was \$2,115,807.85.

**Wealth of the State.**—The total amount of property in the State in 1894, as assessed by the local assessors, was \$4,433,776,127. It was divided as follows: Real estate, \$3,841,582,748; personal property, \$592,193,379. Of the personal property so assessed, \$111,693,960 was corporate property not subject to taxation locally for State purposes. The amount of property, both real and personal, subject to taxation locally for all purposes was \$4,292,082,167. The total increase in the taxable property locally for all purposes was \$92,200,109, divided as follows: Real, \$79,903,364; personal, \$12,296,745.

**Legislative Session.**—The one hundred and eighteenth regular session of the Legislature began on Jan. 2, 1895, and continued until May 16. As elected, the Senate consisted of 18 Republicans, 13 Democrats, and 1 Independent Democrat; and the Assembly of 105 Republicans and 23 Democrats. The organization being in the hands of the Republicans, Edmund O'Connor was chosen President *pro tem.* of the Senate and Hamilton Fish, Jr., Speaker of the Assembly. During the session 1,045 bills were signed, the largest number in any one year in the history of the State.

On the last day of the session a special Senate committee, appointed to investigate the bribery charges against Senators Coggeshall, Robertson, and Raines, in connection with the passage of the New York City Firemen's Salary bill, and in connection with an amendment increasing the salary of the officers of the New York City Fire Department, submitted a report exonerating the Senators mentioned. Also at the close of the session Assemblyman Vachon was called be-



fore the Court of Oyer and Terminer and pleaded not guilty to the indictment for bribery in connection with the legislative bill regulating the cutting of ice on Hudson river.

Among the most important measures adopted are the following:

Concerning New York city: A bill giving the mayor power of removal; abolishing the police justices and creating a bench of city magistrates; creating a tenement-house commission's bill; providing for the separation of the Bureau of Charities and Correction; four tenement-house reform bills; a bill for the consolidation of the Astor, Lenox, and Tilden libraries; establishing a great zoological garden; a rapid-transit bill; providing for two additional assistant district attorneys in New York city at \$7,500 a year each.

Requiring the display of the United States flag on every schoolhouse.

Providing for a broader study of the nature and effects of alcoholic drinks and other narcotics in connection with physiology and hygiene in the public schools.

To protect colored citizens in their civil and legal rights. The bill provides that all persons within the jurisdiction of this State shall be entitled to the full and equal accommodations, advantages, facilities, and privileges of inns, restaurants, hotels, eating houses, bath houses, barber shops, theaters, music halls, public conveyances on land and water, and all other places of public accommodation or amusement, subject only to the conditions and limitations established by law and applicable alike to all citizens.

Authorizing the city of Brooklyn to make yearly provision for celebration of Washington's birthday.

Amending the Rochester charter and to extend the city boundaries.

Making appropriations for continuing the work of erecting monuments and memorial structures in honor of New York troops engaged in the military operations around Chattanooga in 1863.

Appropriating \$3,000 for a monument to Gen. Nicholas Herkimer in Danube, Herkimer County.

Providing a commission to prepare and submit to the next Legislature general city laws relating to cities of fewer than 50,000 inhabitants.

Appropriating \$75,000 for the erection at the Genesee State Normal School of a new building for the scientific department.

Amending the law providing for incorporation of associations for lending money on personal property in counties of over 300,000 inhabitants.

Imposing a tax of 1 mill on each dollar of real and personal property for the State care of the insane for the year beginning Oct. 1, 1895.

Prohibiting barbering on Sunday, except in New York and Saratoga, where barbers may keep open until 1 p. m.

Providing for the issue by the city of Brooklyn of bonds to be known as "consolidated stock of the city of Brooklyn," payable in gold or currency.

Allowing the American Geographical Society of New York to take and hold real and personal property to the amount of \$1,000,000.

Providing for the issue of mileage books by railroad corporations at not exceeding 2 cents a mile by every road over 100 miles long. The law applies only to roads authorized by law to charge a maximum fare of more than 2 cents a mile, and not more than 3 cents.

Submitting to the people the question of appropriating \$9,000,000 to enlarge the Erie Canal.

Amending the foreign corporation tax law, which will add at least \$100,000 annually to the income of the State.

A blanket-ballot bill.

The constitutional requirement that all bills affecting cities must be approved by the mayors

and common councils, caused a large amount of unnecessary legislation. At the close of the session there was sent to the various mayors of cities 272 bills. Of these, 68 went to the city of New York, 74 to Brooklyn, 11 to Buffalo, 29 to the cities of the second class, and 90 to the cities of the third class. Of these, 170 were approved, 19 were rejected, and 83 remained in the hands of the city authorities.

The appropriation was \$4,300,000 higher than in 1894. Of this, \$500,000 was left from 1894.

Among the State commissions created by act of Legislature, are the following: The most important one, the Capitol Commission excepted, is that consisting of 8 persons, 1 residing in each judicial district, who shall constitute a State Commission of Prisons. This commission is to visit all penal institutions for sane convicts and institutions used for witnesses or debtors, to aid in securing just, humane, and economic administration.

Another commission, composed of 5 persons, has for its object an investigation in relation to the organization and government of the Legislature, the introduction and progression of bills, and generally in relation to legislative business and methods.

For the proper maintenance and efficiency of the military and naval forces of the State within 1895, a commission was named of 3 citizens as a board of examiners to test improved arms.

Another commission consisted of 3 members of the bar, who are to examine the Code of Procedure of the State and the codes of procedure and practice acts in force in other States and countries, and the rules of court.

A commission was named to formulate legislation for government of cities of the second class.

Also a commission to prepare general city laws relating to cities of the third class.

The State Board of Health was empowered to appoint 2 of its members a commission to carry out the law relating to tuberculosis in cattle.

**Banking.**—During 1895 the depositors' organization of the Commercial Bank of Brooklyn preferred charges against Superintendent Charles M. Preston, alleging that he was incompetent and that the banking department has been conducted for years in the interest of speculators. Similar charges were filed with Gov. Flower, and were dismissed by him, Dec. 13, 1895, and after examination Gov. Morton issued an order dismissing the charges.

The annual statements of the 27 New York city and Brooklyn trust companies filed with the State Superintendent of Banking, shows in the aggregate: Resources, \$373,901,353; profits, \$15,652,863; dividends, \$3,770,000.

**Corporations.**—There were 1,423 corporations with capital stocks formed during 1895 which paid taxes amounting to \$258,464.60.

The telephone, railroad, and land companies to a large extent made up the great total of the corporations for 1895. The 1,423 corporations formed during the calendar year paid taxes in the aggregate of \$492,445.05, on aggregate capitalizations of \$393,956,000. The combined capital of 1894 (calendar year) was \$106,390,400. The business of 1895 shows that more than 60 new railroad companies were incorporated, and

that 27 of the new corporations have each a capital of \$1,000,000 or over.

**Law.**—An important case was decided in the State's favor by the United States Supreme Court, that against the United States, involving the sum of \$131,188 for enrolling, subsisting, clothing, etc., of troops furnished in the war of the rebellion. In the Court of Appeals, of the cases with a pecuniary interest and principle involved, the most important was that of the People *ex rel.* Roberts, as State Comptroller, against Fitch, as Comptroller of New York city. By the court's decision the defendant will pay over to the State \$714,568, with interest, as its share of the tax of 1893 levied for the care of the State's insane. The number of cases in which the State is party on appeal pending in the Court of Appeals is 24 against 31 a year ago.

**Insurance.**—The aggregate receipts of New York State companies in 1894 were \$161,714,963; other States' companies, \$94,909,514; making the gross receipts \$256,624,477. The net excess of receipts over disbursements for 1894 was \$78,761,144. The total premium receipts for 1894 were \$205,132,043.86. The disbursements were \$177,863,333, of which \$116,054,725 was paid to policyholders, while the cost of management, including dividends to stockholders, was \$618,08,608.

There was an increase in the number of policies of 102,219, and of insurance \$147,880,810. At the close of 1894 the companies doing business in the State had 1,780,307 policies in force, insuring \$4,657,583,046.

The co-operative organizations received \$47-786,347 from members last year, against \$42,937,992 the preceding year. The claims paid by them last year aggregated \$38,921,664, against \$35,191,664 the preceding year.

**Claims.**—The annual report of the Board of Claims for 1895 shows that since its creation in 1883 it has heard and decided 2,382 claims against the State, claiming in the aggregate \$5,397,070, exclusive of interest, and has awarded thereon \$1,316,328. This number of decisions is exclusive of those made from 1884 to 1891 in appeals from the Board of Canal Appraisers to the Canal Board, 273 of which, in May, 1884, were transferred to the board by chapter cccxxix of the Laws of 1884.

**Education.**—The biennial school census, taken during 1895 in all of the cities and villages of the State exceeding 10,000 in population, revealed the necessities for additional school facilities. In it occurred the one hundredth anniversary of the inauguration of the free-school system in the United States, under the administration of Gov. George Clinton. The first act, chapter lxxv, Laws of 1795, provided that the sum of £20,000 should be annually appropriated for the term of five years, "for the purpose of encouraging and maintaining schools in the several cities and towns in this State."

The number of public-school buildings in 1894 was 11,121, a decrease of 49, caused by consolidation of districts. The amount expended for schoolhouses was \$4,139,295.87, of which the cities expended \$2,916,950.21 and the country \$1,222,345.66. The total number of persons of school age was 1,932,295, of whom the cities claim 1,208,855 and the country 723,440. The to-

tal increase in school population during the year was 39,937. The total attendance at school—cities, 589,363; country, 535,635; increase, 41,770. The total number of teachers, 32,929, of whom 5,096 were men and 27,833 were women. The total amount of teachers' salaries was: Cities, \$7,264,613.25, an increase of \$117,920.20; and in country districts, \$4,788,404.01, an increase of \$52,002.12.

**Tuberculosis.**—The State Commission on Tuberculosis in Cattle made its first annual report to the Legislature in January, 1895. During the year and a half following the passage of the Tuberculosis act 22,000 cattle were examined and 800 were slaughtered. The Commission on Tuberculosis in Cattle was constituted May 31, 1894, to inquire further into the existence of the disease. This commission has carefully studied, by a system of special inspection, the prevalence, distribution, mode of infection, and general behavior of tuberculosis in cattle, confining part of its work to a given area, which was thought to be comparatively free from general infection from other sources. In this district 947 animals were examined and 66 were condemned.

**Prisons.**—In the year ended Sept. 30, 1894, the prison population had increased to 3,624.

The deficiency for care and maintenance was \$111,195 less than in 1893. More money was earned by the prisoners, and less was spent for maintenance. The expenditures for 1894 were less than those of 1893 by \$38,894.

The earnings of the prisoners show an increase of \$72,300 after deducting two items, namely, for fire loss in Auburn prison, \$27,897, and bills receivable canceled by act of the Legislature on account of the fire of 1893, amounting to \$14,845. The expenditures for the care and maintenance of the three State prisons and their earnings are shown as follow:

Sing Sing—Expenditures, \$150,314; industry, \$63,952; compensation paid convicts, \$7,670; deficiency, \$94,532.

Auburn—Expenditures, \$157,264; earnings, \$77,363; loss by fire, \$27,897; account due and canceled by Legislature, \$14,845; compensation paid convicts, \$6,239; deficiency, \$128,883.

Clinton—Expenditures, \$157,191; earnings, \$17,858; compensation paid convicts, \$3,323; deficiency, \$142,656.

There were 104 prisoners in the women's prison.

A State Commission of Prisons made at the close of 1895 its first annual report. It shows that the unfair competition caused by contracting out the labor cheaply has disturbed the market, injured some industries, and driven others out entirely. The manufacturing on State account for sale in the open market worked even more disastrously, for the reason that the cry against prison-made goods forced the State to sell below the prices that other manufacturers could afford, and thus had the same effect in disturbing the market, while the large expense of commissions and expenses of sales agents made it even more expensive to the State. The commission called for estimates from all public institutions of the supplies purchased by them of such articles as can be manufactured in the prisons, and finds that it is practicable to have



such estimates each year and upon them base a distribution of the labor of filling the orders among the several penal institutions. All the labor of the convicts in the Blackwell's Island penitentiary is devoted to the use of the public institutions of New York city alone, and can not half supply them. In this way New York city gets the full value of the labor of its convicts.

**Canals.**—The financial report shows an expenditure out of the ordinary repair fund of \$754,362.70. There was expended for improvement of the canals, under special appropriations, \$551,120.37. The number of tons carried upon the canals during the season of 1895 was 3,500,314, of which 2,327,481 tons were in transit toward tide water and 1,172,835 tons were moved westward. Of these amounts, 1,762,663 tons were through freight and 1,797,651 tons were way freight. The amounts carried by the several canals were as follow: Erie, 2,356,048 tons; Champlain, 966,335; Oswego, 64,691; Black River, 64,154; and Cayuga and Seneca, 49,050; total, 3,500,341.

In 1895 the Legislature passed a law submitting to the people the proposition to issue bonds of the State not to exceed \$9,000,000 for the improvement of the Erie, the Champlain, and the Oswego Canals, by deepening the Erie and Oswego Canals to a depth of not less than 9 feet and the Champlain Canal to 7 feet of water, and also lengthening and improving the locks and strengthening the walls. The act was approved by the people by a majority vote of 243,770. This law requires the Legislature annually to impose a tax of  $\frac{13}{100}$  of a mill on each dollar of valuation of real and personal property in the State subject to taxation, the proceeds of which, after paying the interest due upon the bonds, shall be invested by the Comptroller, under the direction of the commissioners of the Canal fund, and together with the interest arising therefrom shall be devoted to the sinking fund created for this purpose.

The experiments with electric motors for canal-boat propulsion made at the western end of the Erie Canal in October were so successful as to lead to the belief that when the system is applied to the entire canal it will increase its traffic capacity at least 35 per cent.

**Labor Troubles.**—More than 400 strikes and lockouts occurred during the year ending Oct. 31, 1895. Of these, 80 lasted less than twenty-four hours, while nearly 200 were settled within three or four days. The most disastrous strike began Jan. 14, 1895, when about 4,500 men employed by trolley railroads of Brooklyn quit work. The workmen claimed that the strike was precipitated by the locking out of some of their associates. Agreements fixing the conditions of labor had for several years been entered into between the roads and their employees. The Brooklyn Heights Company controlled the largest system, embracing 26 lines. Its agreement expired in January. Conferences were held before the strike, with a view to renewal of the agreement between the labor organization and the officials of the company. The men demanded an advance in wages of 25 cents a day and the maintaining of the proportion of two-thirds "full-day" men to one-third "trippers," or extra men. Just before the tie-up the men

waived the demand for additional pay, but insisted on the proposed number of "trippers." This the companies refused to concede, and a tie-up was ordered on all the lines in the city. The Board of Arbitration at once undertook to settle the differences between the companies and the strikers, among whom were included motormen, conductors, linemen, electricians, and other employees. At two o'clock on the morning of the fourth day of the strike the board effected a settlement between the officials of the Brooklyn City and Newtown Company and its striking employees, and the same day the 300 men on that system returned to work. During the one month's existence of the strike the board made repeated efforts, in conjunction with the Mayor of Brooklyn, to adjust the troubles. The officers of the two largest systems declined to arbitrate or treat with the strikers, despite the fact that the companies were unable to fill the places of the old men with competent workers, and further, that the city of Brooklyn was an armed camp, the militia of New York city and Brooklyn having been called to assist the police in preserving order, at the request of the mayor. The strike was declared off Feb. 16, and many of the strikers were taken back. A boycott by organized labor was prosecuted against the roads until Aug. 9, when the board, through one of its members, secured concessions from the new management of the Brooklyn Heights Company by which the old employees were guaranteed situations as rapidly as vacancies occurred, and the boycott on that system was removed.

**Railroads.**—The report on the financial operations of the railroads is for the year ended June 30, 1895. The increase of earnings for 1895 was \$1,241,039; decrease in operating expenses, \$702,970; increase in net earnings from operation, \$1,944,010. The decrease in net earnings for 1894 was \$4,364,171, while the decrease in income from operation that year was \$10,399,511, showing that \$6,035,340 of the loss was made up by a reduction in operating expenses which have therefore been reduced nearly \$7,000,000 since June 30, 1893. Capital stock shows a decrease this year of \$12,812,614; cost of road and equipment, decrease, \$19,672,129; funded debt, decrease, \$1,264,021; nonfunded debt, increase, \$13,941,656. The percentage of dividends declared on capital stock is 2'63, against 2'69 in 1894. The decrease in number of passengers carried during 1895 was 1,262,175. This is accounted for partly by the World's Fair traffic reported for the year ended June 30, 1894. The freight business shows an increase of 1,475,777,099 in the number of tons carried one mile.

**Labor Statistics.**—In 1894 580 organizations reported 118,628 members. The returns received from 689 unions show that the membership was 155,303. Since their establishment they have gained 108,906 members, an increase of 235 per cent. There has been a falling off in membership in two trades, coopers and machine woodworkers and turners.

Of the labor organizations, 401 say that they have increased wages, 61 report that wages are less now than they were previous to the formation of the organizations, and the figures presented by 174 unions indicate that there has been no change. As to working time, 403 or-

ganizations report that the hours of labor have been reduced, 6 that they have been increased, and the returns from 246 show no change.

Four hundred and seventy-three organizations, with 122,580 members, state that they expended in benefits \$511,717.59. Of this amount, \$106,801.69 was for out-of-work benefits, \$60,107.98 for sick benefits, \$93,437.92 for death benefits, \$89,150.04 for strike benefits; \$10,676.74 was given to other labor organizations, and \$151,543.22 was expended in benefits that are not classified by the organizations.

**Factory Inspection.**—During 1894 13,866 separate workshops and factories were visited, and 2,609 of these were inspected several times. There were 465,926 persons employed in the places inspected, 150,662 of whom were women and 12,536 children under sixteen years of age. As a result 10,425 notifications were issued requiring changes to be made in or about the places visited or with reference to the individuals employed. The most important were as follows: Factories ordered to stop overworking minors, 188; children under fourteen years ordered discharged, 182; illiterate children under sixteen years ordered discharged, 238; elevators and hoistways ordered guarded, 587; fire escapes ordered erected, 262; machines ordered protected, 1,320; separate toilet rooms for women ordered, 1,148; factories ordered renovated, 638; buildings condemned as unsafe, 52; ordered to cease making clothing in sweat shops, 718; overcrowding ordered stopped, 53; and better ventilation ordered, 118.

The number of children employed in factories during 1894 showed a decrease from 1893 of about the same ratio as in previous years.

**Fish and Game.**—During the year ended Sept. 30, 1895, the State planted 196,247,840 fish of various kinds and ages. Calling the brook trout, brown trout, rainbow trout, landlocked salmon, sea salmon, muskellunge, and black bass hook-and-line or "game" fish, there were planted of these species 8,627,908. Of whitefish, pike perch, tomcod, smelts, ciscoes, shad, bullheads, perch, etc., the commercial or food fish, there were planted 187,619,392. In 1895 the commission planted 41,205,000 pike-perch fry, 24,080,000 whitefish, and 18,000,000 ciscoes. Reports were received from all but one township in the 12 counties in the Adirondack region, and these show that 5,083 deer were killed during the open season.

The game law signed on June 7 makes the trout-fishing season uniform throughout the State, the open season being from April 16 to Aug. 31. The bill prohibits the pollution of streams or the taking of fish by drawing off water or by dynamite, or the taking of fish from a stream to stock a private pond or stream. No fishing through the ice in waters inhabited by trout or salmon is permitted. Salmon trout and landlocked salmon may be fished from May 1 to Sept. 30; bass, from May 30 to Dec. 31, eight-inch limit; pickerel, pike, and wall-eyed pike from May 1 to Jan. 31, except as provided in section 141 of the game law.

The open season for deer is Aug. 16 to Oct. 31; limit, two deer to each person; for squirrels, hares, and rabbits from Sept. 1 to Nov. 30; ferrets prohibited.

For web-footed wild fowl the open season is from Sept. 1 to April 30; quail, open season November and December; woodcock and grouse, open season from Aug. 16 to Dec. 31; clover, snipe, and English snipe shall not be shot or possessed during May, June, July, or August; snaring, netting, or trapping of game birds is prohibited.

There is a special provision to regulate the killing of deer on Long Island. No deer may be killed during the next two years. After that period there is to be an open season every other two years, of six days only, from Nov. 10 to Nov. 16. The close season for ducks has been shortened. The new law allows these and other web-footed birds, except brant and geese, to be hunted, except from May 1 to Sept. 1. The open season for trout begins on April 16 and closes Aug. 31.

**State Capitol.**—The Legislature passed an act providing for a commission to take steps for the completion of the Capitol by contract. It was estimated in January, 1895, that the value of the material on hand was \$41,243, and the plant for carrying on the work \$65,000. Deducting the value of materials, the commissioner estimated that it would cost \$2,638,112 to complete the building. On Dec. 27 the commissioners approved of the plans and specifications for the completion, by contract, of the Capitol and all its unfinished portions, except the carving on the western staircase and the completion of the eastern approach. It was decided to abandon the tower as originally proposed.

**Political.**—On Sept. 17 a Republican State convention was held in Saratoga Springs. Charles W. Hackett, chairman of the State committee, called the convention to order, and named J. S. Sherman, of Oneida, as temporary chairman. For the permanent organization Clarence Lexow was made chairman. Concerning national issues the platform declared:

We denounce the Wilson tariff, with its iniquitous income-tax attachment—happily declared unconstitutional by the Supreme Court of the United States—as the first step accomplished in the campaign for the annihilation of American industries. This measure is neither a tariff for protection nor a tariff for revenue, but a tariff for deficit, failing by scores of millions a year to raise the amount of revenue necessary for the expenses of our National Government.

We denounce the Democratic Administration for its gross mismanagement of the finances of the nation. It already has added more than \$165,000,000 to the national debt and the burdens of the people.

We denounce the Democratic Administration for its false and misleading statements of the public expenditures and for its failure promptly to pay the nation's honest debts.

Of State issues it said:

The revised Constitution, which went into effect last January, imposed many important duties upon the Legislature, which were fully met and faithfully discharged. Prominent among them was the constitutional requirement of uniform charters for cities of the various classes. Among the acts of the Legislature designed for the amelioration of the condition of the working people of the city of New York, the law providing for the inspection and improvement of tenement houses is entitled to especial commendation.

The most rigid care and economy were exercised by the Republican Legislature of the State in granting appropriations of the people's money. The tax



rate was kept down to the lowest figures possible under the shrinkage of receipts from indirect taxation, due to the general business depression which was brought about by Democratic mismanagement in the nation. The necessity of meeting expenditures which were rendered obligatory by the new Constitution and the extension of the act for State care of the pauper insane to the counties of New York and Kings made imperative an increase in the tax rate.

Concerning New York city it said:

The reform measures which the people of the city of New York asked for and which were indispensable to the complete overthrow of the corrupt political machine that had so long plundered and betrayed the great metropolis of the State were, with a single exception, enacted into law in the face of a united Democratic opposition.

Subsequently an amendment to the platform as follows was introduced and carried by the efforts of Warner Miller: "We favor the maintenance of the Sunday laws in the interest of labor and morality."

The following ticket was nominated: For Secretary of State, John Palmer; Comptroller, James A. Roberts; Treasurer, Addison B. Colvin; Attorney-General, Theodore E. Hancock; State Engineer and Surveyor, Campbell W. Adams; and Associate Judge of the Court of Appeals, Celora E. Martin.

The Democratic State Convention was held in Syracuse, Sept. 24, and it was called to order by Chairman James W. Hinckley. Perry Belmont was made temporary chairman, and was succeeded by Roswell P. Flower as permanent chairman. A platform essentially as follows was adopted:

It declared for honest public officials and against legislative bribery, such as was witnessed in connection with the defeat of the Hudson river ice-cutting bill in the last Legislature. Economy in public expenditures was dwelt upon as one of the foundation stones of the Democratic party. The increase in the tax rate by the last Republican Legislature and present Republican State officials was denounced, and was followed by a declaration to restore a low tax rate should the Democracy be returned to power.

Home rule for municipalities and equal taxation were upheld in separate planks. Under the head of "Personal Liberty for the Individual" it declared for home rule and local option as regards the Sunday laws. This plank placed the party in favor of a general law with a provision that local option might be possible in a municipality or community by a majority vote, so that the people might determine themselves what access they shall have to the necessities and conveniences of life on the Sabbath day. Gov. Morton and the Legislature were severely criticised for placing so many unnecessary laws on the statute books last winter. The financial plank demanded an agreement among foreign powers for the common use of gold and silver, and at the same time declared against unlimited coinage of silver until such an agreement could be brought about.

The National Administration was approved, as well as the operations of the Wilson tariff law.

The following ticket was then nominated: For Secretary of State, Horatio C. King; Comptroller, John B. Judson; Treasurer, De Witt C. Dow; Attorney-General, Norton Chase; Engineer and Surveyor, Russell R. Stuart; and Associate Judge of the Court of Appeals, John D. Teller.

The Prohibition party convened in Saratoga Springs, Sept. 4, and named the following ticket: For Secretary of State, William W. Smith; Com-

troller, Frederick B. Diefendorf; Treasurer, William R. Rathbone; Attorney-General, W. Martin Jones; State Engineer and Surveyor, Walter M. Miles; and Judge of the Court of Appeals, Edwin C. English.

The other tickets in the field were: People's party—For Secretary of State, Thaddeus B. Wakeman; Comptroller, David Rousseau; Treasurer, H. L. Case; Attorney-General, Elias Root; Engineer and Surveyor, R. A. Borden; and Judge of the Court of Appeals, Charles Ward. Socialist-Labor party—For Secretary of State, Erasmus Pellenz; Comptroller, Patrick Murphy; Treasurer, William Steer; Attorney-General, John H. Moore; Engineer and Surveyor, Morris Berman; and Judge of the Court of Appeals, Henry Gray.

A vote upon a proposition to bond the State in the sum of \$9,000,000 for the purpose of improving the Erie, Champlain, and Oswego Canals was also taken.

The election, Nov. 5, resulted in the success of the Republican ticket, the candidate for Secretary of State receiving a plurality of 90,145. To the State Senate 35 Republicans, 14 Democrats, and 1 Independent Republican were returned. Of the justices of the Supreme Court 37 Republicans and 21 Democrats were chosen.

**Little Falls**, Herkimer County, was incorporated May 8, 1895, as the thirty-sixth city in the State. It is on the direct line of both the New York Central and the West Shore Railroads, 75 miles west of Albany, 22 miles east of Utica, and precisely half way between New York city and Buffalo. The village of Little Falls was incorporated in 1810. The city, including the former village and a part of what was the town of Manheim, has a population of 11,000. It is, perhaps, the most picturesque of all the inland cities in New York. At this point the Mohawk river breaks through a ledge of rocks closely resembling those of the Thousand Islands in the St. Lawrence. In breaking through the ledge the river falls 50 feet within the limits of the city, and thus affords a power that has been used to advantage ever since the place was settled. In the chief industry, that of knit goods, 9 mills with 2,100 employees produce 3,925 dozens daily, 1,197,500 weekly, and a total of 14,370,000 garments annually—the whole product requiring 7,185,000 pounds of material. There are 2 machine shops that make exclusively machinery for knitting mills. There are also factories for the making of bicycles, paper boxes, hammers, axes, lasts, wooden boxes, chairs, and furniture; also woolen and paper mills and furnaces. The total of capital employed in manufactures is \$2,465,500. The city is in the center of a fine agricultural country, and it has long been noted as the largest cheese market in the United States, as many as 59,000 boxes having been shipped in a single day. An abundance of water has been secured from an Adirondack stream at a cost of \$400,000. The city has electric lights to the extent of over 2,000 candle power. There are 2 banks, 7 churches, a graded school, a free academy, a parochial school, a free library, 1 daily newspaper, and 2 weeklies.

**Johnstown**, Fulton County, was incorporated May 8, 1895, as the thirty-seventh city in the State. The incorporation made the limits of the new city

the same as those of the former village of Johnstown, the north line being coincident with the south line of the adjoining city of Gloversville, which was incorporated in 1890. Johnstown is 44 miles west of Albany and 50 miles east of Utica. It is on the Cayadutta creek 4 miles north of Fonda, a station on the New York Central Railroad, with which it is connected by a steam and an electric railway. The city has a population of 10,000, and is divided into 4 wards. The chief industry is the making of gloves and mittens, there being 63 factories with an aggregate capital of \$1,565,000. The 3 knitting mills have a capital of \$156,000, and the 31 other mills and factories have a capital of \$637,000. In all, over \$3,000,000 is invested in manufactures. The number of churches is 10; of schools, 5; and of newspapers, 2. The city is in the center of a fine agricultural and grazing country. Among the mineral products of the vicinity are oil and gold, but neither has been found in paying quantities. The settlement of Johnstown began in 1762 under the auspices of Sir William Johnson. In that year, after residing for thirty years near the old fort on the Mohawk, he began the erection of what is now known as "the Hall," which the boundary of the city closely approaches. At the same date the lands were thrown open for settlers. The Hall, sometimes known as the Manor House, is still in a good state of preservation. Within its walls Sir William Johnson became famous for his baronial hospitality. He was in command of a body of regular and provincial troops during the French and Indian War, and on the banks of Lake George, in the battle of that name, he defeated the French under Disseau and shattered their hope of invading the Mohawk and Cherry valleys. The English Government gave him a grant of what was then Tryon County, from which Montgomery, Fulton, Hamilton, and a part of Saratoga Counties have been formed. He located the county seat at Johnstown, and in 1772 he built the courthouse, and a church and a jail which are still in use. When trouble occurred between the colonies and Great Britain most of his followers joined the colonial side. Johnson was in the employ of the English Government. He died before the active part of the Revolutionary War had begun, but his descendants and relatives fought on the British side. His son, Sir John Johnson, was the leader in the massacre at Cherry valley, and his estates were confiscated by the act of attainder.

**NEW YORK CITY. Government.**—The city officials who held office during the year were: Mayor, William L. Strong; President of the Board of Aldermen, John Jeroloman; Register, Ferdinand Levy; and Sheriff, Edward J. H. Tamsen, all of whom were elected on the anti-Tammany ticket and took office on Jan. 1, 1895, except the Register, who is a Tammany Democrat and took office on Jan. 1, 1892.

**Finances.**—The condition of the city debt on Dec. 31, 1895, is shown in the table on page 547.

During the year the cost of permanent improvements amounted to \$15,127,215.76, and bonds for that sum were issued. The expenses of the municipality exceeded the income and the net funded debt of the city was increased by

\$5,806,688.64. The returns as given beyond in the wealth of the city resulted, in August, in the announcement of a tax rate of \$1.91 for each \$100 of assessment as compared with \$1.79 for 1894.

**Board of Estimate and Apportionment.**—

This body, consisting of the Mayor, the President of the Board of Aldermen, the Comptroller (Ashbel P. Fitch), the President of the Department of Taxes and Assessments (Edward P. Barker), and the Counsel to the Corporation (Francis M. Scott), allowed the following amounts for 1896; Mayoralty, \$26,000; Common Council, \$88,000; Finance Department, \$316,400; interest on city debt, \$5,566,597.88; redemption of principal of city debt, \$2,989,901.60; State taxes and common schools, \$6,402,009.92; rents, \$168,073.77; armories—rents, \$10,250; judgments, \$125,000; Law Department, \$205,050; Bureau of Public Administrator, \$13,890; Department of Public Works, \$3,270,530.66; Park Department, \$1,219,255; Department of Street Improvements, Twenty-third and Twenty-fourth Wards, \$633,000; Department of Charities, \$1,543,417; Department of Correction, \$475,999.33; Health Department, \$519,508; Police Department, \$5,925,410.30; Bureau of Elections, \$515,294; Department of Street Cleaning, \$3,020,700; Fire Department, \$2,345,355; Building Department, \$265,000; Department of Taxes and Assessments, \$162,520; Board of Education, \$5,679,302.59; College of the City of New York, \$150,000; Normal College, \$150,000; printing and stationery, \$277,200; Civil-service Board, \$27,500; coroners, \$56,200; commissioners of accounts, \$65,000; sheriff, \$137,232; Register, \$115,250; armories, wages, etc., \$81,200; jurors' fees, \$85,000; preservation of records, \$40,280; street and park openings, \$250,000; libraries, \$63,500; salaries—city courts, \$338,000; salaries—judiciary, \$1,427,929.73; charitable institutions, \$1,543,301.68; miscellaneous, \$201,712.85; total, \$46,496,571.31; deduct general fund, \$2,500,000; grand total, \$43,996,571.31.

This statement shows that the amount allowed for 1896 is \$46,496,571.31, which is reduced by deducting from the general fund made up by receipts from various sources during the year, including the unexpended balance of previous years, amounting to \$2,500,000. The total amount to be raised by taxation is \$43,996,571.31, which represents an increase of \$6,519,611.27. Of this increase, \$4,585,269.41 is mandatory. Excluding the State tax and other mandatory items there is to be charged a net increase in the running expenses of \$1,934,341.86, which is principally distributed as follows: Public works, \$135,050.66; street improvements in Twenty-third and Twenty-fourth Wards, \$206,530; Health Department, \$58,828; police, \$60,588; elections, \$102,394; street cleaning, \$644,700; fire, \$260,934; building, \$60,300; education, \$716,879.45; and accounts, \$32,500.

**Wealth of the City.**—This department is a county charge, and is cared for by a board of 3 tax commissioners, as follow: Edward P. Barker (president), John Whalen, who was succeeded by Theodore Sutro on June 7, and Joseph Blumenthal, who was succeeded by James L. Wells, each of whom receives a salary of \$7,000 and



FUNDED DEBT.	Outstanding Dec. 31, 1894.	Issued during 1895.	Redeemed during 1895.	Outstanding Dec. 31, 1895.
1. Payable from the sinking fund, under ordinances of the Common Council.....	\$4,267,200 00	.....	\$1,755,100 00	\$2,512,100 00
2. Payable from the sinking fund, under provisions of chapter 383, section 6, Laws of 1878, and section 176, New York City Consolidation act of 1882.....	9,700,000 00	.....	.....	9,700,000 00
3. Payable from the sinking fund, under provisions of chapter 383, section 8, Laws of 1878, and section 192, New York City Consolidation act of 1882, as amended by chapter 178, Laws of 1889.....	59,283,892 98	\$11,460,328 14	912,000 00	69,832,221 12
4. Payable from the sinking fund, under provisions of chapter 79, Laws of 1889.....	9,808,100 00	2,000 00	.....	9,810,100 00
5. Payable from the sinking fund, under provisions of the constitutional amendment adopted Nov. 4, 1884.....	81,637,500 00	2,032,500 00	.....	33,670,000 00
6. Payable from taxation.....	445,000 00	.....	.....	445,000 00
7. Payable from taxation, under the several statutes authorizing their issue.....	49,745,346 05	.....	147,100 00	49,598,246 05
8. Bonds issued for local improvements after June 9, 1880....	8,598,042 29	1,457,387 62	700,000 00	9,355,429 91
9. Debt of the annexed territory of Westchester County.....	506,000 00	.....	15,500 00	490,500 00
10. Debt of the annexed territory, under the provisions of chapter 134, Laws of 1895.....	.....	175,000 00	.....	175,000 00
Total funded debt.....	\$173,991,081 32	\$15,127,215 76	\$3,529,700 00	\$185,588,597 08
TEMPORARY DEBT.—Revenue Bonds.				
1. Issued under special laws.....	591,433 81	1,406,910 78	591,438 81	1,406,910 78
2. Issued in anticipation of taxes of 1894.....	1,107,600 00	500,000 00	1,607,600 00	.....
3. Issued in anticipation of taxes of 1895.....	.....	20,277,300 00	19,119,700 00	1,157,600 00
Total bonded debt.....	\$175,690,115 13	\$27,311,426 54	\$24,848,438 81	\$188,153,107 86

## SUMMARY.

Total funded debt, Dec. 31, 1894.....	\$173,991,081 32
Total funded debt, Dec. 31, 1895.....	185,588,597 08
Less amount held by commissioners of the sinking fund for the redemption of debt:	
Investments.....	68,642,319 05
Cash.....	1,269,941 46
Total outstanding, Dec. 31, 1894.....	\$69,912,260 51
Investments redeemed.....	71,776,437 79
Cash redeemed.....	3,926,649 84
Total outstanding, Dec. 31, 1895.....	\$75,703,087 68
Net funded debt, Dec. 31, 1894.....	104,978,820 81
Net funded debt, Dec. 31, 1895.....	109,885,509 45

the president \$1,000 additional. The office is at 280 Broadway. They report the total valuations of real and personal property, as assessed for taxation in 1895, to be \$2,016,947,662, against \$2,003,332,037 for 1894, showing a net increase of \$13,615,625, which is distributed as follows: Increase in real-estate assessments, \$36,978,678; decrease in personal-estate assessments, \$23,363,053; difference, \$13,615,625. The total taxation was distributed as follows: Insurance companies, \$2,237,746; trust companies, \$4,574,646; shareholders of banks, \$82,343,420; railroad companies, \$23,874,196; resident corporations, \$46,081,818; nonresident corporations, \$18,570,456; personal, nonresident, \$37,955,233; personal, resident, \$250,620,354; shareholders of banks, \$82,343,420; total, \$370,919,007; real estate, \$1,646,028,655; total real and personal estate, \$2,016,947,662. The decreases are ascribed to decisions of the courts reducing the assessments on railroads and other corporations, and to the hard times. The Gould estate was taxed for \$10,000,000. George Gould personally was assessed for \$400,000, and Helen, Edwin, Howard, and Anna Gould for \$100,000 each. Cornelius and William K. Vanderbilt for \$400,000 each, and George Vanderbilt for \$200,000. John Jacob and W. W. Astor were taxed on \$2,000,000 personal property each.

**Public Works.**—This department is under the charge of a commissioner appointed by the

Mayor. He holds office for four years, and receives a salary of \$8,000. At the beginning of the year the commissioner was Michael T. Daly, who on Feb. 13 was superseded by William Brookfield, who on Dec. 2 was succeeded by Charles H. T. Collis. The headquarters are at 31 Chambers Street. During 1895 the average daily consumption of Croton water was 200,000,000 gallons, being an increase of 12,000,000 gallons over 1894. The water in storage on May 1 amounted to 24,000,000,000 gallons, and the drafts on it amounted to 22,540,000,000. The revenue from the water service to Nov. 30 was \$3,232,320, which was an increase of \$117,646 over last year. During the year 7½ miles of new sewers were built, and 7,137 lineal feet of sewers altered and improved. The length of sewers on Manhattan Island on Jan. 1, 1896, was 468 miles. New pavements were laid as follow: Granite on concrete and macadam, 134,000 square yards; granite on sand, 31,500 square yards; asphalt, 20,000 square yards; also, payable from legislative appropriation, 137,000 square yards of asphalt pavement and 4,000 square yards of asphalt and wood laid under permits, without public expense; making a total of 326,500 square yards. Some 124,000 square yards of macadam roadways have been repaired and resurfaced. During the year there were 981 new gas lamps and 122 new electric lamps lighted, so that with 25,379 gas lamps, 2,751 electric lamps, and 233 naphtha lamps, and these with 567 electric lamps and 376 naphtha lamps in the annexed district, give a grand total of 29,306 lamps of all kinds in the city. The proceedings for the widening and extending of Elm Street has progressed rapidly during the year, and a large amount of testimony has been taken.

The widening of College Place, proposed by the Board of Street Openings in 1889, began on Jan. 11, 1895, and the tearing down of buildings and preparing for carrying out the law that was opposed by many of the property owners was accomplished during the year. The

plan included the widening of College Place by beginning at Chambers Street and cutting off 25 feet on the west side of Murray Street, making it 90 feet wide, and thence cutting off 25 feet on the west side of Barclay Street, widening it to 80 feet, and so on until the entire street became 125 feet wide. The estimated cost of widening and extension was \$1,400,000, of which the city will pay one half and the persons benefited the other half.

It is interesting to note that all the property in this vicinity belonged originally to Trinity Church, which in 1827 ceded a large part to St. Mark's, Christ, St. Esprit, Grace, Lutheran Episcopal, St. Michael's, St. George's churches, and to the Society for Promoting Religion. Several of the above churches have parted with some of their property.

**Parks.**—This department is under the direction of a board of 4 commissioners, of which the president receives a salary of \$5,000. At the beginning of the year the board was composed of Abram B. Tappan, president, Edward Bell, George C. Clausen, and Nathan Strauss. During February this board was succeeded by one consisting of David H. King, Jr., president, A. D. Julliard, George G. Haven, and James A. Roosevelt, and it in turn resigned on Sept. 22. On Nov. 10 the following board—Stephen V. R. Cruger, Smith Ely, Samuel McMillan, and William Stiles—was named by the Mayor, and Col. Cruger became president. The secretary of the board was Charles De F. Burns, who toward the close of the year resigned to give place to William Leary. The headquarters are at 31 Chambers Street. During the year plans were furnished, the contract let, and work begun on the Corlears Hook Park, which is between Corlears and Jackson Streets, from Cherry Street to the East river. The park is ten acres in extent and a perfect square.

New York is to have an immense botanic garden, to cost \$500,000, exclusive of the ground, and an endowment of \$250,000. The incorporators of the New York Botanic Garden met on June 18, and learned that the remainder of the \$250,000 required by the act establishing the garden had been subscribed. The city must issue bonds for \$500,000 to erect the necessary buildings, and must set aside 250 acres for the use of the garden. The ground selected by the scientific directors is on both sides of Bronx river.

**New Bridge.**—The Central Bridge over Harlem river at Eighth Avenue was formally opened May 1, although the approaches were not completed. It took three years to build the bridge, and during its construction 3 men were killed and 12 injured. It cost \$2,000,000, and is 1,920 feet in length from the eastern approach to the western bulkhead. It has a roadway 40 feet wide and a footpath 10 feet wide. The draw span weighs 2,407,169 pounds. Sixty-four cluster lights will illuminate the bridge.

**Building Department.**—This department is under the control of a commissioner, who receives a salary of \$5,000 a year. The incumbent at the beginning of the year was Thomas J. Brady, who was removed and gave place, March 25, to Stevenson Constable. The office is at 220 Fourth Avenue. During the year there were filed in this department 2,029 plans for new

buildings at an estimated cost of \$77,979,432 and 1,885 plans for alterations at an estimated cost of \$8,781,694. The other items in the annual report are: Unsafe buildings reported, 2,282; unsafe building notices issued, 4,349; violations reported, 5,178; violation notices issued, 6,375; fire-escape cases reported, 2,054; fire-escape notices issued, 2,961; plans received, 6,361; iron beams, columns, lintels, girders, etc., examined, 92,906; cases forwarded to the department attorney for prosecution, 4,473; and new buildings and alterations in progress, 2,908.

**Vital Statistics.**—The Board of Health consists of the president of the Board of Police, the health officer of the port, and 2 commissioners, 1 of whom must have been for five years a practicing physician. The commissioner that is not a physician is president of the board and receives a salary of \$5,000, while the other member is paid \$4,000. The *ex-officio* commissioners receive no salary. The officials during 1895 were as follow: President Charles G. Wilson, Dr. Cyrus Edson, who was succeeded on June 30 by Dr. George B. Fowler, Health-Officer William T. Jenkins, who was succeeded by Dr. Alvah H. Doty on Jan. 1, and President of the Board of Police James J. Martin, who was succeeded by Theodore Roosevelt. The secretary of the board is Emmons Clark, and the headquarters are in the Criminal Court building, on Center Street. The vital statistics were as follow:

ITEMS.	1894.	1895.
Deaths under one year.....	10,822	11,120
Deaths under five years.....	17,596	18,100
Total deaths.....	41,212	43,419
Total reported births.....	55,643	53,731
Total reported marriages.....	17,388	20,612
Total reported stillbirths.....	3,571	3,372
Death rate per 1,000 living.....	23.05	23.15

The principal causes of death were the following: Pneumonia, 5,707; phthisis, 5,182; diarrheal diseases, 3,208—under five years, 2,839; heart disease, 2,286; Bright's disease and nephritis, 2,681; diphtheria, 1,628; bronchitis, 1,616; measles, 766; influenza, 566; whooping cough, 495; scarlet fever, 465; croup, 342; typhoid fever, 321; cerebro-spinal meningitis, 203; malarial fever, 90; and small pox, 10. Among the deaths by violence were the following: Accident, 2,036; suicide, 375; homicide, 76; and sunstroke, 85.

To the introduction of diphtheria antitoxine, its production by the Board of Health, and its use in this city during the year, may be attributed the decrease in the mortality from that disease. This remedy is furnished without charge to the hospitals, to the public and charitable institutions, and to the poor of the city.

In the division of food inspections and offensive trades, the investigations in regard to the character of the milk have been increased, the number of analyses being 3,106; the number of arrests made, 695, against 159 for 1894; and the fines collected, \$12,802, against \$2,708 last year. The number of pounds of fruit, meat, and fish seized and condemned was 6,766,432.

**Street Cleaning.**—This department is managed by a single commissioner, who receives a salary of \$6,000 a year. At the beginning of the year William S. Andrews was commissioner,



but he soon gave place to Col. George E. Waring, Jr. During 1894 \$2,226,419.49 was spent by this department for the pay of workmen, while in 1895 \$2,369,926.99 was similarly expended. Of this, \$29,227 was due to an increase in the rate of hiring dumping boats (from \$23 to \$30 a day), making the actual increase in the cost of the work of cleaning the streets \$114,280.50.

The foregoing does not include "snow and ice" and "new stock," because these are accidental. During 1894 \$69,155.09 was spent for "snow and ice" and \$74,987.63 for "new stock." During 1895 \$217,836.78 was spent for "snow and ice" and \$85,520.51 for "new stock."

According to the Mayor, "the streets have been made and are kept clean, the public health has been improved, and the decrease in the mortality rate has been greater during 1895 than it was in the last ten years."

**Docks.**—This department is under the control of 3 commissioners, each of whom receives a salary of \$5,000 a year. At the beginning of the year the board consisted of J. Sergeant Cram, president, Andrew J. White, and James J. Phelan. Later Edward Einstein was named as successor to Cram, Edward C. O'Brien to White, and John Monks to Phelan. Office, Pier A, North River.

During 1895 this department constructed 3 new piers and 245 feet of bulkhead. The gross income received by the city from this department for the calendar year 1895 (the month of December estimated) was \$2,025,527.45. The total expenditures during the same year were \$995,262.42, of which amount \$246,307.09 went for acquired property, \$453,046.68 in the work of construction, \$217,836.19 for the maintenance and repair along the whole water front belonging to the city, and \$78,073.46 was charged to the annual expense account.

**Police.**—This department is managed by a board of 4 commissioners, appointed by the Mayor for a term of six years. The board at the beginning of 1895 consisted of James J. Martin, president, John C. Sheehan, Michael Kerwin, and Charles H. Murray. John C. Sheehan was removed, and on Feb. 13 Avery D. Andrews was appointed to succeed him, and on May 1 Theodore Roosevelt, Andrew D. Parker, and Frederick D. Grant were appointed to succeed the other three. Mr. Roosevelt was chosen president. The Superintendent of Police was Thomas F. Byrnes, who was retired during the year and Inspector Peter Conlin appointed as his successor. The headquarters are at 300 Mulberry Street.

During the year the police made 112,800 arrests, an increase of 14,000. The number of men arrested was 92,473, and the women 20,327. There were 64,379 lodgers accommodated in the various stations. The number of complaints made against policemen was 3,969. Sixty-one members of the force died, 78 were dismissed, and 116 were retired.

There were 2,523 lost children and foundlings taken in by the police. The fines and judgments imposed upon delinquent policemen amounted to over \$21,000.

The property clerk received 3,627 lots of lost

and stolen property. He delivered 1,176 lots valued at \$95,724.

**The Lexow Committee.**—Notwithstanding the numerous indictments obtained against police officials and referred to on page 537 of the "Annual Cyclopædia" for 1894, the fact is that on Jan. 1, 1896, not one man who was accused before the Lexow Committee had begun to serve a term of imprisonment. On Dec. 29, 1895, the Supreme Court granted a new trial to Capt. John T. Stephenson, the first man to be convicted on an indictment growing out of the Lexow investigation. The results may be summarized as follows: One conviction, subsequently reversed—that of Stephenson; 1 conviction after 2 trials with an appeal pending—that of Inspector McLaughlin; 2 disagreements of jury—the cases of Doherty and Levy; 40 indictments dismissed; 35 indictments not yet tried. To obtain these results cost the State of New York \$76,534.

**Fire.**—This department is under the control of a board of 3 commissioners, appointed by the Mayor for a term of six years, each of whom receives a salary of \$5,000. The board during 1895 consisted of John J. Scannell, president, who was succeeded on March 5 by Oscar H. Lagrange; Anthony Eickhoff, who was succeeded on March 7 by James R. Sheffield; S. Howland Robbins, who was succeeded on May 1 by Austin E. Ford. The chief of the department is Hugh Bonner, and the headquarters are at 157 East 67th Street. The force on Jan. 1, 1896, included 1,359 officers and men, 59 engine companies (including 3 fire boats), 22 hook-and-ladder companies, 98 steam fire engines, 4 water towers, 39 hook-and-ladder trucks, and 416 horses. During the year there were 3,940 fires, of which 3,594 were confined to the point of starting, 176 were confined to the building, and 58 extended to other buildings. Of the total number, 112 were not in buildings. The estimated loss by these fires was \$3,115,431, on which the insurance was \$77,361,413. There were 33 buildings destroyed by fire, and 1,770 fires resulted in nominal damages only. For arson, 26 persons were arrested, 4 persons were convicted, and 15 cases are pending.

**Education.**—The board having control of this subject consists of 21 commissioners, who are appointed by the Mayor and receive no salary. The president of the board at the beginning of the year was Charles H. Knox, who resigned on July 2 and was succeeded by Robert Maclay. The city superintendent is John Jasper (salary, \$7,500), and the headquarters are at 146 Grand Street.

There are under the jurisdiction of the Board of Education 331 schools and departments—254 grammar and primary, 27 evening, 4 evening high, 1 nautical, and 45 corporate. During 1895 there were organized 10 grammar and primary schools and departments, 1 evening school, and, by the annexation from Westchester County, 10 grammar and primary schools and departments come within the jurisdiction of the Board of Education. On Nov. 30, 1894, the number of pupils registered was 184,381, with an average attendance of 174,101. There were 10,000 more on the school register at the end of November, 1895, than on the same day in the preceding

year. According to a school census completed on Dec. 31 the total number of children was 423,164.

The committee appointed to select a site for the College of the City of New York recommended the 4 city blocks, or 80 lots altogether, lying between 138th Street and 140th Street, and Amsterdam Avenue and St. Nicholas Avenue. To the college has been given by an act of the last Legislature \$600,000 for a site and \$575,000 for the buildings. The Legislature authorized in the last session the issue of \$5,000,000 of bonds by the city of New York for schoolhouses, and the sum of \$1,500,000 is available for the same purpose. The city has about \$15,000,000 invested in school property. On Jan. 1, 1895, there were under construction 15 school buildings and annexes. Since that date contracts for 2 school buildings have been let.

**Excise Department.**—This bureau is under the control of 3 commissioners, each of whom receives a salary of \$5,000. At the beginning of the year the board consisted of William Dalton, president, Michael C. Murphy, and Eugene L. Bushe, who were removed and a new board appointed on Feb. 20, consisting of Joseph Murray, president, Charles H. Woodman, and Julius Harburger.

During 1895 12,070 applications were received, 848 were canceled, 281 were rejected, and 52 revoked. The expenses of the board were: For general administration, \$40,204.66; inspectors' salaries, \$92,020.91; contingencies, \$2,064.70; total, \$134,290.27. There was received \$1,790,530 for 11,029 licenses, distributed as follows: Liquor saloons, 6,930; transfers and assignments, 1,869; storekeepers, 1,071; saloon, ale, and beer licenses, 448; restaurants, 371; hotels, 283; additional, 42; and drug stores, 15.

**Law Department.**—The legal interests of the city are intrusted to the counsel of the corporation, who receives \$12,000, and 8 assistants, with salaries from \$4,000 to \$10,000. The counsel at the beginning of the year was William H. Clark, who was removed in February and Francis M. Scott appointed to his place.

On Jan. 1, 1896, there were pending against the city 3,895 actions and special proceedings. There were begun 1,030 such proceedings and 930 were closed; 155 actions were tried, 62 appeals at the General Term argued and 27 in the Court of Appeals; 850 written opinions were delivered. Money was collected and turned into the city treasury by the department as follows: By the general office, \$40,719.75; by the corporation attorney, \$15,436.69; by the attorney for the collection of arrears of personal taxes, \$106,198.32, or nearly enough to pay for the whole expense of running the department. During 1895 10,410 miles of new streets were acquired by the city in 44 different cases, in which condemnation proceedings were instituted for the purpose and completed.

**Judiciary.**—At the last session of the Legislature the police courts and the Court of Special Sessions were abolished, and the present Court of Special Sessions and city magistrates' courts formed. On June 8, 5 justices of the Court of Special Sessions were appointed, as follow: E. Burke Hinsdale, W. Travers Jerome, E. A. Jacob, John Hayes, and William C. Holbrook,

each of whom receives a salary of \$9,000 a year. According to the laws of 1895 there was transferred to the court the unfinished business of the former Court of Special Sessions, together with its records.

Also on June 8 the following city magistrates, with a salary of \$7,000 a year, were appointed: Charles A. Flammer, Robert C. Cornell, John O. Mott, Henry A. Brann, Leroy B. Crane, Joseph M. Deuel, William J. Fanning, Herman G. Kudlich, and Charles E. Simms, Jr. The total number of cases brought before the courts for the year ending Oct. 31 was 112,719, an increase of 11,099 over the preceding year. Of the total number of arrests made, 82,494 cases were disposed of summarily, leaving 30,215 cases which, if held, required trial either at General or Special Sessions.

The old Tombs police court, which for more than seventy years had been held at the corner of Franklin and Center Streets, closed forever at 5 o'clock on Nov. 12.

The Court of Common Pleas was adjourned without date on Dec. 30, at 4.35 o'clock. The Court of Oyer and Terminer and of Jail Delivery, established in 1665, one year after Peter Stuyvesant's capitulation of New Amsterdam, likewise came to an end on Dec. 30.

**Power of Removal.**—During the first six months of 1895, under the authority of an act of the Legislature, signed by the Governor Feb. 11, power was given to the Mayor to remove at will the heads of departments.

**Monuments.**—The Memorial Arch, at the lower end of Fifth Avenue, in Washington Square, passed into the custody of the city on May 4. Early in the afternoon the committee-men and invited guests gathered on the stand around the arch. The Governor of the State, Levi P. Morton, with his staff, escorted by Troop A and the First Brigade, came down Fifth Avenue from the Hotel Renaissance. The special exercises were begun with a prayer by Bishop Henry C. Potter, and an oration by Gen. Horace Porter followed. Mr. Henry Marquand made a brief address, saying: "The key of the monument will now be handed to you, Mr. Mayor, by the treasurer, Mr. William R. Stewart, whose labors and activity have been so conspicuous."

Mr. William R. Stewart, treasurer of the committee, addressing Mayor Strong, said: "Your Honor: In behalf of the committee on the erection of the Washington Arch, formed in 1889, it is my privilege to transfer to you, in your representative character as the chief magistrate of the city of New York, the beautiful civic monument which Stanford White's genius conceived and the subscriptions of public-spirited fellow-citizens have enabled us to build. The structure, although substantially complete, still lacks for its embellishment two groups of statuary. The pedestals for these stand ready. The committee purposes continuing its organization until it shall have seen them filled."

In his reply, Mayor Strong said: "It is with peculiar pleasure that I pass to-day to the President of the Park Board of the city of New York, the key, knowing well that the interest he took in creating this beautiful arch will ever remind him of his duty, not only to guard carefully this



structure, but to see that its surroundings will ever be kept in the purest and most beautiful manner, and in a way appropriate to the character of George Washington, whom it commemorates." David H. King, Jr., of the Park Department, received the key with a few words expressive of his pleasure and desire to follow out the Mayor's instructions.

The troops then passed in review before the Governor, and the ceremony was at an end.

A memorial service was held on Dec. 8 in the Brace Memorial Lodging House, 9 Duane Street, to celebrate the unveiling of a tablet, with a medallion portrait of Charles Loring Brace, founder of the Children's Aid Society. The tablet is over 6 feet in height, and the medallion is a life-size bust. It was presented to the society by the late Egisto P. Fabbri, and was unveiled on Dec. 8.

On Dec. 14 a handsome tablet in memory of Charles James Wills, Vice-President of the Brotherhood of St. Andrew, was presented to Bishop Potter, the representative of the corporation of St. John the Divine, in the Episcopal Pro-Cathedral, 130 Stanton Street.

A granite fountain, erected at the expense of Jacob H. Schiff in the open triangular space known as Rutgers Square, was informally transferred to the Park Department in July. The work is entirely in granite, except the two bronze basins and the finial in bronze. An inscription serves to show that the fountain is presented to the city in 1895. Another inscription is drawn from Exodus xvi, 6: "And there shall come water out of it that the people may drink."

During the year 10 drinking fountains presented to the city by President John P. Haines, of the Society for the Prevention of Cruelty to Animals, were placed in position. They are for the use of man and beast. Some of the money for them came from friends of the society, and some from its treasury.

**Aqueduct Commission.**—This board consists of the Mayor, the Comptroller, the Commissioner of Public Works, and 4 commissioners, each of whom receives \$5,000. The board during the year consisted of James C. Duane, president, Francis M. Scott, who resigned and was succeeded by George W. Green, John J. Tucker, and Henry W. Cannon. The work of the commission in 1895 was confined mainly to the extension of the storage system. Titicus dam, near Purdy's Station, was completed at a cost, exclusive of the land taken, of \$970,329.11, and 4,000,000,000,000 gallons have been stored in the adjacent reservoir, an addition of more than 20 per cent. of the whole storage available heretofore. The Carmel dams were finished, the main one costing \$403,241.64, and the auxiliary dam costing about \$155,000. The reservoir thus formed by these dams will contain about 10,000,000,000,000 gallons. In August the contract for the construction of the Jerome Park Reservoir was awarded for \$5,473,060. The excavation necessary for this extensive structure will require seven years for completion. On the construction of the Croton dam, begun at the end of 1892, \$273,000 was expended during 1895. The additional storage expected upon the completion of this dam will be 32,000,000,000,000 gallons, which will make the total storage more than

70,000,000,000,000 gallons. The total expenditure for the work of construction during the year was approximately \$582,000.

The consumption of water in New York during the last five years has been beyond what was estimated, there having been an increase from 110,000,000 gallons a day in 1890 to over 200,000,000 gallons a day in 1895.

**Annexed District.**—On June 1 new territory covering about 20,000 acres, with a population of 17,000, was added to the city by Senator Robertson's Annexation bill. All that part of Westchester County which lies southerly of a straight line drawn from the point where the northerly line of the city of New York meets the central line of the Bronx river to the middle of the channel between Hunter and Glen islands, in Long Island Sound, is a part of New York city. The territory thus annexed includes Throgs Neck, Unionport, Westchester, Williamsbridge, Bronxdale, Olmville, Baychester, Eastchester, Wakefield, and Bartow. The city lines of Yonkers, Mount Vernon, Pelham, and New Rochelle now form the northern line of the city.

**East River Bridge.**—In round numbers, 130,000 persons cross the East River Bridge on the railroad daily. More than 2,000 vehicles cross the roadways, and the total daily receipts from the traffic on the structure are about \$3,500.

**Rapid-transit Railroad Commission.**—This body consists of Alexander E. Orr, president, Seth Low, John Claflin, John H. Inman, John H. Starin, and William Steinway. Regular meetings were held during the year, and the following routes were decided upon:

A route, the center line beginning at a point under the westerly side of Whitehall Street distant along the same 62.5 feet north from the northerly line of South Street produced; thence by diverging lines under Whitehall Street and Battery Park and State Street, forming a loop line, the tracks converging to parallelism at a point at or near the westerly side of State Street and the southerly side of Battery Place; thence under Broadway and Union Square to 59th Street; thence under the Boulevard to a point at or near 93d Street; thence by a viaduct along the Boulevard to a point near 123d Street; thence by a viaduct along the Boulevard to a point at or near 151st Street; thence under the Boulevard to a point at or near 156th Street; thence by a viaduct along the Boulevard to a point at or near 159th Street; thence under the Boulevard to 169th Street; thence under Eleventh Avenue to a point at or near 185th Street.

Also a loop from Broadway, under Mail Street, City Hall Park, Park Row, and Chambers Street, and again connecting with the Broadway line.

Also a connection from said loop at a point in Park Row, near Printing-house Square; thence under Park Row to Broadway, and connecting with the above-described line under Broadway at a point at or near Fulton Street.

Also a route the center line of which shall diverge from the Broadway line at or near 14th Street, and run under Union Square to Fourth Avenue; thence under Fourth and Park Avenues to a point at or near 98th Street; thence by viaduct along Fourth or Park Avenue to the Harlem river; thence turning to the right by bridge across the Harlem river; and thence to the left until it shall coincide with the center line of Walton Avenue produced at or near its intersection with 138th Street; and thence along the line of Walton Avenue to a point at or near 146th Street.

**Political.**—The election of 1895 was held on Nov. 5, when the following candidates were voted for:

**Democrat (Tammany).**—County Clerk, Henry D. Purroy. Register, William Sohmer. Judges of the City Court—full term, Robert A. Van Wyck, John P. Schuchman; two years, Edward F. O'Dwyer. Judges of the Court of General Sessions—full term, Joseph E. Newburger; unexpired term of Randolph B. Martine, Martin T. McMahon. Judges of the Supreme Court (3), Frederick Smyth, Charles F. McLean, and Charles H. Truax. Also for 35 members of Assembly, 12 State Senators, and Amos Cummings as Congressman from Tenth District to fill vacancy caused by death of Andrew J. Campbell.

**Fusion (Republican and State Democracy).**—County Clerk, Thomas L. Hamilton. Register, Thomas L. Keating. Judges of the City Court—full term, Daniel O'Connell, Henry C. Batty; two years, Sherman Evarts. Judges of the Court of General Sessions—full term, Thomas Allison; unexpired term, John Fennel. Judges of the Supreme Court (3), Myer S. Isaacs, Charles C. Beaman, and Ernest Hail. Also for 35 members of Assembly, 12 State Senators, and Robert A. Greacen as Congressmen from Tenth District to fill vacancy.

The Prohibition, Socialist, Labor, and People's parties also had tickets in the field.

Owing to the rigid enforcement of the law compelling the closing of the saloons on Sunday by the Police Commissioners the German vote was very largely cast against the Fusion ticket, and again Tammany Hall placed its candidates in office by pluralities of about 20,000 votes. Amos J. Cummings was elected to Congress by a plurality of 5,072 votes. Of the 12 State Senators chosen from the city, 9 were Democrats and 3 Republicans; while of the 35 Assemblymen the Democrats elected 27 and the Republicans 8.

**NICARAGUA**, a republic in Central America. The Senate consists of 18 and the House of Representatives of 21 members, elected by the people for six years and four years respectively. The President is elected for four years. Gen. José Santos Zelaya was proclaimed President in September, 1893, as the result of a revolution, and afterward elected for the term ending in 1898. His Cabinet, as reorganized in April, 1895, was composed as follows: Foreign Affairs, Manuel Caronel Matus; Interior, Gen. Francisco Baladares Ferañ; War and Marine, Gen. Reuben Alonzo; Finance, Santiago Callejas.

**Finances.**—The receipts in 1892 were \$1,764,037, of which \$532,057 came from customs, \$622,066 from a tax on spirituous liquors, \$271,491 from a duty on tobacco, and \$338,423 from other sources. The expenditures were \$142,928 for the executive, \$49,679 for foreign affairs, \$89,624 for justice, \$142,699 for financial administration, \$1,265,727 for the public debt, \$132,007 for public instruction, \$343,173 for public safety, and \$817,739 for the army; total, \$2,983,576. The internal debt in 1891 amounted to \$932,309, and the foreign debt to \$3,037,536. The army does not exceed 3,500 troops.

The chief exports are coffee, hides, bananas, and gold and silver. The mines and many of the coffee and banana plantations are owned by Americans. The foreign trade is carried on largely by German merchants. The exports go to the United States, Germany, France, and Great Britain.

There are 88 miles of railroads and 1,245 miles of telegraphs. The construction of a railroad to Rama for the Government, 103 miles in length, has been begun.

**British Ultimatum.**—After the unsuccessful attempt to restore Chief Clarence in the Mosquito reserve in the summer of 1894, the British vice-consul, Hatch, 9 other British traders, and 2 Americans were arrested and, by order of the Nicaraguan Congress, expelled from the country. After the Mosquito troubles were ended by the establishment of Nicaraguan administration in the territory, Mr. Bayard obtained from Lord Kimberley the positive assurance that Great Britain asserts no right of sovereignty or protection over the territory, but, on the contrary, respects the full and paramount sovereignty of the Government of Nicaragua. The Mosquito nation by its voluntary act in December, 1894, agreed to the incorporation of the reserved territory in Nicaragua, and the Indians formally subjected themselves to be governed by the general laws of the republic instead of by their own customs and regulations, availing themselves of a right secured to them by the treaty of Jan. 28, 1860, concluded between Nicaragua and Great Britain. The British Minister of Foreign Affairs wished to have it understood that any action that the British Government might take in the way of obtaining redress from Nicaragua is wholly unconnected with any political or conventional question concerning the Mosquito reservation, but is simply a proceeding on the grounds of international law to obtain satisfaction for an affront. In matters concerning political control in Central America he had no other wish than to act in full accord and with the approval of the United States. The British Government demanded an explanation for the arrest and banishment without trial of British subjects. The Nicaraguan minister in London, Modesto Barrios, explained that no affront to England was intended, that the men were deported for fomenting disturbances, and that the proconsul, Hatch, was not a consular officer of Great Britain and had no *exequatur* from the Nicaraguan Government. On Feb. 26, 1895, Lord Kimberley presented a demand that the Nicaraguan Government pay £75,000 for arresting, imprisoning, and expelling those British subjects, and further cancel unconditionally the decree of expulsion and agree to a commission, composed of a British representative, a Nicaraguan representative, and a jurist not a citizen of any American state, to assess the damages that they had sustained; or, failing an agreement, that the assessment of damages should be committed to the President of the Swiss republic. For the seizure of a British schooner and the duress of an English engineer an indemnity of £500 was demanded. Nicaragua in her reply, while reiterating her denial of a breach of international law or an intentional affront to Great Britain, proposed that all the questions of payment for personal injury, damage to property, etc., be submitted to arbitration.

On March 19 Lord Kimberley handed to the Nicaraguan minister an ultimatum requiring that the British demand be complied with before April 26. The decree of banishment against the



British subjects implicated in the Mosquito rebellion was revoked before the first communication from Great Britain on the subject was received. The British Government intimated its intention to occupy the port of Corinto, on the Pacific, and receive the customs until sufficient revenue was collected to pay the fine and damages claimed. The United States Government acquiesced, Minister Bayard being assured that no acquisition of territory was intended and satisfied in his mind that England sought only satisfaction for an affront to which no self-respecting Government would submit without exacting redress. The expulsion of Proconsul Hatch was declared to be not a proper case for arbitration. The people of Nicaragua expected the Government of the United States to intervene and forbid the occupation of American territory and the collection of a fine arbitrarily imposed, on the ground that such proceedings would be a violation of the Monroe Doctrine.

**British Occupation of Corinto.**—A British fleet under Rear-Admiral Henry F. Stephenson, consisting of the "Royal Arthur," the "Wild Swan," and the "Satellite," entered the port of Corinto on April 22. The Nicaraguans had made preparations for resistance, sending 800 troops to the city under Gen. Rivas, and planting cannon. An officer was sent by the British commander to President Zelaya, at Managua, with a letter announcing that unless full compliance with Lord Kimberley's demands was received within three days he would take military possession of the port. If he encountered resistance he threatened to bombard the town. In a reply to the British naval commander the Nicaraguan Government persisted in its refusal to submit to the ultimatum. On the morning of April 27 a force of 400 sailors and blue-jackets was landed from the ships. All the Nicaraguan officials left the town, and the soldiers were withdrawn and all arms removed. As no opposition was offered by the Nicaraguans, all except a guard of 50 men were sent back to the ships in the evening. The British flag was hoisted over the customhouse, and Capt. Frederick French was appointed governor of the port. President Zelaya issued a proclamation, declaring Corinto to be a closed port and all goods landed contraband and liable to seizure if duties were paid on them to the British. He also proclaimed martial law throughout the republic. He published also a protest against the outrage perpetrated by Great Britain in the seizure of the port in order to seize by force a sum of money that Nicaragua did not owe, in absolute disregard of international law and the dictates of right and justice. In his reply to Rear-Admiral Stephenson's letter he protested against all acts of jurisdiction exercised by the British officers, and any violent means that might be used to force Nicaragua to comply with the ultimatum as being contrary to the sovereignty of the republic and highly offensive to its dignity and independence, declaring that justice bade the Government of Nicaragua to refuse compliance, and that the proposed method of carrying the ultimatum into effect was contrary to sound principles and the rights of persons.

The populace of Managua showed great excitement, calling upon the Government to resent the insult to the nation. People begged to be given

arms that they might go to Corinto to fight the English. A mob attempted to tear down the coat of arms over the door of the British consulate. Some rioting occurred at Corinto. Finding Corinto a useless possession, having no business and no means of communicating with the interior, Rear-Admiral Stephenson asked the authorities in London whether he should seize San Juan del Sur and other ports.

An effort was made in Nicaragua to raise the sum necessary to ransom the port by private subscriptions, and \$123,000 in silver was subscribed. The governments of Guatemala, Salvador, and Costa Rica urged the Nicaraguan President to submit, and offered to guarantee the payment. The United States Government continued to offer its good offices to both parties, and induced the Nicaraguan Government to promise that if the forces were withdrawn from Corinto Nicaragua would agree to pay the indemnity in fifteen days. The Nicaraguan Government requested the Salvadoran agent in London to intercede. He was unable to persuade the British Government to recede from its position. The Government of Salvador then offered to guarantee the payment of the indemnity, and finally induced President Zelaya to promise that the money would be paid if the British forces were withdrawn. Gen. Barrios on leaving the British capital for Nicaragua had left the interests of his Government in charge of the representative of Salvador.

On April 30 the British at Corinto further incensed the Nicaraguans by arresting Col. Casimiro Gonzalez on the charge of intimidating people to prevent them from selling provisions to the ships. The terms offered through the mediation of Chrisanto Medina, the Salvadoran minister to France and Great Britain, were finally accepted, and after a formal offer to that effect was made to Rear-Admiral Stephenson he embarked the British troops and evacuated the port on May 4. The money was deposited in London and paid over within the time fixed.

**Nicaraguan Canal Project.**—A concession was granted by the Republic of Nicaragua to the Nicaragua Canal Association of New York in April, 1887, and a Maritime Canal Company was organized to construct a ship canal across the isthmus, and was incorporated by the United States Congress Feb. 20, 1889. The contract for the execution of the work was taken by a Nicaragua Canal Construction Company. The period of three years and a half was allowed for the surveys, and a further period of ten years for the completion of the canal. The work of excavation was begun, and was formally acknowledged by the Nicaraguan Government Oct. 8, 1889, and in September, 1890, a commission reported that the company had fulfilled the provision in the concession requiring the expenditure of at least \$2,000,000 within the last year of the preliminary period. In the first year 19 miles of the route were cleared, 60 miles of telegraph were erected, and steam dredges were set at work at the Greytown end. After two years the work was continued at a slower rate. For a description of the proposed canal, with colored map, see "Annual Cyclopædia" for 1888, page 614.

In 1891 the company, having spent \$4,000,000 and issued certificates of stock for \$20,000,000

and bonds for \$5,953,000, asked the United States Congress to guarantee \$100,000,000 of bonds, and appoint an officer of the army to supervise the construction; but the bill failed to pass. In 1892 another was prepared by a committee of the Senate, which proposed to limit the capital stock to \$100,000,000, to cancel all stock and contracts excepting the stock assigned to the governments of Nicaragua and Costa Rica, and \$3,000,000 to be retained by the company in exchange for the concessions and privileges it had obtained; the United States was to reimburse the canal company for all its legitimate expenditures, and then the canal was to be constructed from the proceeds of bonds guaranteed by the United States Government. This bill was finally passed. It provided that the United States Government should issue \$70,000,000 of 3-per-cent. bonds to supply funds and should receive in return \$70,000,000 of the stock. The House of Representatives considered another bill, but took no final action. On April 2, 1895, President Cleveland appointed a board of experts to investigate and report upon the feasibility, permanence, and expense of a Nicaragua canal constructed along the route projected, so as to determine the advisability of the Government taking part in the enterprise. The board consisted of Major William Ludlow, of the Engineer Corps; Commander M. T. Edicott, of the navy; and Alfred Noble. When the company proposed to have the canal made with the credit of the Government the estimate of cost was put down to \$69,893,660, not far from Mr. Menoal's estimate for the actual work, which was \$65,000,000.

The board made an investigation on the spot, and concluded its studies in November, 1895. It reported that there were insufficient data upon which to found a final judgment as to the feasibility, permanence, and cost of a canal, and recommended that a survey and examination be made for the Government that would take eighteen months and cost \$350,000. The estimate the commission reached was \$133,472,893.

**NORTH CAROLINA**, a Southern State, one of the original thirteen, ratified the Constitution Nov. 21, 1789; area, 52,250 square miles. The population, according to each decennial census, was 393,751 in 1790; 478,103 in 1800; 555,500 in 1810; 638,829 in 1820; 737,987 in 1830; 753,419 in 1840; 869,039 in 1850; 992,622 in 1860; 1,071,361 in 1870; 1,399,750 in 1880; and 1,617,947 in 1890. Capital, Raleigh.

**Government.**—The following were the State officers during the year: Governor, Elias Carr; Lieutenant Governor, Richard A. Doughton; Secretary of State, Octavius Coke, until Aug. 30, when he died; Charles M. Cooke was appointed to succeed him; Treasurer, W. H. Worth; Auditor, R. M. Furman; Attorney-General, F. M. Osborn; Adjutant General, F. H. Cameron; Superintendent of Public Instruction, J. C. Scarborough—all Democrats except the Treasurer, who is a Populist; Commissioner of Labor Statistics, B. R. Lacy; Commissioner of Agriculture, S. L. Patterson; Chief Justice of the Supreme Court, William T. Faircloth, Republican; Associate Justices, D. M. Furches, Republican; and A. C. Avery, Walter Clark, and W. A. Montgomery, Democrats.

**Education.**—The centennial commencement of the State University was celebrated at Chapel Hill, June 4, 5, and 6. An oration was delivered by Alfred M. Waddell representing the older alumni, and one by Adolphus H. Eller for the younger, a poem by Henry J. Stockard, and a centennial ode by James D. Lynch of the graduating class. Addresses were made by Henry A. London and Stephen B. Weeks. Subscriptions amounting to \$18,000 were made for an alumni building. The university received \$21,500 during the year from the Mason and Speight bequests. The "fraternity question" was settled by the trustees who adopted a rule that students be not allowed to join fraternities until the second half of the sophomore year.

The Agricultural Department was consolidated by the Legislature with the Agricultural and Mechanical College, and appropriations were made for support for two years. The college graduated a class of 23. Wake Forest College graduated a class of 22 in June. Elon College graduated 5. It has had an addition of nearly \$20,000 to its endowment. Trinity College sent out a class of 15. At the commencement \$3,100 was subscribed toward a memorial building to the late President Baxton Craven, and \$5,000 was given for improving the grounds. Salem Female College graduated, at its ninety-third commencement, from its nearly 400 pupils, 53 in the regular course and 9 in special studies. At Greensboro Female College, founded in 1837, the senior class numbered 25. Peace Institute, at Raleigh, graduated 9 young ladies.

The State Normal and Industrial School, at Greensboro, closed its third year in May. The number of applicants to the school has been twice as many as could be accommodated, but more room has been added. The graduates numbered 28. In July the board bought 112 acres north of the institution for \$12,000.

The summer school of the university at Chapel Hill was attended by 104 teachers and those preparing to teach.

**State Institutions.**—The Legislature made appropriations for these for the biennial period as follows: Raleigh Asylum, regular \$130,490.20, special \$11,390.48; Morganton Asylum, regular \$180,000, special \$20,000; Eastern Hospital (colored), regular \$75,000, special \$20,000; Deaf and Dumb Institute at Morganton, regular \$70,000, special \$21,500; Blind Institute, \$80,000; Soldiers' Home, \$17,000; Penitentiary, \$49,000; State University, \$20,000; Normal and Industrial School, regular \$27,500, special \$10,000; Agricultural and Mechanical College, regular \$20,000, special \$30,000; Agricultural and Mechanical College (colored), \$10,000; Colored Normal Schools, \$13,250; Orphan Asylum, \$20,000; Colored Orphan Asylum, \$6,000.

The Penitentiary report gives the following statistics: There was an average number of 1,237 convicts in 1895, 3 more than in 1894. Of these, 180 were at the Central Penitentiary at Raleigh; 529 were at work on the Caledonia farm, 235 on the Northampton farm, 146 on the Halifax farm, and 73 at the Castle Hayne farm and mine; 67 were employed building for the Roanoke Rapids Company on the Great Falls Canal; and 45 for two months building a dam for the



Rocky Mount Cotton Mills. The number of deaths was 40; in 1894 it was 52. The 150 employees were paid \$47,278.49. The total expense of the Penitentiary for the year was \$186,494.49. Of this amount, the Penitentiary raised products, etc., to the value of \$54,869.23, and \$131,625.26 was paid out in cash.

The Oxford Orphan Asylum contained 101 boys and 103 girls in July. Cottages for the boys are building.

The census shows a total of 573 blind children in the State of school age; of this number only 143 are in the Institution for the blind. There are accommodations for 250.

**Industries and Products.**—The Labor Commissioner's report gives the following statistics of cotton mills: Number, 156; in course of construction, 11; looms, 24,858; spindles, 953,458; persons employed, 15,752 (of these, 4,888 are men, 6,157 women, and 4,689 children); capital employed, about \$15,000,000, or \$952.33 to each operative; cotton consumed, 123,658,775 pounds, or 309,147 bales weighing 400 pounds each. The average daily wages are: engineers, \$1.61 $\frac{1}{4}$ ; firemen, 89 $\frac{1}{2}$  cents; skilled men, \$1.10; unskilled, 70 cents; skilled women, 65 cents; unskilled, 50 cents; children, 30 cents. The average number of days worked in a year, 286 $\frac{1}{2}$ . At only 2 mills are there libraries. The per cent. of adults who can read and write is 95; children, 75.

The employees in railroad management and operation for 1895 are given at 9,439; 1894, 9,086; 1893, 9,000.

**Insurance.**—In July a conspiracy was discovered at Beaufort involving several prominent citizens, by which life insurance companies had been defrauded for eight years. Policies were taken out on the lives of persons in the last stages of fatal disease, and on the old and infirm. The medical examiners, who were working with local agents and others, made out false reports of examinations, ages, etc. Trials were held and convictions obtained. Six of the accused were sentenced in December.

**Railroads.**—There are in the State 3,616.58 miles of railroad, with a valuation of \$24,501,899.62, an increase of over \$12,000,000 since 1890. The taxable property increased in 1895 \$537,837. The gross earnings were \$9,008,054.35; the net income, \$2,974,475.93. About 10,000 persons are employed. Three roads have been abandoned: the Milton and Sutherlin, the Laurel River and Hot Springs, and the Hamilton. Only 3 are in the hands of receivers: the Cape Fear and Yadkin Valley, the Marietta and North Georgia, and the Norfolk and Western.

The most important matter concerning the railroads of the State is the lease of the North Carolina Railroad to the Southern Railway Company for ninety-nine years, at a rental in excess of the limit as fixed by its charter before the roadbed would become liable for taxation. This lease is denounced as most flagrantly unjust and unfair.

**Monuments.**—The monument at Raleigh to the Confederate dead, which was built by means of the efforts of the Ladies' Monumental Association of the State, was unveiled, May 20, by the little granddaughter of Gen. Thomas J. ("Stonewall") Jackson, in presence of a large

assemblage. The speakers were Capt. S. A. Ashe, Hon. A. M. Waddell, ex-Gov. Holt, and Hon. W. H. Cowles. The work for the monument began in 1892; the corner stone was laid May 20, 1894. The Legislatures of 1893 and 1895 made appropriations. The monument is 72 feet 6 inches high; at the top stands the figure of a Confederate infantry soldier at ground rest; the shaft near its base, about 25 feet from the ground, is flanked on one side by a cavalryman and on the other by an artilleryman. These figures are of bronze, and were made in Munich. The stone of which the monument was built is white North Carolina granite. It bears the inscription: "First at Bethel, last at Appomattox."

A monument was unveiled at Bentonsville, March 20, the thirtieth anniversary of the battle between Sherman's and Johnston's armies.

The corner stone of a monument to Leonidas Polk, bishop and general, killed at Pine Mountain, Georgia, June 14, 1864, was laid, Feb. 7, at Raleigh by Masons and members of the Farmers' Alliance, of which he was president. Gen. Polk was a native of Raleigh.

**Legislative Session.**—The regular biennial session of the General Assembly began Jan. 9 and ended March 13. The Assembly was divided politically as follows: Senate—Democrats, 8; Republicans, 18; Populists, 24. House—Democrats, 46; Republicans, 38; Populists, 36. Z. V. Walser was chosen Speaker of the House. At the election of a United States Senator to fill out the term of the late Senator Vance Jeter C. Pritchard, Republican, was elected by a vote of 116 to 45. His term will expire in 1897. For the full term, Marion Butler, Populist, was chosen by a vote of 117 to 45.

A bill to revise, amend, and consolidate the election laws filled 34 closely printed pages.

The method of county government was changed. Heretofore the county commissioners were elected by the magistrates of the county, who were appointed by the Legislature. Under the new law the people will elect 3 commissioners, who shall serve as a board of co-operation, with 2 others, to be appointed by the Superior Court judge, these 2 extra commissioners to be of a different political party from the commissioners elected by the people.

The county boards of education were abolished, and their powers and duties devolve upon the county commissioners.

It was enacted that the choice of schoolbooks be left to each county instead of, as heretofore, to a board consisting of State officers.

A revenue act was passed which increased the State levy 4 cents on the \$100 of property. Among the license taxes imposed were those upon hotels and boarding and lodging houses at the rate of 50 cents for each bedroom maintained, and on every practicing lawyer, practicing physician, and dentist the sum of \$10.

It was discovered in July that this act had not been ratified, and the question of its validity without ratification was taken to the courts.

A new oyster law was made. It requires that persons taking oysters must take a license and make oath that they are citizens and residents of twelve months' standing. A chief inspector of oysters is provided. Purchasers of oysters for

packing or otherwise dealing in them are to make sworn statements as to quantity, price paid, and the like, and pay a tax of 2 cents a bushel.

The public-school fund was increased from 16 to 18 cents on \$100 worth of property.

Two new criminal courts were created.

The legal rate of interest was made 6 per cent.

A law against prize fighting was enacted.

A resolution in the House to adjourn, out of respect to Frederick Douglass at the announcement of his death, was passed by a vote of 34 to 20. This, taken in connection with the report that resolutions to adjourn on the birthdays of Washington and Robert E. Lee had been voted down by the Senate, caused a great deal of feeling, and indignation meetings were held in several counties. Senator Butler gives the following version of the incident: "As a matter of fact, there is on the record of the House journal a resolution providing that when they adjourn on a certain day it be as a mark of respect to Fred Douglass. The Senate took no notice of the matter at all. The resolution was offered by a colored representative in a rush of business and was voted for by all parties, Democrats included, none of whom ever expected to hear of it again; and while the regular hour of adjournment by the House was 2 o'clock P. M., the House was in session that particular day till thirty-seven minutes past 2 o'clock. Both Senate and House adjourned promptly in honor of both Washington and Lee."

A resolution instructing Representatives in Congress to vote for free coinage of silver was indefinitely postponed.

The following appropriations were increased beyond those of the preceding Legislature: Insane asylums, increase of \$29,529.41; deaf, dumb, blind, and orphans, \$34,850; educational institutions, \$10,500; Penitentiary, \$49,158.71. The following were diminished: State Guard, \$20,000; Soldiers' Home, \$2,000; Normal and Industrial School, \$4,000.

A measure entitled "An Act to regulate assignments and other conveyances of like nature," provided that "all conditional sales, assignments, mortgages, or deeds in trust which are executed to secure any debt, obligation note or bond which gives preferences to any creditor of the maker shall be absolutely void as to existing creditors."

This act, which was said to be equivalent to a stoppage of business, and the manner of its passage made a disturbance that continued through the year. The apparent purpose of the law was to prevent preferences only in case of assignments for benefit of creditors; but in its effects the act was held to extend much further, and until the courts should have construed it, banks, associations, and others were afraid to lend money on mortgages. It was brought before the Supreme Court, which decided that the law only restricted the right to execute assignments, mortgages, and deeds of trust or make conditional sales to secure pre-existing debts. It was claimed that the act was not passed properly, and the question of its validity was brought before the Supreme Court in an application for an injunction to prevent the Secretary of State from publishing it. The court decided, by 3 against 2, that it had not the power to go back of the

record of the Legislature, which showed ratification of the act, and that the remedy must lie with the legislative branch of the Government. Justices Avery and Clark wrote dissenting opinions. An indictment was afterward found against the clerks of the two houses, and early in 1896 they were convicted. One was sentenced to pay \$250 fine and costs, and the other the same with the addition of twelve months at hard labor.

**NORTH DAKOTA**, a Northwestern State, admitted to the Union Nov. 3, 1889; area, 70,795 square miles. The population in 1890 was 182,719. Capital, Bismarck.

**Government.**—The following were the State officers during the year: Governor, Roger Allin; Lieutenant Governor, John H. Worst; Secretary of State, C. M. Dahl; Auditor, Frank A. Briggs; Treasurer, George E. Nichols; Commissioner of Insurance, Fred B. Fancher; Commissioner of Agriculture, A. H. Laughlin; Attorney-General, John F. Cowan; Superintendent of Public Instruction, Emma F. Bates; Railroad Commissioners, J. W. Currie, George H. Keyes, John J. Wamberg; Superintendent of Irrigation, W. W. Barrett; Chief Justice of the Supreme Court, Alfred Wallin; Associate Justices, Guy C. H. Corliss, J. M. Bartholomew—all Republicans.

**Finances.**—The Treasurer's report for 1895 shows receipts and expenditures as follow: Balance Dec. 31, 1894, \$61,568.16; receipts during the year from taxes for counties, \$334,165.23; receipts from other sources, including balance, \$826,060.22; total receipts, \$1,160,225.45; total disbursements, \$1,103,676.20; balance Dec. 31, 1895, \$56,549.25. Among the receipts were \$80,000 from sale of funding warrants for Legislature and incidental expenses, and \$130,000 from sale of funding warrants to pay outstanding indebtedness. The taxes from railroads amounted to \$97,223.90, and the insurance taxes to \$18,760.95. The warrants for legislative expenses were redeemed, as well as a small part of the debt incurred to pay warrants outstanding at the beginning of the year. Real estate was not assessed this year. The total personal valuation of the State is \$19,809,492. The tax levy was fixed at 4 mills for general taxes, and five tenths of a mill for interest.

**Education.**—The enumeration of pupils for the last apportionment was 63,567; the fund was \$115,691, or \$1.82 *per capita*. The enumeration had increased 7.2 per cent. over 1894. The average cost of tuition per pupil had been \$2.09, and the average daily attendance 79 per cent. of enrollment. The value of school property is \$1,643,181.77; paid for teachers' salaries, \$547,462.04.

The Valley City Normal School had 228 students at the spring term, of whom about 89 were in the normal proper, and the Mayville Normal 117, about 102 in the normal proper. A class of 11 was graduated at Valley City, and one of 15 at Mayville. As those schools had no appropriation for payment of salaries, it was supposed that they would be closed for the next two years, but subscriptions were taken for amounts sufficient to keep them open for the present year.

The Agricultural College had 82 students, of



whom 57 were in the preparatory department. The college has a creamery, the largest in the State, with capacity for handling 1,500 pounds of milk an hour.

The State University, at Grand Forks, had 156 students, 35 of them in the university classes and 121 in the preparatory school.

**State Institutions.**—The total number at the insane asylum during the biennial period ending Nov. 1, 1894, was 501, of whom 192 were women. The number remaining at the end of the period was 306. The percentage of recovery of those admitted during the two years was 59; of the number treated, 29; the average number present was 294. The expenses from March 1, 1893, to Oct. 31, 1894, were \$117,480.61.

The Soldiers' Home reported 27 inmates. The cost for rations *per capita* was 19½ cents a day, including tobacco. The cost, covering all expenses, except fuel and lights, which were estimated at 8½ cents a day, was 35½ cents a day.

The Deaf and Dumb School closed a month earlier than usual, in part because of dissensions in the faculty. It had 30 pupils in March.

The question of the location of the Blind Asylum, which by the Constitution is required to be in Pembina County, was fixed at the corporation of Bathgate.

There were 113 inmates at the Penitentiary at the end of 1895.

**Farming.**—The wheat harvest of this year was the most abundant in the history of the State. Prices were correspondingly low, but the great trouble was in getting the grain to market. The railroads were unable to move it as rapidly as it was ready to be shipped. Elevators, warehouses, barns, and grain houses built in the fields were stored full, and at one place bins were made on the fair grounds for temporary use. The crop of oats and other small grains was correspondingly large. The yield of potatoes was immense, the average being placed as high as 200 bushels to the acre. Renewed interest is taken in the production of flax, since it has been found that the oil product is of great use for fattening stock.

**Irrigation.**—The report of the Commissioner of Forestry and Irrigation shows that in 1894 an experimental irrigation plant was established at Bottineau, and the result proved so favorable that 2 districts have been organized in Bottineau County. North Dakota has 672 flowing artesian wells. One of these, the "Minnehaha," at Turtle Mountains, flows 283 gallons per minute. The native tree lands are estimated at 460,000 acres, and the cultivated trees at 40,000 acres.

**Immigration.**—An immigration convention was held in Fargo Dec. 17. A State committee was appointed, and county and town organizations are to be formed. Resolutions were adopted requesting Senators and Representatives in Congress to urge an appropriation to complete the examination of the artesian basin of James river valley, and a survey of the rivers.

**The Turtle Mountain Indians.**—An outbreak of these Indians was imminent in April and May, in consequence of trouble growing out of the attempted arrest of half-breeds for cutting timber on Government land. Chief Little Shell said he had given permission to the men to cut

the timber, as he claimed he had the right to do, since the Government had never paid the Indians for the land. This is a problem of long standing. About eleven years ago 2 townships of land were set aside for them, but were never made the subject of treaty. They claim that all the Turtle mountain land, about 10,000,000 acres, belongs to them. They have had assistance from the Government, and it is said that not only the Indians and half-breeds of the reservation have shared it with them, but that the Canadian half-breeds across the boundary line have also profited thereby. When these 2 townships were set aside for the Indians there were only 160 altogether, but the last census gave their numbers at 2,000. On this occasion the half-breeds, to the number of 275, encamped 3 miles from St. John's, and threatened to kill every white man in the vicinity if they were not let alone. Marshal Cronan took a posse of deputies and went to St. John's, surrounded the fort, and demanded the unconditional surrender of the men for whom warrants were held, as well as of all the arms and ammunition. The surrender was made without a shot having been fired. In a subsequent trial Chief Little Shell turned State's evidence.

**Legislative Session.**—The session of the Legislative Assembly began Jan. 5 and ended March 8. The members were divided politically as follow: Senate—Democrats 2, Republicans 25, Populists 4; House—Democrats 5, Republicans 49, Populists 8. James C. Gill was chosen Speaker of the House. During the session 178 bills were introduced in the Senate, of which 78 passed both houses; 180 were introduced in the House, of which 62 passed both branches.

The commission provided for by the Legislature of 1891 to codify and revise the laws made its report, and a joint committee on compilation was appointed to whom the codes were referred. They were adopted substantially as they came from this committee. Uncertainty arose after the adjournment as to whether the new codes could take effect before they were proclaimed by the Governor, and whether the laws passed by the session would be binding before that time. The question was referred to the Supreme Court by a test case, and the decision was that the revised codes could not take effect until thirty days after the proclamation by the Governor of their printing and acceptance. Meantime the old laws were in force and such laws of the session of 1895 as were accompanied by emergency clauses.

The trouble about the trustees of the Agricultural College and the Penitentiary (see "Annual Cyclopædia" for 1893, page 535) came up again in the Legislature, and was settled by a report of a committee to the effect that the charges had no foundation.

A committee was appointed to investigate the matter of supplies and expenditures during the preceding term. The report criticised the work of the ex-Treasurer and ex-Auditor, and charged mismanagement, especially in regard to public printing—overmeasurement of type, excessive numbers of copies of reports, and unnecessary matter included. A minority report (by 2 members of the committee) dissented from the ma-

jority report in every particular. The majority report was adopted.

A proposition to resubmit to the people the question of prohibition was defeated.

The State Superintendent of Forestry and Irrigation was made State Fish Commissioner. No fish can be legally taken from any of the waters of North Dakota, including the Missouri and the Red rivers, except by means of a hook and line. No fish can be legally shipped out of the State. And there are other restrictions.

A new game law was made, but as it was adopted as a part of the political code, it did not take effect during the season of 1895. A new office was created, that of State game warden, appointive by the Governor. For a license or permit to hunt with or without a dog during the open season a nonresident must pay \$25, and a resident of the State 50 cents. Prairie chickens, grouse, woodcock, plover, wild duck, wild geese, or brant may be killed only between Sept. 1 and Dec. 1. Buffalo, elk, deer, antelope, caribou, or mountain sheep may be killed only between Nov. 15 and Dec. 15.

None of the birds or animals named can be legally shipped out of the State.

Two laws were passed relating to cigarettes, one making it a misdemeanor to sell impure cigarettes or to sell any to persons under seventeen years old; the other forbidding the sale of any cigarettes, and imposing a fine of \$10 to \$50. It is claimed that the latter law is unconstitutional.

Bounties were provided for five years on potato starch, flax or hemp spinning fibers, and twine suitable for binding grain made in the State. For the eradication of the Russian thistle and French weed \$30,000 was appropriated.

An act providing for drainage in the Red river valley will result in the reclaiming of 125,000 acres of the best land in the valley.

An act was passed defining intoxicating liquors, covering the leading so-called "temperance drinks."

The Capitol commissioners reported the conclusion of their work in building the south wing of the Capitol, for which \$50,000 had been appropriated. Of this there was an unexpended balance of \$700.

The House repealed the gross-earnings law for taxation of railroads. The Senate also passed the repealing bill, and immediately enacted one adopting another system of gross-earnings taxation supposed to be satisfactory to all the roads. This bill did not become a law. The law of 1890, providing for direct taxation of railroads, was re-enacted.

Among other laws made were the following:

Reducing the amount of personal property exempt from taxation from \$200 to \$25.

Giving each district or township the power to vote on the question of free text-books.

Creating a State historical commission.

Fixing charges for stop-over on cars.

Accepting the provisions of the United States Statutes relating to soldiers' homes involving a grant of \$100 for each inmate.

Allowing State banks in towns of 500 or less with a capital of \$5,000.

Adopting the Minnesota law to prevent fraud in dairy products.

Providing for the employment of inmates of the

Penitentiary in making brick for public improvements, and in improving roads leading to public institutions.

Making it a misdemeanor to abuse, overload, or underfeed domestic animals, and making it the duty of municipalities to provide watering troughs.

Appropriating \$500 annually for expenses of the weather crop service.

Declaring that in all cases in which the probable duration of the natural life of any person from and after a particular age is material, the statistical tables known as the Carlisle Tables of Mortality are competent evidence.

Prohibiting the printing or sale of vulgar or indecent prints or papers, sheets devoted to tales of crime and bloodshed alone, and journals that make a specialty of this class of matter.

Making intoxication a misdemeanor.

Permitting farm laborers to file liens upon crops to secure payment for work done.

Compelling railroad companies to provide a certain number of brakemen to man trains not provided with air brakes.

Providing for teaching civil government and temperance in the schools.

Establishing courts of conciliation.

Providing for a geological and natural-history survey of the State.

Creating the office of chief State veterinarian.

Creating a high-school board and providing a system of higher education.

Establishing a garnishment law.

The Governor reduced the appropriations made by the Legislature to State institutions, on the ground that the amount of revenue available would not be sufficient. Following is a summary of the appropriations after reduction: Insane Asylum, \$128,500; Penitentiary, \$43,440; University, \$15,980; Soldiers' Home, \$11,900; Agricultural College, \$11,250; Mayville Normal School, \$7,700; Valley City Normal School, \$4,600; Deaf and Dumb School, \$16,500; total, \$239,870.

**NORTHWEST TERRITORIES OF CANADA.** Since 1888 these Territories have had an elective Assembly, and in 1890 the Federal Parliament provided for full self-government.

**Legislation.**—The fifth session of the second Legislature of the Territories was opened at Regina on Aug. 2, 1894, by Lieut.-Gov. Charles Herbert Mackintosh, and was prorogued on Sept. 7. Among the measures passed the following were the most important:

Respecting elections to the Legislative Assembly.

Respecting the formation of irrigation districts.

To amend the liquor-license ordinance.

To prevent trespass in pursuit of game.

For aiding in the construction of the Wolseley and Fort Qu'Appelle Railway.

Respecting exemptions from seizure and sale under executions.

Respecting the establishment of farmers' institutes.

Respecting the profession of medicine and surgery.

Relating to mortgages and sale of personal property.

The powers given to the Northwest Territories are the same as those held by the provinces of the Dominion, with the single exception of the right to borrow money upon their own credit.

Immediately after the prorogation of the Assembly the elections took place under the new ballot regulations and with increased representation. The Premier, F. W. G. Haultain, was sustained by a good majority.

The first session of the third Assembly was opened on Aug. 29, 1895, with a speech from the



Lieutenant Governor, of which the following extracts are the most important:

The Dominion Parliament having amended the Northwest Territories act, a reorganization of the magistracy will be necessary. With this in view, a carefully prepared digest of magisterial procedure is being prepared.

A careful inquiry justifies an estimate of between 4,000,000 and 5,000,000 bushels of wheat, or nearly double the crop of last year. From no portion of the Territories come reports of failure. Barley, oats, and the smaller products of the farm are equally plentiful. The cattle and sheep ranches are also in a thriving condition.

The announcement of noticeable transport reductions, to the amount of about 30 per cent. on butter, cheese, and eggs, recently made by the Canadian Pacific Railway authorities, will no doubt prove extremely advantageous. Reports of several new industries have recently been received.

In the recent Territorial Exhibition the entries in the various classes were double the number anticipated, every provisional district manifesting patriotic interest in the enterprise. The stock parade was admittedly the finest ever made in any part of the Dominion, and most of the herds were disposed of at good prices to prominent buyers.

The general census of the Territories, taken by order of the Dominion Government, early in the year, shows a gratifying increase of population throughout the various provisional districts since 1891.

The number of schools has noticeably increased. On Aug. 2, 1894, there were 330 public schools, 2 Protestant separate schools, 36 Roman Catholic public schools, and 10 Roman Catholic separate schools. At the present time there are 384 public schools, 2 Protestant separate schools, 44 Roman Catholic public schools, and 11 Roman Catholic separate schools. The number of pupils in August, 1894, was 8,926, and in August, 1895, is estimated at 9,750. Since August, 1894, further school debentures have been issued and registered to the amount of \$34,000. In addition to this, permission has been granted to several districts to issue debentures to the amount of \$21,000. The total school debenture responsibility does not exceed \$170,000, representing virtually the debt of the Territories.

The Dominion Government have decided to name, by order in Council, all the Territories between Alaska and Labrador. The far western district will be called Yukon; Athabasca will be enlarged by the addition of a portion of the eastern territory; the remaining portions will comprise Franklin, Churchill, and, to the far east, Ungava.

A few days since I had the honor of formally opening the Lady Aberdeen Woman's Hospital at Medicine Hat, under the auspices of the Woman's Hospital Aid Society. The Maternity Cottage is a handsome stone building, and will be a valuable addition to the general hospital.

Irrigation, authorized by the Dominion act of 1894, has proved extremely useful in portions of Alberta, where a large number of ditches have been cut, splendid results following. One hundred and sixteen are in operation, with irrigating capacity for 28,000 acres.

The Assembly was prorogued Sept. 30, after passing the following ordinances, among others:

- Respecting alimony.
- To provide for investigation of accidents by fire.
- Respecting stock injured by railway trains.
- Respecting threshers' liens.
- Respecting masters and servants.
- Respecting assessment of railways.
- To incorporate the Catholic parishes and missions in the diocese of Prince Albert.

**Territorial Exhibition.**—This exhibition was opened on July 29, 1895, by the Governor General of Canada, who was accompanied by the Premier, Sir Mackenzie Bowell, and other Do-

minion ministers. The World's Fair at Chicago had given Gov. Mackintosh the idea of advertising Territorial resources in this way, and he had obtained from the Dominion Parliament a grant of \$25,000 for the purpose. The capital, Regina, gave \$10,000, and a site for the buildings was provided. The result was an eminently successful exhibit of cattle and horses, lumber and cereals, poultry and dairy work, and the minor products of mixed prairie farming and ranching. There were over 8,000 entries, compared with the average of 3,000 at the annual exhibitions of Winnipeg.

**Agricultural.**—The following were the crops and live stock of the main populated portion of the Territories—West and East Assiniboia, Alberta, and Saskatchewan—for 1894, with the exception of one division for 1893: Cultivated land, 437,254 acres; wheat, 2,734,390 bushels; oats, 2,404,442 bushels; barley, 379,399 bushels; potatoes, 471,411 bushels; horses, 78,717; cattle, 283,077; sheep, 243,929; pigs, 29,266.

The production in 1895 was a great increase upon these figures, and the 100,000 people who inhabit these wide Territories are unusually prosperous. During 1894 a large number of fairs were held, and a considerable number of immigrants reported, mainly English and Germans. They settled chiefly at Edmonton, Prince Albert, and Duck Lake.

**Education.**—No religious instruction is allowed in any public school before three o'clock in the afternoon, at which time such instruction as is permitted by the trustees may be given, parents having the privilege of withdrawing their children at that hour. In 1894 there were 297 schools with 8,341 pupils.

**Miscellaneous.**—The 4 Territories have 1,772 miles of railway track. Under a Dominion act passed in 1873 a mounted-police force was organized, of 190 men, to protect the scattered population. On Nov. 30, 1894, the force numbered 947 men and officers, with 85 stations and 800 horses.

By the census of 1891 there were in the Territories 14,344 Roman Catholics, 15,966 members of the Church of England, 12,547 Presbyterians, 8,110 Methodists, and 4,735 persons who termed themselves "Protestants."

**NOVA SCOTIA**, an eastern province of the Dominion of Canada.

**Legislation.**—The first session of the thirty-first Legislature of the province was opened on Jan. 31, 1895, by Lieut.-Gov. M. B. Daly, with the usual speech from the throne, of which the following are extracts:

A good harvest, an average fishery, marked progress in mining operations, and considerable activity in other departments have combined to enable the people of Nova Scotia to avoid to some extent the depression of trade which prevailed so widely on this continent. It affords me much satisfaction to note the increased activity in coal-mining operations, the output of the mines having been considerably in excess of that of any previous year. The enlarged output in Cape Breton and the preparations for still further extension contribute materially to the prosperity of the province.

Very material progress has been made in the construction of the railway connecting the Cape Breton collieries with the port of Louisburg. We may look with confidence for the completion of that road during the ensuing summer, and we are justified in an-

ticipating that through its operation our coal trade will be further developed.

A contract has been entered into for the construction of a railway from Yarmouth to Lockport. A measure will be submitted to amend, in an important particular, the law respecting the payment of subsidies to railway companies. More important, perhaps, than the question of railway extension is that of the maintenance of our common roads. You will be asked to consider several proposed amendments to the laws respecting roads and to make some further provision for the large bridge service.

In accordance with an act of last session, arrangements were made for the taking, in connection with the general election, of a plebiscite on the question of prohibiting the liquor traffic throughout the Dominion. The returns indicate a very strong public sentiment in favor of prohibition. Since the taking of the plebiscite the disputed point of the relative powers of the Dominion and provincial legislatures, as respects the enactment of prohibitory measures, has been decided by the Supreme Court of Canada in terms which place the subject beyond provincial authority.

F. A. Lawrence was elected Speaker of the Assembly. During the session, which closed on March 20, the principal measures passed were as follow :

To amend the Revised Statutes "Of the Solemnization of Marriage."

To amend and consolidate the acts relating to towns' incorporation.

To amend chapter liii of the Revised Statutes, fifth series, "Of Railways."

To amend and consolidate the factor's acts.

For amending and consolidating the acts relating to arbitration.

To amend and consolidate the acts relating to public instruction.

To amend the law respecting compulsory education of children in the city of Halifax.

To amend the act respecting succession duties.

To amend the trustees' acts.

Respecting the sale of intoxicating liquors.

To regulate the closing of shops and the hours of labor therein for children and young persons.

To amend the Nova Scotia judicature act (1884).

To amend the law respecting exhibitions.

To provide for the formation of the Nova Scotian Farmer's Association.

To amend the acts for the encouragement of agriculture.

**Government.**—Hon. W. S. Fielding, who has been Premier and Provincial Secretary since 1884, appealed to the people again in March, 1894, and was sustained by a good majority. He is a Liberal, as is his chief lieutenants Hon. J. W. Longley, Attorney-General, but they manage to hold their own despite the province being strongly Conservative in Dominion politics. The other members of the executive are: Hon. C. E. Church, Commissioner of Works and Mines, Hon. T. Johnson, Hon. A. H. Corneau, and Hon. G. H. Murray.

**Education.**—In 1894 the school sections numbered 1,891; the schools in operation were 2,292, or 40 more than in the preceding year. There were 2,351 teachers, of whom 499 had been trained in normal schools. There were 93,520 pupils in the common schools, and 4,650 in the high schools. The total provincial grants for 1894 were \$220,436, the county funds expended were \$120,507, and the section assessment was \$454,200—making a total of \$795,144, or \$126,000 more than in 1893.

**Fisheries.**—The number of fishermen in Nova

Scotia during 1894 was 5,907 in vessels and 19,571 in boats. The value of their vessels, boats, nets, wharves, fish houses, etc., was \$3,361,972, and the total yield of the fisheries was \$6,547,387, an increase in the year of \$140,000. The exports of the province in fish were \$5,100,873, and the distribution of the catch was as follows: Salmon, \$100,483; mackerel, \$485,299; herring, \$811,284; cod, \$2,450,341; haddock, \$400,135; lobsters, \$1,294,557; hake, \$152,220; pollock, \$175,106; halibut, \$121,895; smelts, \$21,517; oysters, \$10,048; miscellaneous, \$524,502.

**Halifax Exhibition.**—During September, 1894, an exhibition was held at the provincial capital under the patronage of Gen. Montgomery Moore and Admiral Sir John Hopkins, and a commission composed of men in the province. The buildings cost \$6,000, the prizes given amounted to \$5,778. The exhibits of horses, cattle, sheep, swine, poultry, fruits, and minerals were good. A series of naval and military manœuvres was arranged, which lasted during the week. The total expenditure on the exhibition was \$19,130.

**Shipping.**—The tonnage carrying into and out of the province in 1894 was 2,503,670 tons. The coasting trade in 1894 was 4,403,014 tons, a slight increase over the preceding year.

**Finances.**—Premier Fielding delivered his budget speech on Feb. 11, 1895. The revenue during the year ending Sept. 30 had been fully up to the estimate. The chief items were: The Dominion subsidy of \$432,813; the receipts from mines of \$242,657; from the Hospital for Insane, \$40,403; and from the Western Counties Railway less refund of \$50,000 loan, \$131,021. The total ordinary revenue was \$888,213.70. The expenditure was \$862,842.89, leaving a surplus of \$25,370.81. The total liabilities were given as \$3,167,493, and the assets as \$1,358,182. The estimated revenue for 1895 was \$833,063, and the expenditure \$832,968.

**Minerals.**—The production for the year ending Sept. 30, 1894, included 19,980 ounces of gold, 83,512 tons of iron ore, 2,200,235 tons of coal, and an export of gypsum valued at \$106,171. Much Nova Scotian coal used to go to the United States. During the years of free admission—from 1854 to 1866—this export ran up from 139,125 tons to 404,252. Since then it has varied from 102,000 tons in 1883 to 79,837 in 1894. But the production has steadily increased. The number of persons employed during the year in the coal mines was 5,936.

**Railways.**—The year 1894 will be remembered for the acquisition of the Western Counties Railway by the Windsor and Annapolis Railway Company, which lines were merged under one management and called the Dominion Atlantic Railway. An effort was also made to give railway aid and traffic to the western shore districts of the province. The union of the two roads mentioned will enable the company to compete more effectively with the water traffic between Halifax and Boston, and Annapolis and St. John.

During the nine months from Jan. 1 to Sept. 30, 1894, the Nova Scotia railways carried passengers who paid \$205,475, freight paying \$185,605, and mails and sundries paying \$22,914. There were 825 miles of track in the province on June 30, 1894.





**OBITUARIES, AMERICAN, FOR 1895.**

**Adams, Myron**, clergyman, born in East Bloomfield, N. Y., March 12, 1841; died in Rochester, N. Y., Dec. 29, 1895. He entered Hamilton College with the class of 1863, but at the close of his junior year enlisted as a private in the 126th New York Volunteers. He participated in the defense of Harper's Ferry, where he was among the 11,000 men surrendered. He was successively corporal, hospital steward, 2d lieutenant, and acting assistant inspector general. On March 3, 1863, he was assigned to the signal corps, and the same year he was made acting adjutant of the 2d United States Colored Regiment. In 1864 he was in the battle of Mobile Bay as signal officer on the "Lackawanna." His part in the engagement is described in "Battles and Leaders of the Civil War," Vol. IV, page 397. Lieut. Adams rode to Washington with the news of the surrender of the last Confederate troops east of the Mississippi at the close of the war. He was offered the rank of major, but refused it. He was graduated with his class at Hamilton College and took a course at Auburn Theological Seminary, and, after a pastorate of one year at Union Springs and seven years at Dunkirk, was called to Rochester, N. Y., in 1876, where he remained till his death as pastor of Plymouth Congregational Church. About 1881 his theological views underwent a change, and he announced to his congregation his disbelief in some of the tenets of the Church, especially in that of the eternity of future punishment. This brought upon him the censure of orthodox clergymen of the city, the withdrawal of the fellowship of the Ontario Association of Congregational Churches, and the loss of a part of the membership of his own church. But as the majority either sympathized with his views or were willing to accord full freedom to thought and to the expression of sincere conviction, he remained in the pastorate, and the church became known as a liberal organization, and ultimately set aside the confession of faith of the orthodox churches and adopted as its bond of union a simple declaration of faith in the fatherhood of God and the brotherhood of man, and a pledge to work toward universal recognition of the one and practical realization of the other. Mr. Adams became a Christian evolutionist, and gave expression to his beliefs in his sermons and a systematic exposition of them in his first published book, "The Continuous Creation" (Boston, 1889), and of his theory of continued inspiration and progressive revelation in "The Creation of the Bible" (1892).

**Almy, John Jay**, naval officer, born in Newport, R. I., April 25, 1814; died in Washington, D. C., May 16, 1895. He entered the United States navy as a midshipman, Feb. 2, 1829; became lieutenant, March 8, 1841; commander, April 24, 1861; captain, March 3, 1865; commodore, Dec. 31, 1869; and rear admiral, Aug. 24, 1873; and was retired April 24, 1877. He was on sea service for twenty-seven years and ten months, on shore or other duty fourteen years and eight months, and was unemployed twenty-three years and nine months. He was attached to the line-of-battle ship "Ohio" in the Gulf of Mexico and the Pacific Ocean in 1846-'50; took part in the siege of Vera Cruz and the capture of Tusan, and commanded a fort at Mazatlan during the naval occupation of that place; was on coast-survey duty in Chesapeake Bay and on the coast of Virginia and North Carolina in 1851-'56; and commanded the "Fulton" on the coast of Central America in 1857, when the Walker filibustering party surrendered to Admiral Paulding on board that vessel. In 1858-'59 he commanded the same vessel in the expedition to Paraguay. During the civil war he was attached to the North At-

lantic and South Atlantic squadrons, and captured 4 blockade runners with valuable cargoes and chased ashore and destroyed 4 others. While commanding the "Juniata" off the coasts of Brazil and South Africa in 1865-'67 he rescued a Brazilian brig and crew from shipwreck, for which he was thanked by the Emperor. He was on ordnance duty at the New York Navy Yard in 1868-'69; chief signal officer of the navy at Washington, D. C., in 1870-'72; and commander of the naval forces in the Pacific Ocean from September, 1873, till July, 1876. He protected property at Panama during the revolution of 1873.

**Ames, Oliver**, financier, born in North Easton, Mass., Feb. 4, 1831; died there Oct. 22, 1895. He was the second son of Oakes Ames; was apprenticed in his father's shovel manufactory, took a special course at Brown University, and became a member of the firm of O. Ames & Sons in 1863. For ten years he superintended the mechanical business of the establishment, and at his father's death, in 1873, the numerous financial trusts held by him devolved on the son. By reason of his great undertakings in the Union Pacific Railroad and similar enterprises, Oakes Ames left an estate burdened with obligations aggregating \$8,000,000. Through sagacious management Oliver discharged this indebtedness, paid about \$1,000,000 in legacies under his father's will, and secured a large surplus to divide among the heirs in a few years. In 1880 and 1881 he was elected to the State Senate. In 1882 he received the Republican nomination for Lieutenant Governor on the ticket headed by R. R. Bishop. The latter was defeated by Gen. Butler, but Mr. Ames was elected by a handsome plurality. He was re-elected in 1883, 1884, and 1885, and was elected Governor in 1886, 1887, and 1888.

**Anderson, Charles**, lawyer, born at "Soldiers' Retreat" (now a part of Louisville), Ky., June 1, 1814; died in Paducah, Ky., Sept. 2, 1895. He was a son of Col. Robert Clough Anderson, and a brother of Robert C. Anderson, a former United States minister to Colombia, and of Gen. Robert Anderson, of Fort Sumter fame. He was graduated at Miami University in 1833; was admitted to the bar in 1835; settled in Dayton, Ohio, to practice; became prosecuting attorney of the county; and was elected to the State Senate in 1844. After an extended European tour he settled in Cincinnati, where he entered into a law partnership with Rufus King. In 1859 he removed to San Antonio, Texas, and engaged in farming, but in the following year was compelled by his Union proclivities to return to the North. In 1861 he was appointed colonel of the 93d Ohio Volunteers, with which he served till severe wounds received in the battle of Stone River (Dec. 31, 1862-Jan. 2, 1863) forced him to resign. In 1863 he was elected Lieutenant Governor of Ohio on the ticket headed by John Brough, and in August, 1865, on the death of Gov. Brough, he became Governor. It was Mr. Anderson who discovered Hiram Powers at work in a stone-yard in Cincinnati, gave him his first order for a bust, and introduced him to Nicholas Longworth, who became the patron of the future sculptor.

**Aronson, Alexander I.**, benefactor, born in St. Petersburg, Russia, in 1856; died in New York city, June 24, 1895. He was educated in medicine at Jena, Germany; removed to New York city in 1880; and began practicing on the east side in 1882. He had inherited a considerable estate, and spent the whole of his professional life in benefiting others. For many years he applied himself to the discovery of a cure for consumption. He passed two years in Europe, familiarizing himself with the effects of Koch's lymph, and on his return he opened a Koch institute, which subsequently became known as the Aronson Hospital



for Consumptives. Here he treated many cases daily, most of them without charge. In dispensing this and other charities he recognized neither creed nor race. A favorite act of his was to discover a landlord pushing a poor tenant to the wall, then to appear on the scene at the last moment, and end the proceeding with a check for the full amount due. He had conspicuously risked his life to aid the suffering poor on many occasions, and by his charitable works had endeared himself to a large community. His death was sudden, and at the funeral it was estimated by the police that fully 15,000 people viewed the remains.

**Atwood, Charles B.**, architect, born in Millbury, Mass., May 18, 1849; died in Chicago, Ill., Dec. 19, 1895. He began studying architecture when seventeen years old, took the full course in the Harvard Scientific School, and worked with his architectural preceptors till 1872, when he opened an office of his own. Within three years he received a prize for a



design for the city hall in San Francisco, two prizes for the State Capitol in Hartford, Conn., one for the courthouse in Springfield, Mass., and the first prize and commission to build the city hall in Holyoke, Mass. In 1875 he removed to New York, and during the next six years designed the residences of David Dows, William H. Vanderbilt, Elliott F. Shepard, and William D. Sloane, and interior decorations for the residence of

Mrs. Mark Hopkins in San Francisco. In 1884 he gained the first prize, against 125 contestants, for a design for the Boston Public Library, but for some unexplained reason the design was not used. After spending two years in designing the interior decorations for Mrs. Mark Hopkins's residence in Great Barrington, Mass., he gained the first prize of \$5,000 for plans for a new city hall in New York, which were highly recommended by the board of experts. From April 1, 1891, till July 1, 1893, he was associated with Daniel H. Burnham, Director of Works of the World's Columbian Exposition, and distinguished himself by his designs for the Art Building, the Peristyle, the terminal station, the terraces, the bridges, the rostral columns, the Service Building, the forestry, and many minor decorative features. Mr. Burnham says of him: "Atwood was tall and rather slender, of elegant figure and bearing, with a head remarkable for its beauty of outline. His voice was sweet and of that peculiar quality which opens the door of one's heart to its possessor. Altogether, his presence was grateful to one's love of grace and dignity and to one's sense of those intangible elements we comprehend in the name of gentleman. From the beginning of his independent career he was much more interested in monumental works than in the lesser problems of architectural practice. He had been trained in a school of classic design, and although he occasionally used other styles, his successes were made when following most closely the Greek forms and feeling. He was a great user of books, and constantly referred to the measurements made by scholars, and to the drawings and comments of masters of our art. His mind was receptive to suggestion, but still when it came to the final design he was tenacious of his own convictions. I never met his equal as a draughtsman; he worked with his left hand, and his execution was marvelously sure and rapid. After

a sketch had been made by him there was very little improvement to be suggested. He was of an honorable, charitable disposition, but, as most great artists have been, was a mere child in the practical things of life."

**Badeau, Adam**, author, born in New York city, Dec. 29, 1831; died in Ridgewood, N. J., March 19, 1895. He was educated at private schools, and became a contributor to the newspaper press, under the pen name of "The Vagabond." He entered the national army as an aid on the staff of Gen. Thomas W. Sherman in 1862, and was wounded in an assault at Port Hudson, May 27, 1863. In March, 1864, he became military secretary to Gen. Grant, with the rank of lieutenant colonel. He occupied the place till May 18, 1869, when he was retired with the rank of captain in the regular army and of brevet brigadier general of volunteers. In May, 1869, he was appointed secretary of legation in London, where he served till December, when he was assigned to duty as bearer of dispatches to Madrid. He returned to London as consul general in May, 1870, and retained that office till September, 1881. During this period he was granted leave of absence, on the request of Gen. Grant, to accompany him on his tour around the world, 1877-78. In May, 1882, he was appointed consul general at Havana. During his incumbency he made charges of corruption against the State Department, and in April, 1884, on being denied an opportunity for substantiating them, he resigned the office. While consul general at London he received the appointments of minister to Belgium (1875) and to Denmark (1881), but declined both missions. On his retirement from office he sought to re-enter the army, claiming that his military office had not been vacated by public service elsewhere. This led to a controversy that was not settled till Aug. 8, 1890, when the President and the Secretary of War decided that his acceptance of the office of secretary of legation at London, on May 19, 1869, had vacated his military office. In March, 1888, he brought suit against the estate of Gen. Grant for payment of services alleged to have been rendered the general in the preparation of his memoirs, but was defeated. His principal publications are: "The Vagabond" (New York, 1859); "Military History of Ulysses S. Grant" (3 vols., 1867-81); "Conspiracy: A Cuban Romance" (1885); "Aristocracy in England" (1886); and "Grant in Peace" (1886).

**Bailey, Joseph Mead**, jurist, born in Middlebury, Vt., June 22, 1833; died in Freeport, Ill., Dec. 15, 1895. He was graduated at the University of Rochester, N. Y., in 1854, and removed to Freeport to practice law two years afterward. In 1866-70 he was a member of the Illinois Legislature, in 1877-88 was a judge of the Superior Court of Illinois, and from 1888 till his death was a justice of the Supreme Court. He became a trustee of the University of Chicago in 1878, and for several years was dean of the Chicago College of Law. Judge Bailey was widely known among educators because of his efforts to promote legal education.

**Baldwin, Charles Candee**, jurist, born in Middletown, Conn., Dec. 2, 1834; died in Cleveland, Ohio, Feb. 2, 1895. He was graduated at Wesleyan University, received his diploma at the Harvard Law School in 1857, and was admitted to the bar in Cleveland the same year. At the time of his death he was the presiding judge of the circuit court of Ohio for the 8th Judicial District. He was one of the founders of the Western Reserve Historical Society, and its president since 1886.

**Ballou, Maturin Murray**, journalist, born in Boston, Mass., April 14, 1820; died in Cairo, Egypt, March 27, 1895. He was a son of the Rev. Hosea Ballou; was educated in the Boston High School, held Federal clerkships for several years, and entered journalism on the weekly "Olive Branch" in 1838. Subsequently he became editor and proprietor of "Gleason's Pictorial" and "Ballou's Monthly," and undertook large building operations in the business part of Bos-



ton, erecting the St. James Hotel and other structures. In 1872 he was one of the founders of the "Boston Daily Globe," and for many years he was its chief editor. He was also sole or part proprietor of "Balou's Pictorial," "The Flag of our Union," and the "Boston Sunday Budget." For many years he had traveled extensively. His publications include "Due West," "Due North," "Due South," "Under the Southern Cross," "The New El Dorado," "Aztec Land," "The Pearl of India," "The Story of Malta," "Equatorial America," "A Treasury of Thought," "Pearls of Thought," "Notable Thoughts about Women," "Genius in Sunshine and Speech," "Edge Tools of Speech," "Biography of the Rev. Hosea Balou," and "Life Story of Hosea Ballou." He bequeathed to 10 institutions, payable on the death of his widow, each \$2,000.

**Barney, Hiram**, lawyer, born in Henderson, N. Y., May 30, 1811; died in Kingsbridge, N. Y., May 18, 1895. He was graduated at Union College in 1834, began practicing law in New York city in 1840, and became associated with Benjamin F. Butler, formerly Attorney-General of the United States, in 1849. In 1830 he became active in the temperance and anti-slavery movements, in 1840 was an unsuccessful anti-slavery candidate for Congress, in 1848 was nominated for presidential elector on the Free-soil ticket, and in 1852 was similarly placed on the Free Democrat ticket (Hale and Julian). He was a delegate to the convention of the Republican party in 1856, and to the Chicago convention in 1860. President Lincoln appointed him collector of the port of New York, and when he resigned this office three years afterward he was tendered a foreign mission.

**Bassett, Isaac**, Government official, born in Washington, D. C., in 1819; died there Dec. 18, 1895. His father was one of the doorkeepers of the Senate chamber, and was in the habit of taking his son with him on important occasions. In 1831 the lad attracted the attention of Daniel Webster, who appointed him a page to the Senate, the second one it had had. From that year till his death he was in the continuous service of the Senate, in recent years holding the places of assistant doorkeeper and assistant to the sergeant at arms. His seat was at the left of the presiding officer, and it was his claim that he had never missed a session till he broke down during the night sessions while the repeal of the Sherman law was being considered in 1893, and that he had never missed being present at the opening of Congress in sixty-four years excepting that of the present one, which he was too feeble to attend.

**Bates, Clara Doty**, author, born in Ann Harbor, Mich., Dec. 22, 1838; died in Chicago, Ill., Oct. 14, 1895. She published her first book in 1868; married Morgan Bates, a publisher in Chicago, in 1869, and was the collector of the model library for children for the World's Columbian Exposition. For many years she had written for juvenile periodicals, and besides stories and poems brought out in Christmas books she had published "Blind Jakey" (1868); "Æsop's Fables," in verse (1873); "Heart's Content," a story of child life in Michigan; and "From Heart's Content," a volume of verses.

**Battell, Robbins**, philanthropist, born in Norfolk, Conn., April 9, 1819; died there Jan. 26, 1895. He was graduated at Yale College in 1839, and since the death of his father, in 1841, had been principally occupied with the management of the Battell estate. He served several terms in the Legislature, was a delegate to the Peace Convention of 1861, and was Comptroller of Connecticut in 1866. He was deeply interested in the promotion of agricultural, temperance, missionary, educational, and humanitarian works. It is estimated that the gifts of himself and family to Yale College aggregated \$300,000. Other gifts were a gymnasium, library, and memorial chapel to the town of Norfolk, \$10,000 to the Long Island Historical Society, and chimneys of bells to Yale and other colleges. He made a large collection of paintings by artists of the United States.

**Batley, Robert**, physician, born in Augusta, Ga. Nov. 26, 1828; died in Rome, Ga., Nov. 8, 1895. He was graduated at the University of Pennsylvania in 1856 and at the Jefferson Medical College in 1857, and spent his professional life in Rome, Ga. During the civil war he served as surgeon in the Confederate army, both on the field and in the hospital. He was Professor of Obstetrics in Atlanta Medical College in 1873-75, edited the "Atlanta Medical and Surgical Journal" in 1873-76, and was President of the Georgia Medical Association in 1876. Dr. Batley was most widely known as the originator of an operation now bearing his name for removal of the ovaries.

**Baxter, Mary Elizabeth Roberts**, philanthropist, born in Manchester, Vt., in June, 1828; died in Rutland, Vt., Nov. 9, 1895. She married Gen. Horace H. Baxter in 1851, and after 1854 passed her winters in New York city and her summers in Rutland, where her husband had large interests. For many years she was active in church and benevolent work. She presented to the city of Rutland a library at a cost of more than \$100,000, made large annual gifts to Bishops Graves, of Colorado, Talbott, of Wyoming and Idaho, Brewer, of Montana, and Johnson, of Texas, and promoted in other ways church work.

**Beecher, Edward**, clergyman, born in East Hampton, Long Island, Aug. 27, 1803; died in Brooklyn, N. Y., July 28, 1895. He was a son of the Rev. Lyman Beecher and an elder brother of the Rev. Henry Ward Beecher, and was graduated at Yale College in 1822. After graduation he taught in the Hartford, Conn., High School for over a year, then studied theology at Andover and New Haven; was appointed a tutor in Yale in 1825, and was ordained pastor of the Park Street Congregational Church, Boston, in the following year. He remained in this charge till 1830, when he was elected President of Illinois College, where he served for fourteen years. Returning to Boston, he was pastor of the Salem Street Church from 1844 till 1856, and also senior editor of the "Congregationalist" in 1849-53. In 1856 he accepted a pastorate at Galesburg, Ill., which he held till 1871, and since then had resided in Brooklyn, N. Y., without pastoral charge, but active in various religious works, excepting the period 1885-89, when he was pastor of the Parkville Congregational Church. During his residence in Illinois he was for several years Professor Extraordinary of the Christian Organization of Society in the Congregational Theological Seminary, Chicago. His effective work in the anti-slavery cause began while he was President of Illinois College, and was incited by his indignation at the assault on the freedom of the press in the case of Elijah P. Lovejoy at Alton in 1837. He aided in founding the Illinois State Antislavery Society, and prepared its declaration of principles and constitution. He then drew up a vigorous address to the public on the situation of affairs. In November he assisted in secreting a second printing press in the store of Godfrey & Gilman, where E. P. Lovejoy was killed in defending it on the 6th. When eighty-six years old he underwent an amputation of a leg, rendered necessary by a railroad accident, and surprised his acquaintances by his speedy recovery. He ascribed his remarkable vitality to his regular practice of physical culture from early youth. From 1824 till within a short time of his death he was a prolific writer, and besides editorials, reviews, and contributions on a great variety of subjects, he published in book form "Address on the Kingdom of God" (Boston, 1827); "Six Sermons on the Nature, Importance, and Means of Eminent Holiness throughout the Church" (New York, 1835); "Statement of Antislavery Principles and Address to the People of Illinois" (1837); "History of the Alton Riots" (Cincinnati, 1838); "Baptism: Its Import and Modes" (New York, 1850); "The Conflict of Ages" (Boston, 1853); "The Concord of Ages" (New York, 1853); "The Papal Conspiracy" (Boston, 1855); and "History of Opinions on the Scriptural Doctrine of Future Retribution" (New York, 1878). His widow died Nov. 14, aged eighty-nine.



**Bentley, Henry H.**, electrician, born in Dutchess County, N. Y., in 1834; died near Rhinebeck, N. Y., Sept. 7, 1895. He removed to New York city in 1854, became a writer on the "Tribune," subsequently organized the New York City and Suburban Printing Telegraph Company, and on its failure leased the plant and operated it successfully. He laid the first working cable under the East river to Brooklyn, and established a message-delivery service and a mail service between Madison Square and the general post office long before there were any branch post offices in the city. His health failing, he sold out his New York interests and removed to Philadelphia. He became editorially connected with the "Philadelphia Inquirer," and was one of its field correspondents during the civil war. After the war he applied himself to telegraphy; built local private lines; organized and became President of the Philadelphia Local Telegraph Company; and was made President of the Gold and Stock Reporting Telegraph Company and of the Bell Telephone Company, of Philadelphia.

**Bingham, George Azro**, jurist, born in Concord, Vt., April 25, 1826; died in Littleton, N. H., Jan. 22, 1895. He was educated in his native State; was admitted to the bar in 1848; practiced in Lyndon, Vt., till 1852, and then removed to Littleton; and was a justice of the Supreme Court of New Hampshire in 1876-'80 and 1884-'91. Judge Bingham was a Democrat in politics; served two terms each in the State Senate and the Lower House; was a delegate to the National Democratic Convention in 1860; and was an unsuccessful candidate for Congress in 1880.

**Blake, Amos Shepard**, manufacturer, born in Brookfield, Vt., Jan. 18, 1812; died in Waterbury, Conn., Feb. 18, 1895. He learned and practiced dentistry; was a mining superintendent in the Lake Superior region in 1852-'55; and at the beginning of the civil war engaged in manufacturing. In the winter of 1830-'31 he constructed the first locomotive ever seen in New England, designed to illustrate the practicability of travel by railroad, and large enough to carry two persons at a time around a hall on a circular track. This engine was exhibited throughout the Northern States by Asa Harrington. Dr. Blake procured 19 patents, and in 1865 organized the firm of Blake, Lamb & Co. to manufacture under them. During the civil war he superintended the manufacture of percussion caps for the National Government. He was for three terms a member of the Legislature of Connecticut.

**Boise, James Robinson**, educator, born in Blandford, Mass., Jan. 27, 1815; died in Chicago, Ill., Feb. 9, 1895. In youth he removed to Hartford, Conn., to learn the tailor's trade; was there converted and licensed to preach by the First Baptist Church; was graduated at Brown University in 1840; and was immediately appointed a tutor of ancient languages there. In 1850 he went abroad to study; in 1862 became Professor of the Greek Language and Literature in the University of Michigan; in 1868 took the same chair in the University of Chicago; and in 1877 was appointed Professor of New Testament Interpretation in the Baptist Union Theological Seminary. On the establishment of the new University of Chicago he was made Professor Emeritus of New Testament Greek. He edited several classical text-books for schools and colleges, and published "Notes" on the epistles to the Galatians, Romans, Ephesians, Colossians, Philemon, and Philippians.

**Bowers, Elizabeth Crocker**, actress, born in Stamford, Conn., March 12, 1830; died in Washington, D. C., Nov. 6, 1895. She was a daughter of a Protestant Episcopal clergyman, who died in her youth, and a sister of Sarah Crocker, who married Frederick P. Conway, the actor. She made her first appearance on the stage as Amanthis at the Park Theater, New York, in 1846; married David P. Bowers, the actor, in the following year; and appeared as Donna Victoria in "A Bold Stroke for a Husband" at the Walnut Street Theater, Philadelphia, a week after her

marriage. At the close of this engagement she made one for the Arch Street Theater, which was continued till her husband's death, in 1857. After a brief retirement she managed the Walnut Street Theater for two years and the Philadelphia Academy of Music for a shorter period; married Dr. Brown, of Baltimore; and in 1861 made a professional trip to England. Her performance as Julia in "The Hunchback" at Sadler's Wells Theater, London, won high praise. She also played an engagement there at the Lyceum Theater, largely increasing her popularity as Geraldine d'Arey in "Woman." In 1863 she returned to the United States; played an engagement at the Winter Garden, New York; married, on the death of her second husband, J. C. McCollom, her leading man; repeated with him many of her old and favorite characters; and retired for several years. She organized a new dramatic company in 1888.

**Boyesen, Hjalmar Hjorth**, author, born in Fredericksvaern, Norway, Sept. 23, 1848; died in New York city, Oct. 4, 1895. He was graduated at the University of Christiania in 1868; came to the United States in April, 1869; and, after making a tour of New England, went to Chicago and became associate editor of the "Fremad." While in this place he strongly opposed the hostility of the Norwegian clergy to the system of public-school education in the United States. Chiefly for the purpose of perfecting himself in the English language, he accepted the chair of Latin and Greek in Urbana University, and while so engaged began his first novel, "Gunnar." Before completing it he spent a year in philological study at Leipzig; in 1874 was appointed Professor of German at Cornell University, where he remained till 1880, when he was called to the chair of Germanic Languages and Literature in Columbia College. He occupied this chair at the time of his sudden death. In view of his eminent services as an educator, the faculty have made his three sons wards of the college. His publications include: "Gunnar" (New York, 1874); "A Norseman's Pilgrimage" (1875); "Tales from Two Hemispheres" (Boston, 1876); "Falconberg" (1878); "Goethe and Schiller" (1878); "Ilka on the Hilltop" (1881); "Queen Titania" (1882); "A Daughter of the Philistines" (Boston, 1883); "The Story of Norway" (1886); "The Modern Vikings" (1888); "The Light of her Countenance" (1889); "Vagabond Tales" (1890); "The Mammon of Unrighteousness" (1891); "Boyhood in Norway" (1892); "A Commentary on the Writings of Henrik Ibsen" (1894); "Literary and Social Silhouettes" (1894); "The Norseland Series" (1894); and "Essays on Scandinavian Literature" (1895).

**Brayman, Mason**, lawyer, born in Buffalo, N. Y., May 23, 1813; died in Kansas City, Mo., Feb. 27, 1895. He was brought up on a farm; was apprenticed to the printing business; became editor of the Buffalo "Bulletin" in 1834; and was admitted to the bar two years afterward. Removing to Monroe, Mich., he served a term there as city attorney. In 1841 he became editor of the Louisville "Advertiser"; in 1842 settled in Springfield, Ill.; and in 1843 was appointed a special commissioner to adjust the Mormon difficulties at Nauvoo. He was the special attorney in charge of the prosecution of offenses arising from the difficulties, and conducted the negotiations that led to the withdrawal of the Mormons from Illinois. During 1844-'45 he was employed in revising the "Statutes" of Illinois by appointment of the Governor and Legislature. From 1851 till 1861 he was interested in railroad construction and management, part of the time as attorney of the Illinois Central Company. In 1861 he entered the national army as major of the 29th Illinois Volunteers, of which he became colonel in the following year. Subsequently he was detailed as chief of staff and assistant adjutant general to Gen. McClelland; took part in the battles of Belmont, Fort Donelson, and Shiloh; and was promoted brigadier general of volunteers for bravery in action, Sept. 24, 1862. He repelled the attack by Gen. Van Dorn on Bolivar, Tenn.; reorganized 60



regiments at Camp Denison, Ohio; was in command at Natchez in 1864-'65; presided over the court of inquiry that investigated the conduct of Gen. Sturgis and over a commission at New Orleans to examine Southern claims; and was brevetted major general of volunteers in 1865. After the war he resumed railroad work, edited the "Illinois State Journal" in 1872-'73, and removed to Wisconsin in the latter year. During 1877-'78 and 1880 he was Governor of Idaho Territory. Since then he had practiced law at Ripon, Wis., till he retired to private life in Kansas City.

**Brigham Lincoln F.**, jurist, born in Cambridgeport, Mass., Oct. 4, 1819; died in Salem, Mass., Feb. 27, 1895. He was graduated at Dartmouth in 1842 and at Harvard Law School in 1844; was admitted to the bar in 1845; and was district attorney for the Southern District of Massachusetts in 1853-'59. On the organization of the Superior Court of Massachusetts, in 1859, he was appointed an associate justice. In 1869 he became Chief Justice, and he held the office till 1891.

**Broadus, John Albert**, theologian, born in Culpeper County, Va., Jan. 24, 1827; died in Louisville, Ky., March 16, 1895. He was graduated at the University of Virginia in 1850; was Assistant Professor of Latin and Greek there in 1851-'53 and chaplain in 1855-'57; and was pastor of the Baptist Church at Charlottesville in 1851-'55 and 1857-'59. In the latter year he became Professor of New Testament Interpretation and Homiletics in the newly organized Southern Baptist Theological Seminary at Greenville, S. C., subsequently removed to Louisville, Ky., and remained with the institution till his death, being its president for several years. He was a frequent contributor to periodicals; was a member of the International Sunday-school-lesson Committee; and published a review of the American Bible Union's revised version of the New Testament (1866-'68); "Preparation and Delivery of Sermons" (Philadelphia, 1870); "Lectures on the History of Preaching" (New York, 1876); "Three Questions as to the Bible" (1884); "Commentary on Matthew" and "Sermons and Addresses" (1886).

**Brooks, Arthur**, clergyman, born in Boston, Mass., in June, 1845; died at sea July 10, 1895. He was one of five sons of William G. Brooks, four of whom became Protestant Episcopal clergymen, and one, Phillips, a bishop. He studied at the Boston Latin School; was graduated at Harvard in 1867; studied theology at Andover and Philadelphia; and was ordained in 1870. In 1870-'72 he held a charge in Williamsport, Pa.; in 1872-'75 was rector of St. James's Church, Chicago; and since 1875 had been rector of the Church of the Incarnation, New York city. Dr. Brooks had traveled extensively, published a volume of sermons entitled "The Life of Christ in the World," and was the author of the article on Phillips Brooks in the "Annual Cyclopaedia" for 1893. He was active in many charitable movements, and was a trustee of Columbia and Barnard Colleges.

**Brown, Charlotte Emerson**, educator, born in Andover, Mass., in April, 1838; died in East Orange, N. J., Feb. 5, 1895. She was a daughter of Prof. Ralph Emerson, of Andover Theological Seminary, and wife of the Rev. William B. Brown, D. D., a Congregational minister. She was graduated at Abbott Female Seminary, Andover; studied modern languages and music in Europe; and on returning settled in Rockford, Ill., where she taught languages in the seminary, and organized a conservatory of music and two clubs, one for the study of French, the other for music. In 1880 she married Dr. Brown, and soon afterward she spent with him three years in foreign travel and study. On their return they made their home in East Orange. Mrs. Brown was elected President of the Woman's Club of Orange, in 1888, and on the organization of the General Federation of Woman's Clubs in 1890, became president of that body. After several re-elections she declined another, and was appointed chairman of the Committee on Foreign Correspondence. She also organized the Fortnightly Club of East

Orange, and was active in the work of the Women's Missionary Society of the Congregational Church.

**Bryon, James M.**, bacteriologist, born in Lima, Peru, July 24, 1861; died in New York city, May 8, 1895. He received a collegiate education in his native city; was graduated in medicine in Naples, Italy, in 1887; spent three years in studying bacteriology in Paris; and, removing to New York city, became an assistant in the Loomis Laboratory. During the cholera excitement of 1891-'92, he was physician and bacteriologist on Swinburne Island, New York Bay, and an assistant to Dr. Jenkins, the health officer of the port. He continued to hold his office at the quarantine station after all danger of the spread of cholera had passed, and spent much of his time in laboratory work. He was an accomplished microscopist, and was employed by many physicians to make examinations for them. While examining the sputum of a person believed to have incipient consumption, he inhaled some bacteria of tuberculosis without being aware of the fact at the time. Hasty tubercular consumption speedily developed, and he died after several severe hæmorrhages.

**Bull, Ephraim, W.**, viticulturist, born in Boston, Mass., March 4, 1806; died in Concord, Mass., Sept. 26, 1895. He learned the goldbeater's trade, and carried it on successfully till 1837; and then, because of failing health, removed to Concord and engaged in the cultivation of the grape. At that time the Isabella and Catawba grapes were well established and popular, but they were not sufficiently hardy for the climate of New England; hence Mr. Bull attempted to produce a grape equal to them in flavor and harder. He began by sowing the seeds of a wild grape (*V. labrusca*), from which he raised seedlings. He then sowed the seeds from these, and obtained others, among them the famous Concord. About 2,000 seedlings were raised before he obtained a grape that surpassed the Concord. In the fourth generation he secured seedlings believed to be superior to the Concord, and nearly equal to the European grape (*V. vinifera*). The wild parent of the Concord was accidentally discovered by him growing along a hedge-row, and he transferred it to his vineyard, where it is still thrifty. The Concord grape was first exhibited by the Massachusetts Horticultural Society in 1853, and professional grape growers made all the money out of the discovery. Mr. Bull was elected by the American party to the State House of Representatives in 1855, and to the State Senate in 1856, and served on the State Board of Agriculture for twelve years. He lived alone on his vineyard till 1894.

**Burnett, Peter Hardeman**, jurist, born in Nashville, Tenn., Nov. 15, 1807; died in San Francisco, Cal., May 16, 1895. For some years, prior to 1843 he was engaged in trading and the practice of law in Tennessee and Missouri. In that year he made the overland journey to the Oregon Territory, meeting Lieut. John C. Frémont, then on an exploring expedition, at Fort Vancouver. He took an active part in the organization of the Territorial Government; was a member of the Legislature in 1844 and 1848, and for a short time was a judge of the Supreme Court, resigning to go to California at the outbreak of the gold excitement. For a while he engaged in mining; then became agent for the Sutter family and estate at New Helvetia. In 1849 he became conspicuous by his advocacy of a State government, urging such an organization without awaiting congressional authority, and opposing the United States military government of the Territory. Under the new Constitution he was elected Governor, but in the year following the admission he resigned, and engaged in law practice. In 1857-'58 he was a judge of the Supreme Court, and in 1863-'80 was President of the Pacific Bank of San Francisco. He published "The Path which led a Protestant Lawyer to the Catholic Church" (New York, 1860); "The American Theory of Government, considered with Reference to the Present Crisis" (1861); "Recollections of an Old Pioneer" (1878); and "Reasons why we should believe in God, love God, and Obey God" (1884).



**Calkins, Norman A.**, educator, born in Gainesville, N. Y., Sept. 9, 1822; died in New York city, Dec. 22, 1895. He began teaching when eighteen years old, and became principal of the central school in his native town. In 1845 and 1846 he was elected Superintendent of the Gainesville Public Schools, and in the last year removed to New York city and became editor of "The Student and Schoolmate" and engaged in conducting teachers' institutes. He was elected Assistant Superintendent of the Public Schools of New York city in 1862, and held the office by re-elections till his death. From 1864 till 1871, he was instructor in the methods and principles of education in the Saturday Normal School, and from 1871 till 1883 was Professor of the Method and Principles of Teaching in the Normal School of the City of New York. His numerous publications include "Primary Object Lessons" (New York, 1861); "Phonic Charts" (1869); "How to Teach," in conjunction with Henry Kiddle and Thomas F. Harrison (Cincinnati, 1873); "Manual of Object Teaching" (New York, 1881); and "From Blackboard to Books" (1883).

**Campbell, James H.**, lawyer, born in Williamsport, Pa., Feb. 8, 1820; died in Wayne, Pa., April 12, 1895. He was graduated at the Carlisle Law School and admitted to the bar in 1841; was a delegate to the Whig convention in Baltimore in 1844; and was a Republican Representative in Congress in 1855-'57, 1859-'63, serving on the Committees on Elections and on the Pacific Railroad, being chairman of the last. In May, 1864, President Lincoln appointed him United States minister resident to Sweden, where he served till November, 1866.

**Cantor, Rachel**, actress, born in England, Sept. 10, 1810; died in Philadelphia, Pa., Nov. 4, 1895. She came to the United States in 1838, and made her first appearance here the same year at the Chatham Street Theater, New York, in support of the elder Wallack. Subsequently, she played for many years in support of Edwin Forrest, Edwin Booth, and other actors of distinction, and made her last appearance at the Howard Athenæum, Boston, in June, 1882.

**Carr, Joseph Bradford**, military officer, born in Albany, N. Y., Aug. 16, 1828; died in Troy, N. Y., Feb. 24, 1895. He received a common-school education, became a cigar manufacturer, entered the militia as a private in 1849, and was commissioned colonel of the 24th Regiment, July 10, 1859. At the beginning of the civil war he volunteered, and on May 10, 1861, he was commissioned colonel of the 2d New York Infantry; eight days afterward he left for the front; and on the 24th he established camp at Fort Monroe, his regiment being the first to encamp on Virginia soil. He took part in the battle of Big Bethel; was assigned to duty under Gen. Hooker in Gen. McClellan's peninsula campaign; commanded the Jersey brigade in the engagements at the Orchards, Glendale, and Malvern Hill; and was promoted brigadier general of volunteers, Sept. 7, 1862, for gallantry at Malvern Hill. At Bristow Station, Manassas, Chantilly, Fredricksburg, and Chancellorsville he rendered services that elicited high commendation in official reports, and at Gettysburg a horse was killed under him, and he was injured by its fall, but refused to leave the field. In May, 1863, he acted as a division commander, and in October was given command of the 3d division of the 4th Corps, at the head of which he fought at Brandy Station, Locust Grove, and Mine Run. After the latter action he was transferred to the command of the 4th division of Hancock's (2d) Corps. Subsequently he served under Gen. Butler on the outer line of defense of the peninsula, as division commander in the 1st Corps, and as commander of the defenses of James river. He was brevetted major general of volunteers, June 1, 1865, for meritorious services during the war. After the war he engaged in manufacturing in Troy, N. Y. He was appointed major general of the 3d Division, National Guards State of New York, in January, 1867, and rendered efficient aid to the State during the railroad riots of 1877. He was elected Secretary of State of New

York in 1879, 1881, and 1883, in the latter year being the only Republican on the State ticket who was elected. His last appearance in politics was in 1885, when he was defeated for Lieutenant Governor, with the rest of the Republican ticket.

**Cheney, Benjamin Pierce**, expressman, born in Hillsboro, N. H., Aug. 12, 1815; died in Wellesley, Mass., June 23, 1895. He received a common-school education; worked for some time in his father's blacksmith shop; became a stage driver on the route between Keene and Nashua; and subsequently was made Boston agent of the stage company. In 1842, in connection with Nathaniel White and William Walker, he established the Cheney & Co. express, to operate between Boston and Montreal. This was about contemporary with Harnden's and Adams's beginnings in the same line. The original Cheney express ran over the Boston and Lowell Railroad as far as it was then built (Concord, N. H.), thence by four-horse team to Montpelier, Vt., then by stage to Burlington, and finally by boat to Montreal. The immediate success of this line soon led to the establishment of a competing one, which ran over the Fitchburg Railroad to Burlington. In 1852 Mr. Cheney bought out his competitor, and afterward, by securing control of other lines, he formed the United States and Canada Express Company, which covered the northern New England States with many branches. Of this consolidated corporation, he was proprietor and president till 1881, when it became a part of the Adams Express Company, of which Mr. Cheney was treasurer and the largest stockholder. He invested much of the fortune made in the express business in railroad enterprises, and left an estate estimated at \$9,000,000. He bequeathed \$10,000 each to the Massachusetts General Hospital and the Massachusetts Institute of Technology; \$5,000 each to the Boston Museum of Fine Arts, the Kindergarten for the Blind, and the Bunker Hill Monument Association; \$2,500 to the Children's Hospital, Boston; \$1,000 to the Society for the Relief of Destitute Clergymen; and \$2,000 each to 18 Boston local charities—in all, \$74,500. In life he had presented the State with the bronze statue of Daniel Webster, at Concord, N. H.

**Chittenden, Henry Abel**, merchant, born in Guilford, Conn., April 29, 1816; died in Montclair, N. J., May 23, 1895. He began his business career in New Haven, subsequently removed to Hartford, and afterward became associated with his brother, the late Simeon B. Chittenden, in the wholesale dry-goods business in New York city. In early life he adopted the religious views of William Miller, and was an active apostle of the second advent. He was expelled from Dr. Bushnell's Congregational church in Hartford in 1845 because of his religious expressions, on which he published "A Reply to the Charge of Heresy." The anti-slavery movement enlisted his hearty co-operation, and he was conspicuous among its leaders. One of his acts in the cause was the individual maintenance in Washington, D. C., for six years of a Congregational church dedicated to the "cause of free speech on the slavery question."

**Clendenin, David Ramsey**, military officer, born in Lancaster County, Pa., June 24, 1830; died in Oneida, Ill., March 5, 1895. He was graduated at Knox College; was commissioned major of the 8th Illinois Cavalry; served through the civil war with this regiment, most of the time as lieutenant colonel commanding; was commissioned major, 8th United States Cavalry, in January, 1867; lieutenant colonel, 3d Cavalry, in November, 1882; and colonel, 2d Cavalry, Oct. 29, 1888; and was retired on account of disabilities April 20, 1891. Col. Clendenin took part in the principal engagements of the Army of the Potomac, and was brevetted brigadier general.

**Cogswell, Parsons Brainard**, journalist, born in Heniker, N. H., Jan. 22, 1828; died in Concord, N. H., Oct. 28, 1895. He became a resident of Concord in 1847, and learned the printing business in the offices of "The Independent Democrat" and "The New Hampshire Patriot" (1847-'52). On May 23, 1864, in



company with an associate, he established the "Daily Monitor," the first permanent daily paper published in Concord, with which he was connected as editor or proprietor until his death. He became a member of the Board of Education in 1859, and continued on the board for thirty-six unbroken years, serving as its president several years and for eighteen years as its financial agent. He was a member of the State Legislature in 1872 and 1873, public printer from 1881 to 1885, and several years auditor of public printer's accounts. He was a member of the Board of Trustees of the State Library, and was Mayor of Concord two years. He was a member of the New Hampshire Historical Society, and four years its president; also a member and officer of the New Hampshire Press Association, a member of the Appalachian Club, and four years President of the Concord Commercial Club. He was United States Immigrant Inspector under President Harrison's administration. Mr. Cogswell spent a year in Europe (1878-'79), and wrote for the "Monitor" a series of letters, which were subsequently published in book form under the title of "Glints from over the Water." He received the degree of M. A. from Dartmouth College in 1885.

**Cogswell, William**, lawyer, born in Bradford, Mass., Aug. 23, 1838; died in Washington, D. C., May 22, 1895. He took a partial course at Dartmouth College, made a voyage around the world as a sailor, and was graduated at the Harvard Law School in 1860. In 1861 he raised one of the first companies of volunteers that went to the front from Massachusetts, was appointed its captain, subsequently was commissioned colonel of the 2d Massachusetts Infantry, and in 1864 was brevetted brigadier general and assigned to the command of the 3d brigade, 3d division, 20th Corps, with which he accompanied Gen. Sherman on his march to the sea. After the war he resumed law practice in Salem, where he was elected mayor five times, a member of the State House of Representatives five times, and a State Senator twice. From 1887 to 1895 he was Republican Congressman from the 6th Massachusetts District.

**Coit, Henry Augustus**, educator, born in Wilmington, Del., Jan. 20, 1830; died in Concord, N. H., Feb. 5, 1895. He was educated at St. Paul's School, College Point, Long Island; took a partial course at the University of Pennsylvania; entered the ministry of the Protestant Episcopal Church, and engaged in missionary work in Clinton County, New York. On the establishment of Saint Paul's School in Concord, N. H., he was chosen its rector, assuming charge in April, 1856, with a class of half a dozen boys. Despite tempting offers of service elsewhere, he remained at this school till his death, making it one of the noted



institutions of the country and bringing its student membership up to 300. In 1867 he was elected President of Trinity College, Hartford, and in 1871 President of Hobart College, Geneva, but he declined both places. He visited England in 1868, and made a study of its public-school system. Dr. Coit received the degree of D. D. from Trinity College in 1863 and that of LL. D. from Yale College.

**Conroy, John Joseph**, clergyman, born in Cloneslee, County Queens, Ireland, in 1819; died in New York

city, Nov. 20, 1895. He came to the United States when twelve years old; received his early education in New York city; studied the classics under the Sulpicians in Montreal; took the higher and the theological courses at Emmetsburg, Md., and Fordham, N. Y.; and was ordained a priest June 4, 1842. In 1843 he was made vice-president of St. John's College, Fordham, and soon afterward president; and from 1844 till 1865 he was pastor of St. Joseph's Church, Albany, N. Y., during a part of which period he was vicar-general and administrator of the diocese. On the elevation of Dr. McCloskey to the see of New York, Dr. Conroy was appointed Bishop of Albany, and was consecrated Oct. 15, 1865. While rector of St. Joseph's Church he rebuilt the edifice, founded St. Vincent's Orphan Asylum, and introduced the Sisters of Charity; and during his administration of the diocese he established St. Peter's Hospital, St. Agnes's Rural Cemetery, and an industrial school, and introduced the Little Sisters of the Poor. He attended the first two Plenary Councils of Baltimore—the first as theologian and the second as bishop; visited Rome at the centenary of St. Peter; took part in the sessions of the Council of the Vatican; and in August, 1869, presided over a diocesan synod. In 1872 he was given a coadjutor; in January, 1874, he was compelled by infirmities to relinquish the administration of his office; and on Oct. 16, 1877, he resigned the see and removed to New York city. After his retirement the Pope appointed him Bishop of Curium, *in partibus*, and he was able to attend the Plenary Council of Baltimore in 1884.

**Cooke, Philip St. George**, military officer, born near Leesburg, Va., June 13, 1809; died in Detroit, Mich., March 20, 1895. He was a brother of John Rogers Cooke, and father of the late Gen. John R. Cooke (see obituary in "Annual Cyclopædia" for 1891) and of Mrs. J. E. B. Stuart. He was graduated at West Point and commissioned a brevet 2d lieutenant of infantry, in 1827; was promoted 2d lieutenant, 6th Infantry, the same day; 1st lieutenant, 1st Dragoons, March 4, 1833; captain, May 31, 1835; major, 2d Dragoons, Feb. 16, 1847; lieutenant colonel, July 15, 1853; colonel, June 14, 1858; and brigadier general, Nov. 12, 1861; and was retired with the rank of brevet major general Oct. 19, 1873. His early military service was on frontier duty and in the Black Hawk War. In 1843 he commanded the escort of a party of Santa Fé traders to Arkansas river and captured a Texan military expedition. During the Mexican War he commanded a battalion in California in 1846-'47, and a regiment in Mexico city in 1848. Subsequently he served on several Indian expeditions, and in the action at Blue Water, Sept. 3, 1855, he commanded the cavalry. He was at the head of military affairs in Kansas during the troubles of 1856-'57, and of the cavalry in the Utah expedition of 1857-'58. At the beginning of the civil war he made a public declaration of allegiance to the Union, deeming it his duty to support the Federal Government in preference to that of his native State. This act caused an estrangement between him and his son and daughter, which lasted till within a short time of the son's death. During the peninsula campaign he commanded all the regular cavalry in the Army of the Potomac, and distinguished himself at the siege of Yorktown and the battles of Williamsburg, Gaines's Mills, and Glendale. He was on court-martial duty in 1862-'63; was commandant of the Baton Rouge district in 1863-'64; general superintendent of the recruiting service in 1864-'66; and commandant of the Department of the Platte in 1866-'67, of the Cumberland in 1869-'70, and of the Lakes in 1870-'73. He was author of a system of cavalry tactics (1861; revised edition, 1883); "Scenes and Adventures in the Army" (Philadelphia, 1856); and "The Conquest of New Mexico and California" (1878).

**Copeland, Charles W.**, engineer, born in Coventry, Conn., in 1815; died in Brooklyn, N. Y., Feb. 5, 1895. He was a son of Daniel Copeland, a noted builder of steam engines and boilers, under whose direction Charles was given a thorough training in the profes-



sion of designing and draughting of steam vessels and machinery, as well as in all the manufacturing branches of the business as then known. After this training and a course of study in the higher mathematics he became superintendent of his father's establishment in Hartford, and designed and built river steamers. In 1838 he was appointed designing and constructing engineer of the West Point, N. Y., foundry, then the foremost plant of its kind in the country, where he built many marine engines and the first iron hull put together in the United States. Three years afterward he became constructing engineer to the United States navy. During the Mexican War he fitted out for the Government the steamers comprising what was known as the "mosquito fleet." He designed the engines and boilers of the "Missouri," the "Mississippi," and the "Michigan" for Lake Erie, the latter being the first iron steamer ever used for naval service; and also the machinery for the "Saranac" and "Susquehanna," in which he introduced many novel features. He resigned this office and accepted that of superintending engineer of the Allaire Works in New York city, where he designed and built the steamers "Pacific," "Baltic," and "Panama" for the Pacific lines, the "Bay State," "Empire State," and "Traveler" for Long Island Sound, and the famous "Harriet Lane" for the United States Revenue Service. In 1852 he was an expert before the congressional committee having in charge the United States Steamboat bill, and after the passage of the bill he was for nine years the first supervising inspector for the New York district. During the civil war he altered and fitted steamers for service on the shallow waters of the South. After the war he was consulting and superintending engineer to the United States Lighthouse Board and to the Norwich and New York Transportation Company, for which he designed the steamers "City of New York," "City of Boston," and "City of Worcester."

**Coppée, Henry**, educator, born in Savannah, Ga., Oct. 13, 1821; died in Bethlehem, Pa., March 22, 1895. He was of French West Indian parentage; was a student for one year at Yale College; studied engineering, and was employed on the construction of the Georgia Central Railroad from Savannah to Macon. In 1845 he was graduated at West Point and assigned to the artillery. He served through the Mexican War, receiving the brevet of captain for gallantry at Contreras and Churubuseo and a vote of thanks from the Legislature of Georgia. From the close of the war till 1855 he was Assistant Professor of Geography, History, and Ethics at West Point; from 1855 till 1866 was Professor of English Literature and History at the University of Pennsylvania; from 1866 till 1874 was President of Lehigh University, which he had organized; and from 1874 till his death was Professor of English Literature and History and of International and Constitutional Law in that institution. Since the death of Dr. Lamberton he had also been acting president of the university. Dr. Coppée was appointed a regent of the Smithsonian Institution in 1874; was elected by Congress in 1880 and 1886; and was United States Commissioner on Government Assay of Coin in 1874 and 1877. He was editor of the "United States Service Magazine" (1864-'66), of a translation of Marmot's "Spirit of Military Institutions" (1862), and of one of Comte de Paris's "Civil War" (1877); and published "Elements of Logic" (Philadelphia, 1857); "Gallery of Famous Poets" (1858); "Elements of Rhetoric" (1859); "Gallery of Distinguished Poetesses" (1860); "Select Academy Speaker" (1861); "Manual of Battalion Drill" and "Evolution of the Line" (1862); "Manual of Court-martial" (1863); "Songs of Praise in Christian Centuries" (1864); "Life and Services of Gen. Grant" (1866); "Manual of English Literature" (1872); "Conquest of Spain by the Arab Moors" (1881); and a life of Gen. Thomas (1893).

**Corse, Montgomery Dent**, military officer, born in Alexandria, Va., March 14, 1816; died there Feb. 11, 1895. He served through the Mexican War as captain

of a company enlisted in Alexandria; lived in California in 1849-'57; and was engaged in banking in Alexandria till the beginning of the civil war. In May, 1861, he was commissioned colonel of the 17th Virginia Regiment, with which he entered the Confederate service. He was engaged in the actions at Bull Run, where he was wounded, Boonesboro, and Antietam; was promoted brigadier general in November, 1862; commanded a brigade in Gen. Pickett's division in the expedition against Knoxville; and was taken prisoner at Sailor's Creek, Va., April 6, 1865. After the war he resumed banking in Alexandria.

**Coxe, Samuel Hanson**, clergyman, born in Mendham, N. J., Nov. 15, 1819; died in Utica, N. Y., Jan. 16, 1895. He was the second son of the Rev. Samuel Hanson Cox, D. D., the noted Presbyterian clergyman, and a brother of Bishop Arthur Cleveland Coxe (the brothers adopted an older spelling of the name), was brought up in New York city, and entered the ministry of the Protestant Episcopal Church in 1844. After being rector of St. Peter's Church, Auburn, N. Y., for two years, he held various charges till 1857, when he became rector of Trinity Church, Utica, N. Y., where he remained for more than twenty years. He married a sister of Rosecoe Conkling.

**Crozier, Robert**, jurist, born in Ohio in 1827; died in Leavenworth, Kan., Oct. 2, 1895. He went to Kansas to practice law early in life; was a member of the Territorial Council in 1857-'58; served several years as United States Attorney for the District of Kansas; was elected Chief Justice of the Supreme Court of the State in 1864; and in 1873 served part of a term in the United States Senate.

**Cullman, John Gottfried**, benefactor, born in Bavaria, Germany, in 1825; died in Cullman, Ala., Dec. 3, 1895. He came to the United States in 1865, lived in Cincinnati four years, and then began colonizing German immigrants, settling over 10,000 families in Alabama alone, and making the place of settlement one of the garden spots of the State. A county was created and named after him, and in 1875 the town of Cullman was founded and made the county seat. The colonists are engaged in fruit culture, general agriculture, and manufacturing, and support two weekly newspapers. Mr. Cullman had recently organized the German Immigration Society of Alabama, and had completed arrangements for settling another large body of his countrymen in that State.

**Daboll, David Austin**, publisher, born in Groton, Conn., in 1813; died there July 8, 1895. He was a grandson of Nathan Daboll, who conceived the idea and published the first number of the "New England Almanac" in 1772, and a son of Nathan Daboll, Jr., who was joint author with his father of "Daboll's Arithmetic" and his successor as publisher of the almanac. The first number of the almanac was prepared under the old oaken roof of the Daboll house, and each succeeding number has been prepared there since. David took up the work on his father's death, and in late years was assisted by his son, David Austin Daboll, Jr. David, Sr., was a member of the Connecticut House of Representatives from 1846 till 1871, and then served a term in the State Senate.

**Darr, Francis**, military officer, born in Cincinnati, Ohio, in 1833; died in Wayne, Pa., Jan. 26, 1895. He made the overland trip to California when seventeen years old, and spent several years on the Pacific slope. At the beginning of the civil war he was commissioned 1st lieutenant and quartermaster in the 10th Ohio Volunteers; on Aug. 3, 1861, was appointed captain and commissary of subsistence; and Jan. 1, 1863, was promoted lieutenant colonel. During the war he served on the staffs of Gens. Rosecrans, Buell, and Foster; took part in all the battles of the West Virginia campaign, Shiloh, Murfreesboro, and the occupation of North Carolina, and reached the rank of brigadier general of volunteers. After the war he was a commission merchant in New York city till within three years of his death.

**Davis, Edward F. C.**, engineer, born in Richmond, Va., in 1847; died in New York city, Aug. 6, 1895.



He was graduated at Washington College in 1867, and immediately entered the New Castle (Del.) Iron Works, subsequently going to the Atlantic Dock Works, in Brooklyn, N. Y. In 1878 he was appointed one of the mechanical engineers at the works of the Philadelphia and Reading Iron Company, at Pottsville, Pa., and he had charge of all the collieries operated by the company, and for four years was an engineer in charge of the locomotive works at Richmond, Va. He became a member of the American Society of Mechanical Engineers in 1881, and was elected its president in November, 1894. At the time of his death (which was occasioned by his being thrown from his horse in Central Park) he was manager of an elevator and machinery plant in New York city.

**Dawson, Nathaniel Henry Rhodes**, lawyer, born in Charleston, S. C., Feb. 14, 1829; died in Selma, Ala., Feb. 1, 1895. He was graduated at St. Joseph's College, Mobile, Ala., was admitted to the bar in 1850, and began practice at Cahawba, Ala. In 1860 he was a delegate to the Charleston and Baltimore conventions, withdrawing from the former under instructions from his State convention. On the outbreak of the civil war he became a captain in the 4th Alabama Volunteers, and during the last two years of the war he was in command of a battalion of cavalry. While in the army he was elected to the Legislature in 1863 and 1864, and in each case left his command long enough to attend the session; after the war he resumed practice in Selma. In 1876 he was appointed a trustee of the State University, an office he retained till his death; in 1876-'86 was a member of the State Executive Committee, and its chairman in the two last years; in 1880-'81 was Speaker of the Alabama House of Representatives, and from Aug. 6, 1886, till Sept. 3, 1889, was United States Commissioner of Education.

**Day, Edward Hartsinck**, educator, born in Bath, England, in 1833; died in Algiers, Jan. 4, 1895. He was a younger brother of Justice Sir John Day, of England, and was educated in the Roman Catholic College of Downside and the London School of Mines. For several years he was engaged in geological work in association with Profs. Huxley, Owens, Hawkins, and Ethridge, and he made the first geological survey for the proposed tunnel under the English Channel under the direction of Sir John Hawkshaw. In 1866 he came to the United States as assayer for a mining company in Montana, and on the failure of that enterprise he became master assayer in the School of Mines of Columbia College. In 1872 he became Professor of Natural Sciences in the New York Normal College, and he held the place till his death.

**Demorest, William Jennings**, publisher, born in New York city, June 10, 1822; died there April 9, 1895. He received a common-school education, and was successively engaged in mechanical pursuits and the publishing business. In 1860 he became editor and publisher of an illustrated periodical subsequently known as "Demorest's Illustrated News," and during the civil war he published "The Phunniest of Phun," a humorous antislavery periodical. He also was the founder and publisher of "Demorest's Family Magazine." In early life he was actively identified with the abolition movement. In later years he was probably best known through his connection with the Prohibition party. In 1885 he organized the National Prohibition Bureau, and subsequently the Constitutional League; and in 1886 he instituted contests for the recitation of prohibition selections, rewarding the successful contestants with gold, silver, and diamond-mounted medals, of which he had bestowed upward of 40,000. By other means he actively promoted the prohibition cause in all parts of the world. He was frequently a candidate for public office, and in 1885, when candidate for Lieutenant Governor of New York, he polled more votes than the rest of the ticket.

**Dennison, Aaron L.**, manufacturer, born in Freeport, Me., March 12, 1812; died in Birmingham, England, Jan. 9, 1895. When ten years old he began working

as a mason's helper, also assisting his father in odd hours at shoemaking. In 1830 he was apprenticed to a watchmaker in Brunswick, and in 1833 went to Boston to perfect himself in the trade under the direction of Tubal Hone, then considered one of the best watchmakers in the United States. While there, in 1835, he discovered the inaccuracies and defects existing in even the finest handmade watches, and conceived the idea of constructing all parts mechanically so as to produce a more accurate and a cheaper timepiece. In 1839 he began business on his own account. His first invention was the standard gauge bearing his name and still in use. In 1846 his experimenting led him to predict that within twenty years the manufacture of watches would be reduced to system and perfection, and three years afterward he began making machinery from original plans for manufacturing the parts of watches. In 1850, with 3 partners, he erected a small factory in Roxbury, set some Swiss and English watchmakers at work, and completed the model of his first watch, which was made to run for eight days. His first firm was named the American Horological Company, but soon afterward the name was changed to the Warren Manufacturing Company, by whom the first machine-made watch was placed on the market in 1853. In the following year the factory was removed to Waltham, and with 90 workmen it was able to produce 5 watches a day. This was the first watch factory in the world that turned out under one roof a complete watch ready for use, making every part. This plant was bought out by Royal E. Robbins, the present treasurer of the American Waltham Watch Company, and Mr. Dennison remained with it as superintendent till 1861, when he organized the Tremont Watch Company. In 1850 no watches were manufactured in the United States; in 1894, through the genius of Mr. Dennison, the output was 6,500 movements a day.

**Dillingham, George Wellington**, publisher, born in Bangor, Me., in 1841; died in Summit, N. J., Dec. 27, 1895. After being employed as a clerk in the house of Crosby, Nichols & Co., in Boston, he removed to New York in 1863 and entered the publishing house of George W. Carleton. Eight years afterward he was taken into partnership. In 1886 Mr. Carleton sold his interest in the business to Mr. Dillingham, and the latter conducted it alone till his death.

**Dodge, Richard Irving**, military officer, born in Huntsville, N. C., May 19, 1827; died in Sackett's Harbor, N. Y., June 16, 1895. He was graduated at West Point and commissioned a 2d lieutenant, 8th Infantry, in 1848; 1st lieutenant, March 3, 1855; captain, May 3, 1861; major, 12th Infantry, June 21, 1864; lieutenant colonel, 23d Infantry, Oct. 29, 1873; and colonel, 11th Infantry, June 26, 1882; and was retired May 19, 1891. During the civil war he commanded the camp of instruction at Elmira, N. Y., was mustering and disbursing officer at several posts, and was assistant inspector general of the 4th Army Corps. After the war he served on a board to perfect a system of regulations for the army, and was in several campaigns against Indians. For his services in recruiting troops during the war he was brevetted lieutenant colonel, and for organizing troops colonel. He published "The Black Hills" (New York, 1876); "The Plains of the Great West" (1877); and "Our Wild Indians" (1881).

**Donohoe, Michael T.**, military officer, born in Lowell, Mass., Nov. 22, 1838; died on Rainford Island, Boston, Mass., May 26, 1895. He was educated in the public schools of Lowell and at the College of the Holy Cross, Worcester, and settled in Manchester, N. H. At the beginning of the civil war he was commissioned a captain in the 3d New Hampshire Infantry, with which he took part in the expedition to South Carolina, and received honorable mention in general orders for his gallantry. In June, 1862, he assisted in recruiting the 10th New Hampshire Infantry, of which he was commissioned colonel. The regiment joined the 9th Corps in September following, and served with it in the battle of Fredericksburg. Sub-



sequently it was attached to the 18th Corps. In the action of Fort Harrison, Sept. 29, 1864, Col. Donohoe received a severe wound in his hip. For bravery in this action he was again mentioned in general orders. In the last year of the war he served in Gen. Devens's division of the 24th Corps, and was brevetted brigadier general for distinguished services on the field. After the war he was a post-office inspector, clerk of the commissioners of public institutions of Boston, and, at the time of his death, superintendent of the Boston Reformatory.

**Dorsey, James Owen**, ethnologist, born in Baltimore, Md., Oct. 31, 1848; died in Washington, D. C., Feb. 4, 1895. He took the classical course in what is now the City College of Baltimore in 1862-'63; spent two years in a countingroom, and a year in teaching, studied at the Theological Seminary of Virginia in 1867-'71, and was ordained a deacon in the Protestant Episcopal Church and began missionary work among the Pouka Indians in Dakota in the last year. Just as he became able to converse with the Indians without the aid of an interpreter, ill health compelled him to relinquish work in that field, and he engaged in parish work in Maryland from 1873 till 1878. He was then appointed ethnologist to the United States Geological and Geographical Survey of the Rocky Mountain region under Major J. W. Powell, and went to the Omaha Indian reservation in Nebraska. On the organization of the United States Bureau of Ethnology, in 1879, he was transferred thereto, and was employed in linguistic and sociologic work till his death. Prior to 1884 he confined his investigations to the tribes of the Siouan family. In that year he visited the Siletz reservation, in Oregon, where he obtained vocabularies and grammatical notes of Athabascan, Kusan, Takilman, and Yakonan languages. The results of much of his field and office work were published in the annual reports of the Bureau of Ethnology. Among his most notable works are: "Pouka A B C Wa-bá-ru," a Pouka primer (1873); "On the Comparative Phonology of Four Siouan Languages" (1883); "Omaha Sociology" (1884); "Osage War Customs" (1884); "Siouan Folklore and Mythologic Notes" (1884); "Kansas Mourning and War Customs" (1885); "Siouan Migrations" (1886); "Indian Personal Names" (1886); "The Dhegiha Language, Myth Stories, and Letters"; and "Omaha and Pouka Letters." He had also compiled a "Dhegiha-English and English-Dhegiha Dictionary" of over 20,000 words.

**Douglass, Frederick**, journalist and orator, born in Tuckahoe, near Easton, Talbot County, Md., in February, 1817; died near Washington, D. C., Feb. 20, 1895. The life of Frederick Douglass is one of the



most wonderful stories ever written, and seldom has pen or tongue told the incidents or drawn the lessons of humanity with more pathos, or greater purity of diction and melody of voice than his. Of his birth he says in his autobiography: "My only recollections of my mother are a few hasty visits made in the night on foot. She was tall and finely proportioned, of dark, glossy complexion, with regular features, and among the slaves was remarkably sedate and dignified. Of my father, I know nothing. Slavery had no recognition of fathers, as none of families. By its law a child followed the condition of its mother." For twenty years, with varying fortunes, Douglass lived on plantations or in the city of Baltimore. Knowledge was what he longed for, and what

by one means and another he obtained until he was famed for his superior intelligence. A desire for freedom began with his earliest memory, and when twenty-one years old he escaped from bondage. Arrived in New York city, he was directed by a colored man to David Ruggles, who sent him to New Bedford, Mass. Here he lived with his wife, who was a free woman, and had come from Baltimore to join him; but the servile condition of his race in the South and the disabilities under which people of color labored even in many parts of the North weighed upon him. Through the "Liberator" newspaper he had come in contact with William Lloyd Garrison, and in 1841, at an antislavery convention held in Nantucket, he was first heard in public, and his eloquent simplicity as he rehearsed his wrongs moved every heart. It was soon proposed to him to become an agent of the Massachusetts Antislavery Society, and to lecture for it. With great enthusiasm he set out, the first duty assigned him being to travel in company with George Foster and solicit subscriptions to the "Antislavery Standard" and the "Liberator." The meetings proved wonderfully successful. Douglass told and retold his story, and Foster and Collins made the applications. But soon this method proved not enough for Douglass. He says: "I was reading and thinking. New views were being presented to my mind. It did not satisfy me to narrate my wrongs; I felt like denouncing them. My friends wished to pin me down to simple narrative. 'Better have a little plantation speech.' 'It is not best that you seem too learned.'" The danger feared by them followed Douglass's efforts to yield to his impulse and put the soul and mind that were growing into the finished rhetoric and strong logic that seemed born in him. People began to doubt whether he had ever been a slave, and for answer he wrote his first book. Mr. Garrison and Wendell Phillips had no faith in the power of Massachusetts to protect Douglass, should the exposure result in any attempt at his recapture, and they advised him to throw the manuscript into the fire. This advice was not followed, and the story, told as only he could tell it, made unnumbered friends for the slave throughout the North. It produced also another result. His English admirers, hearing of the danger of recapture, raised and forwarded the sum necessary for his manumission. In 1843 the New England Antislavery Society engaged Mr. Douglass to accompany Messrs. George Bradburn, John A. Collins, James Monroe, William A. White, Charles L. Redmond, and Sydney Howard Gay on a tour of 100 lectures through New Hampshire, Vermont, New York, Ohio, Indiana, and Pennsylvania. With varying fortunes of sympathy and abuse these lectures were conducted, and everywhere Douglass made personal friends. John A. Collins, who was general agent of the society, was a communist, and organized a corps of speakers to present the dogma of abolishing all private ownership of property. He proposed that he with these men should attend the antislavery meetings and make common cause. Douglass was to speak in Syracuse, where a hearing had been obtained for him with great difficulty. While the meeting was in progress Collins came in and proposed that the cause of antislavery be set aside and communism be presented. To this Douglass objected, on the ground that the already unpopular cause could not bear the new burden; and that Mr. Collins, as well as he, was engaged to plead the antislavery cause during these hundred conventions. Douglass wrote to the board of managers about the matter, and received from Mrs. Maria Weston Chapman, an influential member, a sharp reprimand for insubordination to his superiors. In 1845 Mr. Douglass visited England, and made many life-long friends, among whom were John Bright and Richard Cobden. Friends in England proposed a testimonial of some kind, and Douglass suggested that it be in the form of a printing press, and aid in establishing in the United States a newspaper in the interests of his race. He



held that the greatest hindrance to the rapid spread of abolition principles was the low estimate placed upon the negro as a man—the assumption that he was enslaved because he was naturally inferior. If he could prove by a well-conducted paper what a negro's brain and hands could do, he would give an object lesson of immense value. The sum of \$2,500 was raised, and after two years Douglass returned home. To his amazement, his New England anti-slavery friends were opposed to his undertaking such a venture. They said no such paper was needed, and it would interfere with his usefulness as lecturer. The only conviction that this reasoning left upon the mind of Douglass was that New England was not congenial soil for his paper, and he betook himself to the city where his lectures had been best received—Rochester, N. Y. Here, in 1847, he issued the first copy of "The North Star," afterward called "Frederick Douglass's Paper." He says: "I was then a faithful disciple of William Lloyd Garrison; but after a time a careful consideration of the subject convinced me that to seek the dissolution between the Northern and Southern States was no part of my duty as an abolitionist; that to abstain from voting was to refuse to exercise a legitimate and powerful means for abolishing slavery; and that the Constitution was, in its letter and spirit, an antislavery instrument. This radical change in my opinions produced a corresponding change in my actions. The committee of the Western New York Antislavery Society, who had helped me in every way when I was a nonvoting abolitionist, withdrew from me when I became a voting abolitionist." Other friends came to his aid in Rochester; but the principal means of paying off the indebtedness following this desertion, that almost put an end to his paper, came from England. Thus thrown upon himself, Douglass saw his work prosper as he wrote by day and lectured by night. He became an active manager on the "underground railroad," and at times had as many as 11 fugitives under his roof, his English friends again helping with money. At this time Douglass became acquainted with John Brown, after whose capture (in October, 1859) Gov. Wise issued a warrant for the arrest of Douglass, and he was compelled to flee to Canada. The experiences of this time led Douglass to the opinion that slavery could be destroyed only through bloodshed, and his expression of that apprehension still further alienated his old supporters, the nonresistants. In 1848 he went heart and soul into the Free-soil movement, and six years later into the Republican party. He worked hard for the election of Abraham Lincoln. When the war broke out he saw from the first that it was to be the end of slavery, and in this belief he urged the Government to accept of negroes as soldiers. When this was done, in 1863, he sent his 3 sons into the service and worked to raise regiments until he saw that colored soldiers were not treated like white soldiers. He visited the President and Secretary Stanton to plead their cause, and the result of the interview was that he resumed recruiting. When the news of the murder of President Lincoln reached Rochester the people by common consent flocked to the city hall, and Douglass, being called on, made a speech that so overwhelmed the people with its eloquent sorrow that their sympathetic expression hardly allowed him to end it. In 1870 he removed to Washington to edit, with his sons, "The New National Era." In 1871 he was appointed assistant secretary of the commission to Santo Domingo; and on his return President Grant appointed him one of the Territorial Council of the District of Columbia. In 1872 he was a presidential elector at large for the State of New York. In 1876 he was appointed United States marshal for the District of Columbia, which office he filled until 1881, when he became recorder of deeds in the District. From this office he was removed by President Cleveland in 1886. His published books are: "Narrative of my Experiences in Slavery" (Boston, 1844); "My Bondage and my

Freedom" (Rochester, 1855); and "Life and Times of Frederick Douglass" (Hartford, 1881).

**Dubois, Frank L.**, physician, born in 1837; died in Portsmouth, N. H., Feb. 24, 1895. He was appointed an assistant surgeon in the United States navy, from Pennsylvania, May 22, 1862, and was promoted to passed assistant surgeon Oct. 30, 1865; surgeon, Feb. 20, 1870; and medical inspector, Sept. 12, 1888. He was on sea service nineteen years and four months, on shore or other duty ten years and nine months, was unemployed nine years and two months. While at the Washington Navy Yard, under his first assignment, he volunteered for extra duty with the army after the second battle of Bull Run, and narrowly escaped capture at the battle of Chantilly. Subsequently he was attached to the "Tioga," on blockade duty, when the crew contracted yellow fever, from which he nearly died. From his recovery till the close of the war he was attached to the Mississippi squadron. In 1866 he was sent to Panama in charge of medical stores. Two years afterward, while on the storeship "Fredonia," he was one of five persons saved from the wreck of the vessel by an earthquake and tidal wave at Arica.

**Dubuis, Claude Marie**, clergyman, born in France, about 1817; died in Veruaison, Rhône, France, May 21, 1895. He was one of the early Roman Catholic missionaries invited to Texas by Bishop Odin, and in 1847 was stationed at Castroville, where he built a residence and schoolhouse. In 1850 he was transferred to San Antonio, where for many years he was pastor of San Ferdinand's Church, and where he did much for the cause of education and aided the Ursulines in establishing a convent. On the promotion of Bishop Odin to the see of New Orleans, Father Dubuis was chosen his successor, and was consecrated Bishop of Galveston Nov. 23, 1862. The progress of the diocese was retarded greatly by the civil war, but through the bishop's exertions it contained in 1874 55 churches and chapels, 83 priests, and about 100,000 Roman Catholics. In 1881 the bishop returned to France for his health, and there resigned his see.

**Eaton, Daniel Cady**, botanist, born in Fort Gratiot, Mich., Sept. 12, 1834; died in New Haven, Conn., June 29, 1895. He was a son of Brevet-Major-Gen. Amos B. Eaton, U. S. A.; was graduated at Yale College in 1857; studied botany at Harvard in 1860; and was Professor of Botany, a chair created for him, at Yale from 1864 till his death. He made numerous investigating tours in the interest of his department of science; was a member of the Government expedition to the Wahsatch Mountains in Utah; and contributed frequently to publications on botanical subjects. His most permanent works are the parts on ferns in Chapman's "Flora of the Southern States" (1860) and in "Gray's Manual" (5th ed., 1867), and an exhaustive individual treatise on "The Ferns of North America" (Boston, 1879-'80).

**Erskine, John**, jurist, born in Strabane, Ireland, Sept. 13, 1813; died in Atlanta, Ga., Jan. 27, 1895. He came to the United States when eight years old, returned to Ireland to complete his education in 1827, made a tour of the world after leaving college, and settled permanently in the United States in 1838. After teaching for four years in Florida, he was admitted to the bar of that State in 1846, and practiced there till 1855, when he removed to Atlanta. In 1865 he was appointed a judge of the United States courts for the two districts of Georgia, and he presided over the courts in Savannah and Atlanta till 1882, when Congress provided for a judge for each district. Judge Erskine selected the southern one and served it till 1883, when he resigned.

**Fairbanks, Franklin**, manufacturer, born in St. Johnsbury, Vt., June 18, 1828; died there April 24, 1895. He was the youngest of the four sons of Erastus Fairbanks, founder of the widely known scale works; received a common-school education; entered the scale works in 1845; and was admitted to the firm in 1855. In 1888 he became president of the company. He served on the staff of Gov. Hall in 1850, and on that



of his father in 1860, and during the last term Franklin equipped the first 5 regiments sent by Vermont to the national armies. Two terms in the Legislature (one term as Speaker) and a twenty-years' membership of the Republican State Committee comprised his political service. He was active in the work of the Congregational Church, was associated with his brothers in acts of public beneficence, and individually presented to the town of St. Johnsbury the Fairbanks Museum of Natural Sciences, with an adequate endowment.

**Ferry, Elisha Peyre**, lawyer, born in Monroe, Mich., Aug. 9, 1825; died in Seattle, Wash., Oct. 14, 1895. He was educated in his native town; was admitted to the bar in Fort Wayne, Ind., in 1845, and removed to Waukegan, Ill., to practice in the following year. In 1853 he was appointed postmaster of the town; in 1856 was a Fremont presidential elector; in 1859 was elected mayor of the newly chartered city of Waukegan; in 1861 was a member of the State Constitutional Convention; and in 1861-'63 was State Bank Commissioner. During the civil war, as assistant adjutant general on the staff of Gov. Yates, he rendered valuable service in organizing, equipping, and sending Illinois regiments to the front. After the war he was appointed one of the direct-tax commissioners for the State of Tennessee. In 1869 he was appointed Surveyor General of Washington Territory, and in 1872 and 1876 Governor of the Territory. At the expiration of his second term he resumed the practice of law in Seattle. In 1889, on the admission of the Territory into the Union, he was elected Governor of the State.

**Field, Eugene**, journalist, born in St. Louis, Mo., Sept. 2, 1850; died in Chicago, Nov. 4, 1895. His father, Roswell Martin Field, a native of Vermont, was Dred Scott's first counsel, and for many years was judge of the circuit court of Missouri. As his wife died when his sons, Eugene and Roswell Martin, were small, they were placed under the care of Mary French, a relative, at Amherst, Mass. Owing to the early death of his father, Eugene's education was conducted without any fixed plan, for he attended Williams College, Knox College, at Galesburg, Ill., and the University of Missouri. When Eugene reached his majority he spent several months in Europe, buying rare books and ancient relics without stint. On his return to the United States he was on the editorial staff of several newspapers in Kansas City and St. Louis; but it was not until he wrote witty paragraphs for the Denver "Tribune" that attention was attracted to his work. Ultimately he went to Chicago, where his column, entitled "Sharps and Flats," in the Chicago "News" and "Record," soon made him well known. Therein he attacked Western provincialism or described in mock-heroic verse and humorous story the temptations and trials of a bibliomaniac and art collector, as in "Dear Old London" and "Flail, Trask, and Bisland." In that column also appeared his dainty poems for children and his dialect verses caricaturing life in the Western mining towns. The manner in which he mingled the crude and the barbaric with the exact learning of a scholar was very amusing. It is, perhaps, as the child minstrel of the West that he will be longest remembered. "Wynken, Blynken, and Nod," "Little Boy Blue," "Intry-Mintry," "Ganderfeather's Gift," and other poems for children are widely popular. The Sunday before his death he spoke to a friend of the dangerous quality of humor, and further remarked that, while he had ridiculed meanness and cruelty and dishonesty, he had spared those whom he believed to be honest, except in those good-natured prods which amused the victims quite as much as the public. He was also a great traveler, and knew every antiquarian bookstore in Europe and the United States. Eugene Field was tall and slender, had a blond complexion, blue eyes, and an attractively homely face, upon which might be discovered many humorous and sensitive lines. He left a widow and five children. The complete list of his works is as follows: "The Denver Tribune

Primer," "Culture's Garland," "A Little Book of Western Verse," "A Little Book of Profitable Tales," "With Trumpet and Drum," "Love Songs of Childhood," "A Second Book of Verse," "The Holy Cross, and Other Tales," "Echoes from the Sabine Farm" (with Roswell M. Field), and the unfinished work "Love Affairs of a Bibliomaniac."

**Field, Matthew Dickinson**, alienist, born in Nashville, Tenn., July 19, 1853; died in New York city, March 8, 1895. He was graduated at Williams College in 1875, and at the Bellevue Hospital Medical College in 1879; won an appointment on the hospital staff in a competitive examination, and was appointed an examiner in lunacy by the Department of Charities and Corrections in 1882. For over ten years he was surgeon to the Manhattan Elevated Railroad Company, and for several years the city examiner in lunacy to Bellevue Hospital. He was an expert of high repute.

**Forbes, Edwin**, artist, born in New York city in 1839; died in Brooklyn, N. Y., March 6, 1895. He became a pupil of A. F. Tait in 1859, and at the beginning of the civil war was sent by Frank Leslie to the Army of the Potomac as a special field artist. He witnessed many important battles and movements. After the war a large number of his unpublished sketches were etched on copper, and the collection was awarded a medal at the Centennial Exhibition. First proofs of these plates were bought by the Government and are preserved in the War Department. After 1878 he was principally engaged on landscape and animal pictures. His most notable war etchings are: "The Reliable Contraband"; "Coming through the Lines"; the "Sanctuary"; "A Night March"; "Returning from Picket Duty"; "The Reveille"; and "Lull in the Fight"; and his principal later works: "Early Morning in an Orange County Pasture" (1879); "On the Skirmish Line"; "Stormy March"; "Roughing"; "On the Meadows" (1880); and "Evening in the Sheep Pasture" (1881).

**Poster, Charles Hubbs**, playwright, born in Jericho, N. Y., March 3, 1833; died in New York city, Aug. 5, 1895. He removed to New York city in early youth, and made his first appearance on the stage at the Brooklyn Athenæum in 1855. After a season at the Brooklyn Museum he entered the lowest rank of the profession at Burton's Theater, New York city, with Mrs. McMahon as the star and Lawrence Barrett as leading man, in 1857. Subsequently he played at the Old Bowery, Purdy's National Museum, and Barnum's; was stage manager at the Old Bowery for several years; and in the last three years had traveled with road companies. He was the author of more than 75 melodramas. These included: "Actors by Daylight," "Twins of London," "Neck and Neck," "Bertha, the Sewing-machine Girl," "Old Straw Man," "New York Burglars," "The Swamp Angels," "Twenty Years Dead," "The Gunmaker's Bride," "The Chain Gang," "The Turf Digger's Doom," and "Saved at Seven."

**Frothingham, Octavius Brooks**, clergyman, born in Boston, Mass., Nov. 26, 1822; died there Nov. 27, 1895. He was the son of the Rev. Nathaniel Langdon Frothingham, a well-known Unitarian writer, and was graduated at Harvard in 1843, and later at Cambridge Divinity School. He was ordained pastor of the North Unitarian Church in Salem in 1847, and from 1855 to 1859 was in charge of a Unitarian church in Jersey City. Removing to New York city in 1860, he became pastor of the Third Unitarian Church there, at that time the most radical in its belief of any church within the denomination. It was dissolved in 1879, and in 1881 Mr. Frothingham devoted himself wholly to literary pursuits in Boston. At one period he was art critic of the "New York Tribune," and in 1867 he was chosen first president of the Free Religions Association. During his ministerial career he was a leader in rationalistic thought, but in later years, without departing essentially from his former standpoint, he became more conservative in expression and certainly broader in his estimates of the standpoint of others. He was an acute, dis-



cerning eritie, and his literary gifts were of a high order. His published works, exclusive of single sermons, include: "Stories from the Life of the Teacher" (Boston, 1863); "Stories of the Patriarchs" (1864); "Childhood and Manhood of the Spirit in Jesus" (New York, 1865); "A Child's Book of Religion" (1866); "The Religion of Humanity" (1873); "The Safest Creed" (1874); "Life of Theodore Parker" (Boston, 1874); "Beliefs of Unbelievers" (New York, 1876); "Transcendentalism in New England" (1876); "Knowledge and Faith" (1876); "The Cradle of the Christ" (1877); "Creed and Conduct" (1877); "The Spirit of the New Faith" (1877); "Gerrit Smith: A Biography" (1878); "The Rising and the Setting Faith" (1878); "Visions of the Future" (1879); "Life of George Ripley" (Boston, 1882); "Memoir of William Henry Channing" (1886); "Recollections and Impressions 1822-1890" (New York, 1891).

**Fuller, Samuel**, educator, born in Rensselaerville, N. Y., in 1802; died in Middletown, Conn., March 8, 1895. He was graduated at Union College in 1822, and at the General Theological Seminary in 1827; was appointed by Bishop Potter, of Pennsylvania, lecturer on Christian life in Philadelphia in 1853; and was Professor of Latin and Interpretation of the Holy Scriptures at Berkeley Divinity School, Middletown, from 1859 till 1883, where he was retired. In 1831, he became editor of "The Churchman," in 1844 he was acting president of Kenyon College, and in 1849 rector at Andover, Mass.

**Gayarre, Charles, Étienne Arthur**, historian, born in New Orleans, La., Jan. 9, 1805; died there Feb. 11, 1895. He was graduated at the College of New Orleans, and after studying law in Philadelphia was admitted to the bar in 1829. He early entered upon political life, and was successively State Senator and Attorney-General of Louisiana. He was elected to the United States Senate in 1835, but illness kept him from taking his seat then, and after eight years spent in Europe he became Secretary of State for Louisiana, holding that office seven years. During the civil war he was an ardent



advocate of the Confederacy, and urged the arming and freeing of the slaves conditioned upon the recognition of the Confederate States by France and England. His earliest published work was the "Historical Essay on Louisiana," in French (New Orleans, 1830). His subsequent works include: "Histoire de la Louisiane" (New Orleans, 1847); "Romance of the History of Louisiana" (New York, 1848); "Louisiana: Its Colonial History and Romance" (New York, 1851); "Louisiana: Its history as a French Colony" (1851-52); "History of the Spanish Domination in Louisiana, 1769-1803" (1854); "History of Louisiana," completed, revised, and extended to 1861 (1866); "School for Politics: A Dramatic Novel" (1854); "Philip II of Spain" (1866); "Influence of the Mechanic Arts on the Human Race" (1854); "Fernando de Lemas: A Novel" (1872); "Dr. Bluff: A Comedy"; "Louisiana Supreme Court Reports (1873-'76); and "Aubert Dubayet: A Novel" (Boston, 1882).

**Gemünder, August**, violin maker, born in Ingelfingen, Germany, March 22, 1814; died in New York city, Sept. 7, 1895. His father was a noted maker and repairer of violins, who brought up his sons, August and George, in the same trade. In 1839 he removed to Regensburg; in 1844, on an order from a German violinist, he made an instrument on original designs, which differed wholly in tone and other qualities from the Italian violins in use. In 1846 he removed

to Springfield, Mass.; and since 1865 he had lived in New York city. He made a specialty of producing instruments resembling in tone those of the old masters, especially Stradivarius, Guarnerius, and Maggini. He claimed that if old wood was used and the proper construction followed, a violinist might have a better instrument of modern make than he would find in an old one, and he reproduced Sarasate's Amati and Brodsky's Guarnerius so cleverly that both performers pronounced his instruments as good as the originals. Mr. Gemünder contributed a series of articles on violins and violin making to musical trade journals.

**Gilbert, Linda**, philanthropist, born in Rochester, N. Y., May 13, 1847; died in Mount Vernon, N. Y., Oct. 24, 1895. When four years old she accompanied her parents to Chicago, Ill., where she was educated at St. Mary's convent. Her home in that city was near an old prison, which she passed daily on her way to and from school, and when ten years old she began her life work as a prisoner's friend by visiting the inmates and lending them books from her father's library. In 1866 she became engaged to Frank Lanier, city chamberlain of Cincinnati, who died suddenly within a week of the day set for their marriage, leaving her his large fortune, of which she received \$75,000 for immediate use. Thereafter she greatly systematized and extended her work, dividing it into two branches, one providing for the establishment of libraries in penal institutions, the other for the employment of prisoners after their release. She established the first county-jail library in Chicago with 4,000 volumes, and subsequently placed in various prisons libraries of 1,500 to 2,000 volumes each, aggregating over 30,000 volumes. She also secured legislation providing library and reading rooms in many prisons. During the last thirty years of her life she personally assisted over 3,000 ex-convicts, and found homes and employment for about 600 of them. In 1876 she organized a society in New York city, of which she became president, for the improvement of prison discipline, the establishment of libraries in all the prisons and jails in the country, the care of a prisoner's family during the term of imprisonment, and the practical aid of the prisoner after release. She also labored to secure the passage of a law by which, in place of prisons, the State governments would establish farms and factories where convicts could be employed and made self-supporting, and also for the establishment of permanent bureaus of employment for released prisoners.

**Gordon, Adoniram Judson**, clergyman, born in New Hampton, N. H., April 19, 1836; died in Boston, Mass., Feb. 2, 1895. He was graduated at Brown University in 1860, and at Newton Theological Seminary in 1863; was ordained to the ministry of the Baptist Church, June 29, 1863; was pastor at Jamaica Plains, Mass., till 1869; and from that time till his death was pastor of Clarendon Street Church, Boston. In 1889 he founded a missionary training school in connection with his church, for educating home and foreign missionaries and pastors' assistants. He was also instrumental in founding and maintaining the Industrial Home on Davis Street, where men rescued from the liquor habit can be sheltered and enabled to support themselves by their labor. Dr. Gordon published "In Christ, or, The Believer's Union with his Lord" (Boston, 1872); "Congregational Worship" (1872); "Grace and Glory," sermons (1881); "The Ministry of Healing" (1882); "The Twofold Life" (1884); "The Life that now





is, and that to come" (1888). He was one of the compilers of the "Service of Song."

**Gordon, Archibald D.**, playwright, born in Ceylon, India, Oct. 11, 1848; died in Port Richmond, Staten Island, N. Y., Jan. 9, 1895. He was a son of the Rev. Alexander Gordon, an East India missionary; came to New York city and entered a publishing house in 1865; and subsequently was connected with daily newspapers in New York and Chicago, applying himself chiefly to dramatic criticism. He was master of several modern languages. His best plays were: "Trixie," written for Maggie Mitchell; "The Ugly Duckling," produced by Mrs. Leslie Carter; "Is Marriage a Failure?" written for Stuart Robson; and "That Girl from Mexico," produced by Sidney Drew.

**Gowan, John E.**, engineer, born in Lynn, Mass., March 6, 1825; died in Paris, France, May 7, 1895. After the Crimean War he raised the Russian fleet that had been sunk in the harbor of Sebastopol by the Russians. He was an engineer of world-wide fame, and received the order of Commander of St. Stanislaus from the Emperor of Russia, the Star of the Medjedi from the Sultan of Turkey, the decoration of Chevalier of St. Maurice and St. Lazare from the King of Italy, that of Chevalier of the Legion of Honor from the Emperor of the French, and a diamond-studded gold snuffbox from the Queen of England.

**Graves, Samuel**, educator, born in Ackworth, N. H., March 15, 1820; died in Grand Rapids, Mich., Jan. 20, 1895. He was graduated at Madison (now Colgate) University in 1846, taking both the collegiate and theological courses; was pastor in Ann Arbor, Mich., in 1848-'51; Professor of Greek in Kalamazoo College, and of Systematic Theology in the Theological Seminary in 1851-'59; and pastor in Norwich, Conn., in 1859-'70. In the last year he was called to a Baptist church in Grand Rapids, where he remained till 1885, and then became president of the Baptist Seminary in Atlanta, Ga., retiring in 1894. His principal publication was "Outlines of Theology" (1893).

**Gray, Isaac Pusey**, diplomat, born in Downingtown, Chester County, Pa., Oct. 18, 1828; died in Mexico city, Mexico, Feb. 14, 1895. Accompanying his parents to Ohio in childhood, he settled in New Madison in 1836, where he was educated and became proprietor of a dry-goods store. In 1855 he removed to Union City, Ind., where he carried on business for three years, studying law in the meantime, and then engaged in practice. During the civil war he was commissioned captain in the 4th Indiana Cavalry, and colonel of the 147th Indiana Infantry; but failing health prevented field service. In 1866 he was a candidate for Congress, but was defeated by George W. Julian; in 1868 was elected to the State Senate, and became its president. In 1872 he was a delegate to the Liberal Republican Convention. He was elected Lieutenant Governor on the Democratic ticket headed by James D. Williams in 1876; succeeded to the executive chair on the death of Gov. Williams shortly before the end of the term; was defeated for Lieutenant Governor in 1880; and was elected Governor in 1884. As Governor he originated the system of paroling convicts, urged the adoption of election reforms, advocated the increase of the bonds of State and county treasurers as a safeguard against defalcations, and was instrumental in floating bonds of the State at a lower rate of interest than it had ever paid. On March 9, 1893, he was appointed minister to Mexico.

**Green, Robert Stockton**, jurist, born in Princeton, N. J., March 25, 1831; died in Elizabeth, N. J., May 7, 1895. He was a grandson of the Rev. Ashbel Green, President of the College of New Jersey, was graduated there in 1850, and was admitted to the bar in 1853. He removed to Elizabeth in 1856, and was appointed prosecutor of the borough courts in 1857, and elected city attorney in 1858. He was elected surrogate of Union County in 1862, and appointed presiding judge of the Court of Common Pleas in 1868. In 1873 he was appointed one of the commissioners to suggest amendments to the State Constitution, and

in the convention he was chairman of the committees on bill of rights, rights of suffrage, limitation of power of government, and general and special legislation. He was an unsuccessful Democratic candidate for Congress in 1868, and a successful one in 1884; was elected Governor of New Jersey in 1886; and was appointed Vice-Chancellor in 1890.

**Gresham, Walter Quinton**, statesman, born near Lanesville, Harrison County, Ind., March 17, 1832; died in Washington, D. C., May 28, 1895. He received a common-school education, spent a year at the State University, studied law in Corydon, Ind., and was admitted to the bar in 1853. His political career began in the presidential canvass of 1856, when he advocated the election of John C. Frémont. In 1860 he was elected to the Legislature as a Republican, and as chairman of its Committee on Military Affairs he introduced and secured the passage of a militia bill, under which the recruiting of troops for the National armies was greatly facilitated. He declined a re-nomination in 1861, enlisted as a private in the 38th Indiana Volunteers, was elected its lieutenant colonel, and reached the field in time to take part in the battle of Shiloh. In December, 1861, he was commissioned colonel of the 53d Indiana Regiment, and for bravery before Corinth and at Vicksburg he was promoted to brigadier general of volunteers, on the recommendation of Gens. Grant and Sherman, Aug. 11, 1863. While commanding a division in Gen. Sherman's army he was shot in the knee at Leggett's Hill, near Atlanta, and disabled. For his services in the Atlanta campaign he was brevetted major general of volunteers, March 13, 1865. After the war Gen. Gresham resumed the practice of law at New Albany, Ind. In 1866 he was an unsuccessful Republican candidate for Congress in a district heavily Democratic, but so reduced the majority of his opponents that soon afterward two Democratic counties were added to the congressional district. During 1867-'78 he was financial agent of Indiana in New York. In 1869 President Grant offered him the appointment of collector of the port of New Orleans, which he declined; but later in the year he accepted the appointment of United States district judge for Indiana. He held this office till April, 1882, and during this period was an unsuccessful candidate for the United States Senate. In 1882, on the death of Postmaster-General Howe, President Arthur appointed him to fill the vacancy, and in 1884, on the death of Secretary Folger, he was transferred to the Treasury Department, but held the office only a few months, resigning it to accept the appointment of United States judge for the 7th Judicial District. His administration of the Post-Office Department was made memorable by his successful proceedings against the Louisiana lottery corporation; and one of his most important acts as United States judge was during the hearing of the celebrated Wabash Railroad case in 1886, when he ordered the removal of a receiver, appointed at the instance of the Gould interest, and put Judge Thomas M. Cooley in his place. In 1884 and 1888 he was a candidate for the Republican nomination for President. After the canvass of the latter year he urged reform in State elections, declaring that the conviction of a thousand obscure voters for bribery would in effect be as nothing compared with that of one prominent man. In July, 1892, an organization that met in Omaha, Neb., under the name of the People's party virtually offered Judge Gresham a nomination for the presidency, but the offer was declined, and in October following he publicly announced his intention of voting the Democratic ticket. After Mr. Cleveland's second inauguration Judge Gresham was appointed Secretary of State, and he held the office till his death. Among the notable diplomatic incidents of his term were the Hawaiian question, the Mosquito Reserve territorial dispute between Nicaragua and Great Britain, the Nicaraguan trouble with Great Britain arising from alleged insults to British subjects, the Mora claim against Spain, the case of ex-United States Consul



Waller against France, the firing on a United States mercantile vessel by the Spanish war ship "Allianca," and the Chinese massacres. (For portrait, see "Annual Cyclopaedia" for 1893, page 734.)

**Haas, Mauritz Hendrick De**, marine painter, born in Rotterdam, Holland, Dec. 12, 1832; died in New York city Nov. 23, 1895. Mr. De Haas began his studies at the Rotterdam Academy of Fine Arts and continued them at The Hague. Spoel, Bosboom and Louis Meyer were the masters who exercised the greatest influence upon his early education, although the fame of the English water-color school drew him to London in 1851, where he studied and painted for a year. In 1857 he was appointed artist to the Dutch navy, but a year later he decided to leave his native land, and since that time he has resided in New York. When he reached this city the Düsseldorf influence was strong, and with this rather than with the romantic French school he naturally sympathized. His work obtained prompt recognition. In 1863 he was elected an associate member of the Academy, and he became a full academicien in 1867. The year before, after various tentative efforts, the interest of many of our artists in water-color painting had taken permanent form in the still prosperous American Water-color Society, and Mr. De Haas was one of the original members. His life was that of an industrious and conscientious artist, undiversified by extraordinary events, but on the whole a career of success and of creditable performance. The civil war yielded him a few subjects, like "Farragut's Fleet passing New Orleans," painted in 1867, and his sketching tours to the English coast, Holland, and the island of Jersey furnished several themes, but he usually depicted sunsets, storms, wrecks, and fishing boats on breezy days off the New England and Long Island coasts. These subjects were carefully drawn and painted in a workmanlike and vigorous manner, and, although his pictures may appear objective and cold, his execution too finished, and his coloring too artificial, judged by canons which have found more general acceptance since the passing of Düsseldorf, Mr. De Haas proved himself an admirable representative of his school, and his work was well worthy of serious praise according to the standards by which he intended it to be measured. He was commended by the judges at the Centennial Exposition, and his pictures were constant features of the older private collections in New York, like those of the late August Belmont, Edwin D. Morgan, and John Taylor Johnston. Up to the close of his honorable career he was a regular exhibitor at the National Academy of Design.

**Handley, John**, philanthropist, born in Ireland in 1832; died in Scranton, Pa., Feb. 15, 1895. On removing to the United States he settled in Virginia, but since 1860 had lived in Scranton. He was elected judge of Luzerne County as a Democrat in 1874, became presiding judge of Lackawanna County on its organization in 1878, and served till 1884, when he was defeated for re-election through factional troubles in his party. After his retirement from the bench he engaged in banking and real-estate operations. His fortune at his death was estimated at over \$3,000,000, and his will contained the following public bequests: To the city of Winchester, Va., for a library, \$500,000; to St. Patrick's Orphan Asylum \$50,000, and the House of the Good Shepherd \$25,000, both in Scranton; and to each of these institutions one third of his residuary estate, the real estate to be held for twenty years before division. He also provided for continuing the education of more than 20 young men and women which he had undertaken.

**Hawkins, Jacob**, clergyman, born in Newberry County, South Carolina, Sept. 4, 1808; died in St. Luke's, S. C., July 1, 1895. He was the son of a Lutheran clergyman. When he was sixteen years of age his father removed to Tennessee. The son was graduated at the classical and theological seminary in Lexington, S. C., in 1855 was licensed by the South Carolina Synod, and in 1857 was ordained. He was pastor successively of congregations in South

Carolina, Georgia, West Virginia, and Maryland. In 1874 he became one of the editors of the only Lutheran Church paper published in the South, the "Lutheran Visitor," in 1878 he was made sole editor, and in 1880 permanent editor. He held this place until his death. He frequently presided over synodical conventions. He contributed to various periodicals and published a series of catechisms for Sunday schools which have been widely circulated.

**Hayman, Samuel Brinkle**, military officer, born in Chester County, Pennsylvania, June 5, 1820; died in Houstonia, Mo., May 1, 1895. He was graduated at West Point in 1842, and was promoted 2d lieutenant, 7th Infantry, July 21, 1844; 1st lieutenant, Feb. 16, 1847; captain, March 3, 1855; major, 10th Infantry, Jan. 21, 1863; and lieutenant colonel, 17th Infantry, Sept. 15, 1867; and was retired July 1, 1872. In the volunteer army he was commissioned colonel of the 37th New York Infantry, Sept. 28, 1861; was mustered out of the service June 22, 1863; and was brevetted brigadier general March 13, 1865. He took part in several battles in the Mexican War, including the capture of Mexico city, and served throughout the civil war with the Army of the Potomac, participating in the battles of Williamsburg, Fair Oaks, Malvern Hill, Manassas, Fredericksburg, Chancellorsville, and the Wilderness, in the last of which he was wounded.

**Henry, Morris H.**, physician, born in London, England, July 26, 1835; died in New York city, May 19, 1895. He was the son of a professor of Oriental languages; was educated at the Polytechnic School of Brussels, and in art at Somerset House, London; came to the United States in 1852; and was graduated in medicine at the University of Vermont in 1860. During the civil war he was an assistant surgeon in the navy, serving principally under Admiral Farragut. In 1872 he was appointed surgeon in chief of the New York State Emigrant Hospitals, and he held the office till 1880. He contracted blood poisoning while on duty, from which he never recovered. Dr. Henry was widely recognized as an authority on skin diseases, as an inventor of surgical appliances, and as the founder and editor of "The American Journal of Dermatology." He was decorated three times by the Sultan of Turkey, and once by the King of Greece. He edited "Fox on Skin Diseases."

**Hill, Alfred James**, archaeologist and geographer, born in London, England, in 1833; died in St. Paul, Minn., June 15, 1895. He received a seminary education in England, and in 1854 settled at Red Wing, Minn. He immediately began a study of the geography of the Northwest; removed to St. Paul in 1855, and served as a topographical engineer at the army headquarters there. He enlisted at the outbreak of the civil war in 1861, and was almost immediately detailed for special service in Washington at army headquarters. Joining his regiment at Helena, Ark., he served till the close of his term of enlistment and was honorably discharged, returning to St. Paul, where he was variously connected with different departments of the State government, and by his researches concerning the treaty with England caused the change in the official maps, so as to include the detached territory north of the Lake of the Woods, not theretofore recognized as a part of the public domain. In 1866 he took up the study of archaeology, and he was chairman of the Archaeological Committee of the State Historical Society. Mastering the Spanish, French, and Italian languages, he became editor of various translated historical articles, adding thereto voluminous notes. In this manner he took up the works of Giaomo Constantino Beltrami, and secured for that Italian traveler the honor of having his name given to a county at the source of the Mississippi. Various translations from the French were completed, principally on topics concerning the early establishment of New France and Louisiana, the writings of Margry and the "Jesuit Relations" being his favorite study in that language. He continued his archaeological researches, and supplemented them by studies in astronomy, geography, cartography, and phrenology.



Having acquired a competency by judicious investment of wages, he made all needed preparations for an extensive and important archaeological survey of the Northwest, which had broadened out by necessity from an intended survey of ancient earthworks in Minnesota. He engaged the services of a surveyor in the field for mound explorations during a period of twelve years, and platted with his own hand nearly 12,000 prehistoric mounds north of the Ohio river and west of the Great Lakes. In 1889 he was assistant to the commissioner in charge of a scientific survey of the source of the Mississippi, in behalf of the State Historical Society, and took up a study of the Spanish accounts of discovery, contributing voluminous notes to Vol. VII of the State Historical Collections. Numerous articles were published in scientific journals, usually over the name of his employee who surveyed the mounds and made the necessary explorations in the field. At the time Dr. Elliott Coues undertook the editorial preparation of the Lewis and Clark explorations up the Missouri and down the Columbia to the Pacific seaboard, reproduced in 4 volumes, all the material portion of the work passed under the critical eye of Mr. Hill, and he contributed voluminous notes thereto. He was also associated with the expedition of 1895, which discovered numerous ancient village sites and mounds in the head-water drainage basin of the Mississippi and at Leech Lake. At the time of his death he was preparing a work on the route of De Soto and his followers, from Florida to the country west of the Mississippi; a work upon the archaeology of the Northwest, for which he had accumulated the results of more than twelve years' labor at his individual cost, amounting to about \$19,000; an elaborate paper on the international boundary line between Lake Superior and the Lake of the Woods; an atlas; and various other uncompleted manuscripts. The results of these scientific labors, so far as they have come to light, have passed into the hands of the courts, as an estate for administration and distribution to legal heirs who reside abroad. As the cost of publishing the results of the labors enumerated will probably exceed \$45,000, the final result and disposition of this life work is left in jeopardy, especially since no portion of the work is completed. He had remained single, and was stricken with his last illness only two days prior to the date set for his marriage.

**Hoar, Ebenezer Rookwood**, jurist, born in Concord, Mass., Feb. 21, 1816; died there Jan. 31, 1895. He was a son of Samuel Hoar and a brother of United States Senator George F. Hoar; was graduated at Harvard in 1835, and was admitted to the bar in 1840. In 1846 he was elected to the State Senate as an Anti-slavery Whig, and in 1848 he became one of a notable company of men whose public careers began in association with the Free-soil movement. In consequence of his father's expulsion from Charleston, S. C., whither he had been sent by the Legislature of Massachusetts to test the constitutionality of enactments by the Legislature of South Carolina authorizing the imprisonment of free colored people who should enter the State, the son wrote the call for a meeting of all who were opposed to Cass and Taylor as presidential candidates, to which Charles Sumner, Charles Allen, Charles Francis Adams, John A. Andrew, and Stephen C. Phillips responded. At this meeting, in Worcester, Mass., June 28, 1848, the name of Samuel Hoar was placed at the head of the electoral ticket of the new Free-soil party, which subsequently met in national convention in Buffalo, N. Y., and nominated Martin Van Buren. In 1849-'53 Mr. Hoar was a judge of the Court of Common Pleas, and in 1859-'69 he was a judge of the Supreme Court of the State. In March, 1869, he became Attorney-General of the United States, but he resigned in June, 1870, for reasons that were never made public, and soon afterward he was nominated for Associate Justice of the United States Supreme Court, but was rejected by the Senate. The President again testified to Judge Hoar's eminent abilities by appointing him a member of the joint

high commission that framed the Treaty of Washington in 1871. Judge Hoar served a term in Congress in 1873-'75, and in the last year was a candidate for the United States Senate, when Henry L. Dawes was chosen.

**Holland, George W.**, clergyman and educator, born in Churchville, Va., July 16, 1838; died at Newberry, S. C., Sept. 30, 1895. He was graduated at Roanoke College, Salem, Va., in 1857; was tutor in the college for a year, and was graduated at the theological seminary of Gettysburg, Pa., in 1860, having spent one session in Union Seminary, New York. In 1860 he was licensed and at once became pastor of the Rockingham parish, Virginia. In July, 1861, he enlisted in the Confederate army, and in October of the same year lost his left arm. In 1863 he became principal of the academic department of Roanoke College. In 1867 he again became pastor of the Rockingham parish, which he served until 1873, and then accepted a call as pastor of congregations near Pomaria, S. C. In the following year he accepted the chair of Ancient Languages in Newberry College, and in 1877 became president of the institution.

**Houghton, Henry Oscar**, publisher, born in Sutton, Vt., April 30, 1823; died in North Andover, Mass., Aug. 26, 1895. His early education was obtained in the common schools and at Bradford Academy in his native State, and after some time spent in the office of the "Free Press" at Burlington, he entered the University of Vermont. After leaving college he was employed for a time as reporter on the Boston "Traveler," and in 1849 he established a printing office in Cambridge, the successor to which is the present Riverside Press. In 1864 he entered more distinctly upon his career as publisher by establishing in New York the house of Hurd & Houghton, and the publishing department of the business continued under that imprint until 1878. In the latter year the Boston firm of Houghton, Osgood & Co., publishers, was established, the successor to that of Hurd & Houghton and James R. Osgood & Co., which was itself the successor to the more noted house of Ticknor & Fields. In 1880 the firm name became Houghton, Mifflin & Co., which it has ever since retained. The firm possessed not only the Riverside Press, but the library inheritances of the house of Ticknor & Fields and its predecessors to 1828, the year when the first publishing house of the line was established. Mr. Houghton's success was the direct result of long-continued effort and native talent. He was a man of wide sympathies and far-reaching plans, and did much toward establishing a high standard in book making.

**Hovenden, Thomas**, artist, born in Dunmanway, County Cork, Ireland, Dec. 28, 1840; died near Norristown, Pa., Aug. 14, 1895. He began studying art in the Cork School of Design; removed to New York city in 1863, became a student at the National Academy of Design, and had a studio in Philadelphia, Pa., from 1868 till 1874. In the last year he studied in Paris under Cabanel, returning to the United States in 1880. A year later he was elected an associate of the National Academy; in 1882 an academician and a member of the Society of American Artists and of the American Water-color Society; in 1883 of the Philadelphia Society of Artists; and in 1885 of the New York Etching Club. He was instantly killed by a locomotive while making a vain attempt to rescue a little girl at a grade crossing. His most notable paintings are: "The Two Lilies" (1874); "A Brittany Woman spinning" and "Pleasant News" (1876); "The Image Seller" (exhibited in the Paris Salon, 1876); "Thinking of Somebody" and "News from





the Conscript" (1877); "Pride of the Old Folks" and "Loyalist Peasant Soldier of La Vendée, 1793"

(1878); "A Breton Interior, 1793" (exhibited in Paris, 1878); "In Hoc Signo Vinces" (1880; reproduced by Goupil); "Dat Possum" (1880); "Elaine" (1882); "Last Moments of John Brown" (1884); "Taking his Ease" (1885); and "Breaking Old Ties" (exhibited at the World's Columbian Exposition, 1893, and since engraved).

**Howe, Mark Antony De Wolfe**, an Episcopal clergyman, born in Bristol, R. I., April 25, 1809; died there

July 31, 1895. He was graduated at Brown University in 1828, and was ordained deacon in 1832 and priest the next year. He was rector successively of St. James's Church, Roxbury, Mass., Christ Church, Cambridge, and St. Luke's, Philadelphia, having charge of the last-named parish from 1846 to 1871. In 1871 he was consecrated bishop of the newly formed diocese of Central Pennsylvania. He possessed marked executive ability, and while holding positive opinions was wholly nonpartisan in the conduct of his episcopal duties. His publications include "Domestic Slavery: A Reply to Bishop Hopkins" (Philadelphia, 1864); "Memoirs of Bishop Alonzo Potter" (1871).

**Hoyt, Jehiel Keeler**, author, born in New York city, in August, 1820; died in Plainfield, N. J., Feb. 9, 1895. He was educated in Wilton, Conn.; engaged in business first in New York and afterward in New Orleans, making a large fortune in the latter city and losing it by the civil war; and from the close of the war till within a few months of his death he was engaged in journalism in New Brunswick and Newark, N. J. He published the first American translation of Jules Verne's "Journey from the Earth to the Moon," and in co-operation with Miss Anna Ward compiled the "Encyclopedia of Practical Quotations." At the time of his death he had completed the compilation of a "Quotable Shakespeare," on which he had worked more than twenty years.

**Hurlbut, William Henry**, journalist, born in Charleston, S. C., July 3, 1827; died in Cadenabbia, Italy, Sept. 4, 1895. He was graduated at Harvard in 1847, and at its divinity school in 1849; continued his studies in Berlin, Rome, and Paris; entered the Unitarian ministry, and took a course in Harvard Law School. In 1855 he became a contributor to "Putnam's Magazine" and "The Albion." In 1857 he joined the staff of the New York "Times," and he was engaged in editorial writing till after the presidential election of 1860. In 1861 he was arrested by a vigilance committee in Atlanta, Ga., and was refused a passport except on conditions to which he would not agree; but in August, 1862, he made his escape through the lines. He then joined the editorial staff of the New York "World," in which he acquired an interest in 1876, and from which he retired in 1883. In 1866 he visited Mexico city on the invitation of Maximilian; in 1867 represented his paper at the Paris Exposition, and at the centenary festival of St. Peter in Rome; in 1871 accompanied the United States expedition to Santo Domingo; and from 1883 till 1891 resided chiefly in London, being for several years the correspondent of the New York "Sun." In 1891 a suit for breach of promise of mar-

riage was brought against him by Miss Gertrude Ellis, otherwise known as Gladys Evelyn, on the trial of which the jury returned a verdict in his favor. The complainant appealed, and the appeal was denied. Subsequently the public prosecution issued a warrant for his arrest on a charge of perjury in connection with the suit. Denying the charge and claiming that he had been impersonated in correspondence and interviews with the complainant by a person named Wilfred Murray, he made himself an exile from England, and the subject of a mystery that his death has not cleared.

**Hutchings, Samuel**, missionary, born in New York city, Sept. 15, 1806; died in Orange, N. J., Sept. 1, 1895. He was graduated at Williams College in 1818, and at Princeton Theological Seminary in 1831; first engaged in missionary work in Overland, Ohio, and in 1833 went to Ceylon, where he spent ten years in revision of the Tamil Bible and the compilation of a Tamil-English dictionary. Feeble health caused his return to the United States. He contributed nearly 1,000 articles to the American edition of "Chambers's Encyclopædia," and a large number of biographical sketches to the "Encyclopædia of Missions."

**Jackson, Howell Edmunds**, jurist, born in Paris, Tenn., April 8, 1832; died in West Meade, Tenn., Aug. 8, 1895. He was graduated at West Tennessee College in 1848; spent two years at the University of Virginia; was graduated at Lebanon Law School in 1856; and began practice in Jackson, but removed to Memphis in 1859. During the civil war he held a civil appointment under the Confederate Government. Twice he served by appointment as a judge of the Supreme Court of Tennessee. In 1876 he returned to Jackson; in 1880 was elected to the Legislature; in 1881 was elected to the United States Senate; in 1887 was appointed United States circuit judge for the 6th Judicial District, and in February, 1893, an associate justice of the United States Supreme Court.

**Jordan, Thomas**, military officer, born in Luray, Va., Sept. 30, 1819; died in New York city, Nov. 27, 1895. He was graduated at West Point in 1840; first served in the Seminole Indian war in Florida as 2d lieutenant, 3d Infantry; was promoted 1st lieutenant, June 18, 1846; served through the Mexican War, distinguishing himself at Palo Alto and Resaca de la Palma; was promoted captain and quartermaster on Gen. Taylor's staff March 3, 1847; and after the war served again in Florida and in the Northwest. In 1850-'56 he was stationed at Fort Miller, Cal., and in 1856-'60 at Fort Dallas, Ore. While on the Pacific coast he introduced steam navigation on Columbia river above the Dalles, and also the first successful system of irrigation of arid plains. In May, 1861, he resigned his commission in the United States army, and soon afterward entered the Confederate service with the rank of lieutenant colonel. He accompanied Gen. Beauregard to Tennessee as chief of staff; took part in the battle of Shiloh, for which he was promoted brigadier general; was on temporary staff duty with Gen. Bragg, and during the siege of Charleston was with Gen. Beauregard. In 1869 he was commissioned chief of the general staff of the Cuban insurgent army; in May he landed at Mayan with 300 men and a large quantity of arms and supplies, and marched into the interior; in December was appointed commander in chief of the revolutionists; and in January, 1870, fought a successful battle at Guaimaro. In the following month he resigned because of the exhaustion of his supplies and the hopelessness of reorganizing an effective force. He returned to New York city and became editor of "The Financial and Mining Record." He published, with J. B. Pryor, "Campaigns of Lieut.-Gen. Forrest" (New York, 1868).

**Jordan, Thomas Jefferson**, military officer, born in Walnut Hill, Dauphin County, Pa., Dec. 3, 1821; died in Philadelphia, Pa., April 2, 1895. He was educated at Mount Joy, Pa., and at Dickinson College, and entered the National army as an aid on the staff of Gen. W. H. Keim, April 13, 1861. On Oct. 22 following he was commissioned major of the 9th Pennsylvania



Cavalry; on Jan. 13, 1863, he was promoted colonel; on Feb. 25, 1865, he was brevetted brigadier general of volunteers for gallant and meritorious service; and on July 18 following he was mustered out. His first active service was in Kentucky, where he took part in the actions at Lexington, Paris, Perryville, and Richmond. Subsequently he served in Tennessee in the engagements at Fair Garden, Dandridge, Franklin, Wautauga, Carter's Station, Mossy Creek, Readyville, and Woodbury. He was present at Chickamauga, and after the fall of Atlanta was assigned to the 1st brigade, 3d Division of cavalry, of the Army of Georgia, and took part in the march to the sea. In April, 1865, he commanded the escort of Gen. Sherman at his conference with Gen. Johnston, and was present at the surrender. Gen. Jordan was a prisoner of war for five months, and part of the time was confined in Castle Thunder, Richmond.

**Kautz, August Valentine**, military officer, born in Ispringen, Germany, Jan. 5, 1828; died in Seattle, Wash., Sept. 4, 1895. His parents came to the United States in the year of his birth, and in 1832 settled in

Brown County, Ohio. In 1846 he enlisted as a private in the 1st Ohio Infantry for service in Mexico, and on June 14, 1847, he was discharged. He was graduated at West Point in 1852, and commissioned a brevet 2d lieutenant, 4th Infantry. In the regular army he was promoted 2d lieutenant, March 24, 1853; 1st lieutenant, Dec. 4, 1855; captain, 6th Cavalry, May 14, 1861; lieutenant colonel, 34th Infantry, July 28, 1866; colonel, 8th Infantry, June 8,



1874; and brigadier general, April 20, 1891; and was retired Jan. 5, 1892. In the volunteer army he was commissioned colonel of the 2d Ohio Cavalry, Sept. 2, 1862; promoted brigadier general, May 7, 1864; and was mustered out of the service Jan. 15, 1866. During his military service he was brevetted major in the regular army, June 9, 1863, for gallantry at Monticello, Ky.; lieutenant colonel, June 9, and colonel, Oct. 7, both in 1864, for the attack on Petersburg, Va., and the action on the Darbytown road, in Virginia, respectively; brigadier general and major general, March 13, 1865, for meritorious services in the field during the war; and major general in the volunteer army, Oct. 28, 1864, for the Richmond campaign. Prior to the civil war he served in Oregon and Washington Territory, in the Rogue river wars of 1853-55, and in the Indian war on Puget Sound in 1856, and was wounded in the two last campaigns. From his assignment to the 6th Cavalry as captain to his assumption of command of the 2d Ohio Cavalry, he was on duty in the Peninsula campaign, and from December, 1862, till April, 1863, he had command of Camp Chase, Ohio. In the last month he was assigned to the command of a brigade of cavalry, with which he took part in the capture of Monticello, Ky., and in July was engaged in the pursuit and capture of John Morgan. On May 7, 1864, he was given command of the cavalry division of the Army of the James; on June 9 he entered Petersburg, Va., with a small force; and subsequently he led the advance of the Wilson raid, which cut the roads leading into Richmond from the south. His last act in the civil war was to march a division of colored troops into Richmond, April 3, 1865. After the war he commanded successful expeditions against the Mescalero Apaches in New Mexico, and re-established them on their reservation in 1870-71; and served in Arizona, California, and Nebraska till his retirement. He was author of "The Company Clerk" (Philadelphia, 1863); "Customs of Service for Non-commissioned Officers and Soldiers" (1864); and "Customs of Service for Officers" (1866).

**Kemper, James Lawson**, military officer, born in Madison County, Virginia, June 11, 1823; died in Orange County, Virginia, April 7, 1895. He was graduated at Washington College, Lexington, Va., in 1842; studied law and was admitted to the bar; served as a captain in the Mexican War; and entered political life soon after his return. For ten years prior to the civil war he was a member of the Virginia House of Delegates, and for two years its Speaker. On May 2, 1861, he was commissioned colonel of the 7th Virginia Infantry, which he first led at Manassas. Soon afterward he was placed in command of the brigade that had served under Longstreet, Ewell, and A. P. Hill, and was promoted brigadier general. He took part in the first day's fight at Seven Pines, May 31, 1862; in the seven days' fighting around Richmond the same year; the battles of South Mountain, Antietam, and Fredericksburg; in the Confederate operations in North Carolina; and in part of the battles of Gettysburg, where he was severely wounded and captured. In June, 1864, he was promoted major general, and afterward commanded at Richmond till its evacuation. In 1872 he was a presidential elector at large on the Liberal Republican ticket, and in 1874-78 was Governor of Virginia.

**Kendrick, Asahel Clark**, educator, born in Poultney, Vt., Dec. 7, 1809; died in Rochester, N. Y., Oct. 21, 1895. His father, Clark Kendrick, and his uncle, Ariel Kendrick, were well-known Baptist clergymen in Vermont, the former of whom was active in promoting the education of young men for the ministry. Asahel was graduated at Hamilton College in 1831, and immediately became a tutor in the Literary and Theological Institution at Hamilton, Madison County, N. Y., which his father's cousin, Nathaniel Kendrick, had founded, and which is now Colgate University. Two years later he was made Professor of Latin and Greek, and afterward he taught Greek exclusively. Here he remained until 1850, with the exception of a year and a half, which he spent in a horseback journey through the Southern States, for the benefit of his health. In Hamilton he owned and occupied the house that was afterward the home of Fanny Forester, the third Mrs. Judson, whose life he wrote. When the University of Rochester was founded, in 1850, he was called to the professorship of Greek, which chair he occupied until his retirement and appointment as professor emeritus in 1888. He had been ordained in early life as a Baptist clergyman, but never had a pastoral charge. Professorships in Hamilton, Waterville, Brown, and other institutions were offered to him, and at one time he was asked to become President of Brown University; but he declined them all, preferring to remain with the institution he had assisted in founding. In 1852 he visited Europe, and spent much time in Rome and Athens, studying their antiquities, and also traveled in northern Greece and Germany, returning in 1854. He visited Europe again in 1868, and in 1881. He also traveled much in his own country, and had a very wide acquaintance among men of all classes. In 1865-68, in addition to his duties in the university, he filled the chair of Hebrew and New Testament Interpretation in the Rochester Theological Seminary. When the American committees were formed to aid in the revision of the English version of the Bible, in October, 1872, he was appointed a member of the New Testament Committee, and he took a very active part in the work, rarely missing a meeting of the committee, until its task was completed, in 1880. Dr. Howard Crosby being asked as to the relative work and in-





fluence of the individual members, answered: "I think, on the whole, Dr. Kendrick oftenest suggested the reading that was finally adopted." Dr. Kendrick was not only the foremost Greek scholar in the country, but was deeply read in many literatures and had given much study to Oriental learning. Personally he was the favorite of the students who came under the charge of the faculty of which he formed a part, because of his genial nature, sympathetic method of instruction, and frequent humor, as well as his great scholarship. He did a vast deal of literary work, much of which was of the most exacting and laborious kind, writing elaborate articles for the "Christian Review" and other periodicals and producing many books. These included: "A Child's Book in Greek"; "Introduction to the Greek Language"; "The Greek 'Ollendorf'"; Xenophon's "Anabasis," with notes; revision of Bullions's "Greek Grammar," and other text-books; a revised edition of the English translation of Olshausen's "Commentary on the New Testament," with many new notes and some portions retranslated (6 vols., 1853-58); "Echoes," a volume of metrical translations from the French and German poets (1855); "Life and Letters of Emily C. Judson" (1860); a translation of the Epistle to the Hebrews, with notes, for Lange's "Commentary" (1867); "Our Poetical Favorites" (3 vols., 1870-80); a revision with notes of Meyer's "Commentary on John" (1885); "The Moral Conflict of Humanity," a volume of articles in New Testament exegesis (1894); and "A Life of Martiu B. Anderson," President of the University of Rochester (1895). He left in manuscript a translation of the Epistle to the Romans, with voluminous notes.

**Keyes, Erasmus Darwin**, military officer, born in Brimfield, Mass., May 29, 1810; died in Nice, France, Oct. 11, 1895. He was graduated at West Point in 1832; entered the army as brevet 2d lieutenant, 3d Artillery; was promoted 1st lieutenant in 1836; captain and assistant adjutant general in 1837; major, Oct. 12, 1858; colonel, May 14, 1861; brevet brigadier general, May 31, 1862; and major general of volunteers, May 5, 1862; and resigned May 6, 1864. His first service was in Charleston harbor during the nullification excitement of 1832. In 1837-'41 he was an aid to Gen. Scott; in 1841-'44 was on garrison duty; in 1844-'48 was instructor in artillery and cavalry tactics at West Point; and in 1848-'60 was on garrison and frontier duty, taking part in several campaigns against hostile Indians. From Jan. 1, 1860, till April 19, 1861, he was military secretary to Gen. Scott, and he then spent some time in New York city and Boston, hastening the recruiting and forwarding of troops. Afterward he served in the defenses of Washington, in the battle of Bull Run, and in the Peninsula campaign, commanding the 4th Corps of the Army of the Potomac. In January, 1863, he organized a raid to White House, Va.; in May commanded an expedition to West Point, Va.; and in June and July was engaged in another toward Richmond. At the time of his resignation he was serving on the board for retiring disabled officers. After leaving the army he was for two years president of the Mexican Gold-mining Company in San Francisco, and for four years vice-president of the California Vine-culture Society. He was author of "Fifty Years' Observation of Men and Events" (New York, 1884).

**Kimball, Hannibal I.**, financier, born in Oxford County, Maine, in 1832; died in Brookline, Mass., April 28, 1895. He was apprenticed to the carriage-maker's trade, followed it in New Haven and Boston till 1866, entered the employ of George M. Pullman in Chicago, was placed in charge of the work of establishing street railways in the Southern States, and became head of the Southern branch of the Pullman Car Company in Atlanta. From 1866 till his death he applied himself to the material development of Georgia. Through his efforts the State capital was transferred to Atlanta, and the new Capitol built by the city and presented to the State; the railway facil-

ities in the rear of the wholesale houses on Alabama Street were improved and arranged as at present; the great commercial convention, the International Cotton Exposition of 1881, and the Cotton States and International Exposition of 1895 were organized; and a large hotel, the Kimball House, was built, and after its destruction by fire, rebuilt. Mr. Kimball was the organizer of the great cotton mills in Atlanta; and was at one time president of 9 railway companies.

**Kimball, Moses**, philanthropist, born in Newburyport, Mass., Oct. 24, 1810; died in Brookline, Mass., Feb. 21, 1895. He entered mercantile life, but tired of it and purchased "The New England Galaxy" in 1833, published it for several years, and also published engravings of Trumbull's "Signing of the Declaration of Independence," Stuart's "Washington," and many other notable pictures. In 1836 he entered mercantile life again, only to abandon it, on becoming interested in public amusements. He first opened a "lecture room" in Lowell, in which dramatic entertainments were given and curiosities exhibited. About 1840 he bought the Columbian Museum in Boston, and transferred to it all his amusement properties, and in the following year, in partnership with his brother David, he opened what is now the Boston Museum, of which he was proprietor at his death. From early life he was interested in politics, and for many years he was an influential worker in the anti-slavery cause. He was elected a member of the Common Council of Boston in 1849, and held some legislative office almost continuously for more than forty years. He was a member of the State House of Representatives for sixteen years, and director of public institutions of Boston for twelve years; was the first chairman of the State Board of Health, Lunacy, and Charity; was chairman of the House Committee on Finance for many years; and was one of the commissioners to arrange for the annexation of Roxbury to Boston. In 1879 he presented to the city the Emancipation group in Park Square. His public bequests were: To the New England Hospital for Women and Children in Boston, \$16,000; to the same hospital, the Home for Aged Men, the Home for Aged Women, the Boston Dispensary, the Massachusetts Charitable Eye and Ear Infirmary, the Gwynne Home for Children, the New England Historical-Genealogical Society, the Museum of Fine Arts, the Institute of Technology, and the Boston Young Men's Christian Union, each \$5,000; and to other nonsectarian charitable organizations an aggregate of \$10,000.

**Kirkwood, Daniel**, educator, born in Bladensburg, Md., Sept., 27, 1814; died in Riverside, Cal., June 11, 1895. He was brought up on a farm; took a four years' course at the academy at York, Pa.; was instructor in mathematics there for five years; and was appointed principal of the high school at Lancaster, Pa., in 1843. In 1851 he was chosen Professor of Mathematics at Delaware College, of which he was elected president in 1854. Two years afterward he was called to the chair of Mathematics at Indiana University, where he remained till 1886, when he was retired. He was author of "The Asteroids or Minor Planets between Mars and Jupiter."

**Kneeland, Joseph C.**, inventor, born in Ashleyville (now West Springfield), Mass., about 1815; died in Northampton, Mass., Aug. 21, 1895. He learned the printer's trade in Northampton, and followed it in Greenfield, Worcester, Troy, and New York city, returning finally to Northampton about 1870. Of his many inventions relating to the printing business, the most important are the "lay boy," a device for receiving and piling up paper from a manufacturing or printing machine, an improved writing-paper folder, and an improved quoin for locking up forms. The first invention yielded him large returns.

**Langdon, William Chauncey**, clergyman, born in Burlington, Vt., Aug. 19, 1831; died in Providence, R. I., Oct. 28, 1895. He was graduated at Transylvania University, and after teaching for a short time in Shelby College, Kentucky, was for several years an examiner in the Patent Office. In 1859 he took



priest's orders in the Episcopal Church, and in the same year founded the American Episcopal Church in Rome, and was its rector until 1862. He then became rector of St. John's Church at Havre de Grace, Md. In 1867 he went abroad again, remaining there until 1875, in the interest of the movement for Church union, and was very active in bringing about cordial relations between "Old Catholics" and the American bishops. During this time he founded Emmanuel Church at Geneva, and was its rector for two years. He was subsequently rector of Christ Church, Cambridge, Mass., from 1875 to 1877, and of St. James's Church in Bedford, Pa., from 1883 to 1890. He retired from active clerical duty in that year, but still labored in behalf of the cause of Christian unity. He published "Some Account of the Catholic Reform Movement in the Italian Church" (London, 1868); "The Defects of our Practical Catholicity" (New York, 1871); "Plain Papers for Parish Priests and People" (1880-'83); "Conflict of Practice and Principle in the American Church Polity" (Cambridge, 1882).

**Langstroth, Lorain L.**, apiarist, born in Philadelphia, Pa., Dec. 25, 1810; died in Dayton, Ohio, Oct. 6, 1895. He was graduated at Yale College in 1830; was a tutor there in 1834-'35; entered the ministry of the Congregational Church; and became principal of a young ladies' seminary in Philadelphia in 1848. Since 1858 he had been engaged chiefly in the cultivation of bees at Oxford, Ohio, occasionally acting as a ministerial supply. He invented the movable-comb hive, and was the author of "The Hive and the Honey Bee."

**Leaman, Charles**, author, born in Monroe, Mich., June 14, 1819; died in Washington, D. C., March 4, 1895. He spent ten years in a business house in New York city, and in 1845 became editor of the "Gazette" in his native town. In 1846 he became associate editor of the Cincinnati "Chronicle," and in 1847 of the New York "Express"; in 1849 was appointed librarian of the War Department; and in 1850 became librarian of copyrights and private secretary of Daniel Webster. He was examiner of depositaries for the Southern States in 1853; librarian of the Interior Department in 1855-'57; librarian of



the House of Representatives in 1866; and secretary to the Japanese legation at Washington in 1871-'82. The last fifteen years of his life were spent in literary work and in painting, as he had studied art with Asher B. Durand and been elected an associate of the National Academy in 1846. He was the first person to penetrate the Saguenay region in Canada, and was one of the first explorers of the mountain region of North Carolina. He contributed frequently to the exhibitions of the National Academy, his best-known paintings being "Brookside and Homestead"; "Home in the Woods" (1881); and "Frontier Home" (1884). His publications included: "Essays for Summer Hours" (Boston, 1842); "Letters from a Landscape Painter" (1845); "A Summer in the Wilderness" (New York, 1847); "A Tour to the River Saguenay" (Philadelphia, 1848); "Letters from the Alleghany Mountains" (New York, 1849); "Private Life of Daniel Webster" (1852); "Dictionary of Congress" (many editions); "Red Book of Michigan" (Detroit, 1871); "Resources of America," compiled for the Japanese Government (Washington, 1872); "The Japanese in America" (1872); "Biographical Annals of the Civil Government of the United States" (several editions); "Curious Characters and Pleasant

Places" (Edinburgh, 1881); "Leading Men of Japan" (Boston, 1883); "Farthest North" (New York, 1885); and "Haphazard Personalities" (1886).

**Leach, Stephen W.**, composer, born in Rumsey, England, in 1821; died in Oakland, Cal., Aug. 21, 1895. Prior to coming to the United States he played double bass in the orchestra that accompanied Paganini in the Southampton. He made his first appearance in the United States in Philadelphia, April 25, 1849. At one time he was chorus master of Jenny Lind's company, and he also sang with Anna Bishop and with Patti. In 1861 he went to San Francisco with an opera company, and after a season of song he joined the company of the California Theater. Afterward he established himself in Oakland, where he conducted a conservatory of music. While connected with the California Theater he wrote the incidental music for at least 50 plays, including the parts for John McCullough's "King John," "Coriolanus," and "Richelieu," and that for Adelaide Neilson's "Cymbeline." His last composition was a special Easter service for 1895.

**Leclercq, Charles**, actor, born in England about 1823; died in New York city, Sept. 19, 1895. He was a son of Charles Leclercq, a well-known English actor and pantomimist, and a brother of the late Carlotta Leclercq and of Rose Leclercq. He came to the United States in 1870, and after supporting Charles Fechter as Cadrouse in "The Count of Monte Cristo," he joined the company at Daly's Theater, with which he remained for fourteen years, playing chiefly comedy and dialect parts.

**Lee, Samuel J.**, lawyer, born in Abbeville County, South Carolina; died in Charleston, S. C., April 1, 1885. He was born in slavery, on the plantation of Samuel McGowan, who became a Confederate general; was body servant of his master throughout the civil war, in which he was wounded; and after the war secured an education and was admitted to the bar. About the beginning of the reconstruction period in South Carolina he moved into Edgefield County, and was elected to the General Assembly, of which he became Speaker when Franklin J. Moses was elected Governor. In 1876 he escaped the prosecutions that befell most of the officeholders of that period, and settled in Charleston, where he secured considerable practice and the good will of white lawyers. On the reorganization of the State militia he was commissioned brigadier general of the 1st brigade of colored troops, being the only colored officer of that rank in the United States.

**Lewis, John Francis**, farmer, born near Port Republic, Va., March 1, 1818; died in Lynwood, Va., Sept. 2, 1895. He was brought up as a farmer, and spent all his life, when not in public office, as such. In 1861 he was a delegate to the State convention called to determine whether Virginia should secede, and was the only member within the present limits of the State who refused to sign the ordinance of secession. With others he appealed successfully to President Grant to recommend to Congress the passage of an act submitting to a separate vote of the people of Virginia the disfranchising clauses of the Underwood Constitution, and in 1869, when the reform Constitution was adopted, he was elected Lieutenant Governor on the True Republican ticket. The same year he was elected United States Senator, and during his term he was chairman of the Committee on the District of Columbia and a member of that on Engrossed Bills. In 1875 he was appointed United States marshal for the Southwestern District of Virginia, and in 1881 he was again elected Lieutenant Governor on the Readjuster ticket.

**Loomis, Alfred Lebbeus**, physician, born in Bennington, Vt., June 10, 1831; died in New York city, Jan. 23, 1895. He was graduated at Union College in 1851 and at the College of Physicians and Surgeons in 1853; spent two years as assistant physician to the hospitals on Ward's and Blackwell's islands; and, establishing himself in New York city, made a specialty of pulmonary diseases. In 1860 he was ap-



pointed physician to Bellevue Hospital; in 1860-75 was consulting physician to the Charity Hospital; from 1874 till his death was physician to the Mount Sinai Hospital; and since 1864 had been connected with the University of the City of New York, first as Adjunct Professor of the Theory and Practice of Medicine, and after 1866 as full professor. He was also for several years lecturer on physical diagnosis at the College of Physicians and Surgeons. In the University of the City of New York he was the leader in three notable steps of the faculty of medicine—the liquidation of the debt in 1886; the securing in 1887 of \$100,000 for a new laboratory, the donor of which insisted that the laboratory should bear the name of Dr. Loomis, and that his own name should not be made public; and the reorganization in 1892 of the course of study. Dr. Loomis had been President of the New York Pathological Society and of the New York State Medical Society. He bequeathed \$25,000 to the Loomis Laboratory and \$10,000 to the New York Academy of Medicine. He published "Lessons in Physical Diagnosis" (New York, 1868); "Diseases of the Respiratory Organs, Heart, and Kidneys" (1876); "Lectures on Fevers" (1882); "Diseases of Old Age" (1882); and "A Text-book of Practical Medicine" (1884).

**Loop, Henry Augustus**, artist, born in Hillsdale, N. Y., Sept. 9, 1831; died at Lake George, N. Y., Oct. 20, 1895. He was educated at Great Barrington, Mass.; studied painting in New York with Henry Peters Gray, N. A., and in Paris with Thomas Couture; continued his studies in Rome, Venice, and Florence; and opened a studio in New York. In 1859 he was elected an associate of the National Academy of Design, and in 1861 an academician. He confined himself chiefly to portraiture. Among his paintings are "Undine" (1861); "Aphrodite" (1876); "Echo" (1877); "Hermione and Helena" (1877); "Cenone" (1878); "At the Spring" (1879); "Idyl of the Lake" (1881); "Love's Crown" (1882); "Summer Moon" (1884); "The Dreamer" (1885); and many portraits.

**McCulloch, Hugh**, financier, born in Kennebunk, Me., Dec. 7, 1808; died near Washington, D. C., May 24, 1895. He studied at Bowdoin College and in Boston, and in 1833 removed to Fort Wayne, Ind., and began law practice. But



finding this vocation uncongenial, he accepted the management of a branch of the State Bank of Indiana in 1835. In the following year he was elected a director. He remained with this branch till the expiration of its charter, in 1857, when he was chosen president of a newly organized State Bank of Indiana, with which he remained till May, 1863, when he became Com-

troller of the Currency under the national banking law. Two years afterward, on the resignation of William P. Fessenden, Secretary of the Treasury, he was appointed by President Lincoln to fill the vacancy. At this time the Government was in great financial straits, owing to its enormous expenses and the heavy demands upon the Treasury. In less than six months from the time of his appointment the Government had paid the large amount due to 500,000 soldiers and sailors whose services were no longer necessary, had discharged other large obligations, and had begun reducing the national debt. By converting more than \$1,000,000,000 of short-time obligations into a funded debt, Secretary McCulloch succeeded in placing the whole debt of the country in a satisfactory shape in a little more than two years. He constantly advocated a steady reduction of the national debt, the retirement of the legal-tender

notes, and a speedy return to specie payment, and his views concerning the management of the debt were sustained by Congress. He held the office till March 4, 1869, and from 1871 till 1878 was engaged in banking in London. In 1884, on the resignation of Walter Q. Gresham, he was recalled to the secretaryship of the Treasury by President Arthur, and he continued in the office to the close of that administration. He published "Men and Measures of Half a Century" (1888). He was the last survivor of President Lincoln's Cabinet officers.

**McPherson, Edward**, journalist, born in Gettysburg, Pa., July 31, 1830; died there Dec. 14, 1895. He was graduated at the University of Pennsylvania in 1848, and studied law, but soon abandoned it for journalism. In 1858 and 1860 he was elected to Congress as a Republican; in 1863 was appointed Deputy Commissioner of Internal Revenue; and after six months' service resigned on being elected clerk of the United States House of Representatives. He held the last office continuously till 1873, again in 1881-83, and again in 1889-91. In 1876 he was permanent president of the National Republican Convention; in 1877-78 was chief of the Bureau of Engraving and Printing; in 1877-80 was editor of "The Philadelphia Press;" and from 1880 was editor and proprietor of a paper in Gettysburg. He received the degree of LL. D. from the University of Pennsylvania in 1877. For several years he was the American editor of the "Almanach de Gotha"; from 1872, editor of a biennial "Handbook of Politics"; and from 1877 editor of the "New York Tribune Almanac." He also published a "Political History of the United States during the Great Rebellion" (Washington, 1865), and "The Political History of the United States during Reconstruction" (1870).

**Mahone, William**, military officer, born in Southampton county, Va., Dec. 1, 1826; died in Washington, D. C., Oct. 8, 1895. He was graduated at the Virginia Military Institute in 1847, and was engaged in civil engineering till the beginning of the civil war. Early in 1861 he joined the Confederate army. He took part in the capture of the Norfolk Navy Yard, raised and commanded the 6th Virginia Regiment, and distinguished himself in the battles on the peninsula, on the Rappahannock, and around Petersburg. In March, 1864, he was commissioned a brigadier general, and in the following month was promoted major general. Subsequently he commanded a division in Gen. A. P. Hill's corps. After the war he resumed civil engineering, and became President of the Norfolk and Tennessee Railroad Company. In 1878 he was defeated as Democratic candidate for Governor of Virginia, and, becoming dissatisfied with his party, he organized and became the leader of the "Readjuster" party, which advocated a partial repudiation of the State debt. The following year the new party defeated the regular Democratic organization, and carried both branches of the Legislature, and in 1880 elected Gen. Mahone United States Senator. In the Senate he allied himself with the leaders of the Republican party. He was a protectionist. After his term he spent most of his time in Washington, where he was believed to be a millionaire; but in April, 1895, he executed a deed of trust on a large part of his property in Petersburg, to secure the payment of notes.

**Manogue, Patrick**, clergyman, born in Desert, County Kildare, Ireland, in 1831; died in Sacramento, Cal., Feb. 27, 1895. He received a collegiate education, came to the United States in 1856, and studied theology and philosophy at the University of St. Mary of the Lake, Chicago. After graduation he went to California, where he spent three years as a miner, mining superintendent, and part owner, and with his earnings went to Paris and completed his studies for the Roman Catholic priesthood. He was ordained in 1861, and was assigned to mission work in Virginia City, then a typical mining camp, full of saloons and gambling houses. The young priest showed himself at the start to be possessed of great physical courage, and by it as well as his conscientious work soon made



himself respected and popular. Through his efforts St. Mary's Church and a house for the Sisters of Charity were erected in the city, and effective mission work was done in the entire Grass valley. When the diocese of Grass Valley was created, he was made its vicar-general, and he acted as such for fifteen years. On July 20, 1880, he was appointed coadjutor to Bishop O'Connell, and in 1884 he became the second Bishop of Grass Valley. In May, 1886, the diocese was enlarged by the addition of adjoining counties. Sacramento was made the see, and Bishop Manogue was transferred to it.

**Marshall, William Rainey**, military officer, born in Boone county, Mo., Oct. 17, 1825; died in Pasadena, Cal., April 4, 1895. In early life he accompanied his parents to Quincy, Ill., where he received a common-school education. In 1841 he went to work in the lead mines at Galena; in 1847 engaged in the survey of public lands in the part of Wisconsin Territory now within the limits of Minnesota; in 1849 with his brother established the first general merchandise store on the site of Minneapolis; and in 1852 opened the first iron store within the limits of Minnesota at St. Paul. He was a banker in St. Paul in 1855-'57; became a dairy farmer and stock breeder in the last year; and established "The Daily Press" (now "The Pioneer Press") in 1861. He was elected to the Legislature of Wisconsin in 1848, and to the First Territorial Legislature of Minnesota in 1849. He was also active in organizing the Republican party in Minnesota, and in 1855 was defeated as its candidate for Congress. In 1862 he was commissioned colonel of the 7th Minnesota Regiment, with which he took part in two campaigns against the Indians; in 1863 was assigned to the 16th Army Corps, with which he was engaged in several battles; in December, 1864, commanded a brigade at the battle of Nashville; and on March 13, 1865, was brevetted brigadier general of volunteers for meritorious services. He was elected Governor of Minnesota in 1865 and 1867, and was afterward a commissioner of railroads.

**Martine, Randolph Brant**, jurist, born in New York city in 1844; died there March 30, 1895. He was graduated at Columbia College Law School in 1866, and the same year was admitted to the bar and began practice in New York city. For several years he was an active member of Tammany Hall, but in 1882 he resigned, and two years afterward, when chairman of the executive committee of the County Democracy, he was its successful candidate for district attorney. During his tenure a number of celebrated cases were tried, among them the members of the board of aldermen who were indicted for accepting bribes from Jacob Sharp in return for the franchise of the Broadway surface railroad. He personally took charge of the prosecution of Mr. Sharp, and secured a conviction. In 1887 the Legislature provided for the election of an additional judge of the Court of General Sessions, and in the autumn of that year Mr. Martine was elected the first additional judge.

**Marvil, Joshua Hopkins**, manufacturer, born in Laurel, Del., Sept. 3, 1825; died there April 8, 1895. He was brought up on a farm, went to sea for a year on attaining his majority, and worked in a shipyard for seven years. In 1853 he established himself as a manufacturer of agricultural implements, and in 1870 began making peach and berry baskets by means of an invention of his own. The following year he introduced steam power into his plant, and afterward he extended his works till they had a capacity of 2,000,000 fruit baskets per annum. In August, 1894, he was Republican candidate for Governor of Delaware, and was elected.

**Maxey, Samuel Bell**, military officer, born in Tompkinsville, Monroe County, Ky., March 30, 1825; died in Eureka Springs, Ark., Aug. 16, 1895. He was graduated at West Point in 1846; entered the army as brevet lieutenant, 7th Infantry; served with distinction through the Mexican War; was brevetted 1st lieutenant for gallantry at Contreras and Churubusco, and was appointed commandant of a picked company

in the city guard after the occupation of Mexico city. After the war he was on duty at Jefferson barracks till September, 1849, when he resigned, studied law, was admitted to the bar in 1850, and began to practice in Albany, Ky. He removed to Paris, Texas, in 1857, and practiced there till the beginning of the civil war. He raised the 9th Texas Infantry for the Confederate army, and was commissioned its colonel. He was promoted brigadier general in 1862; took part in the assault on Gen. Buell's retreating army in the first siege of Port Hudson and in the defense of Jackson, Miss.; and in 1863-'65 commanded the Confederate military district of the Indian Territory, and was promoted major general. After the war he resumed law practice at his home. In 1874 and 1881 he was elected to the United States Senate as a Democrat. In the Senate he was chairman of the Committee on Post Offices and Post Roads and of the select committee to inquire into claims of citizens of the United States against Nicaragua.

**Merriam, Augustus Chapman**, educator, born in Locust Grove, N. Y., May 30, 1843; died in Athens, Greece, Jan. 19, 1895. He was graduated at Columbia College in 1866, and was tutor in Greek and Latin there in 1868-'80, Adjunct Professor of Greek in 1880-'89, and Professor of Greek Archæology and Epigraphy from 1889 till his death. He was also at the time of his death the senior active professor in the School of Philosophy and one of the senior instructors in the School of Arts of the college. In 1886-'87 he was President of the American Philological Association; in 1887-'88 was director of the American School of Classical Studies at Athens; and in 1891-'94 was President of the New York Society of the Archæological Institute of America. He superintended excavations at Sigow and Icaria, and by his investigations in 1888 determined the birthplace of Mespis. He published numerous papers on inscriptions in "The American Journal of Philology" and "The American Journal of Archæology"; editions of Books VI, VII, and VIII of the "Odyssey," and Books VI and VII of "Herodotus"; and, among other writings, "The Greek and the Latin Inscriptions on the Obelisk Crab in Central Park" (1883) and "The Law Code of Gortyna in Crete—Text, Translation, and Comment" (1886).

**Miles, Henry Adolphus**, clergyman, born in Grafton, Mass., May 30, 1809; died in Hingham, Mass., May 31, 1895. He was graduated at Brown University in 1829, and at Harvard divinity school in 1832; was ordained to the ministry of the Unitarian Church in Hallowell, Me., in 1832; and continued in pastoral relations till within a few years of his death. In 1836-'53 he held a pastorate at Lowell, Mass.; in 1853-'69 was secretary of the American Unitarian Association at Boston; and in 1876-'84 was pastor at Hingham. He edited the "Quarterly Journal" in Boston, in 1854-'59, and published "Lowell as it was and is" (Lowell, 1845); "Grains of Gold" (Boston, 1854); "The Altar at Home" (1855); "Gospel Narratives" (1858); "Channing's Thoughts" (1859); "Words of a Friend" and "Picture Writing" (1870); and "The Birth of Jesus" (1878).

**Millard, Harrison**, composer, born in Boston, Mass., Nov. 27, 1829; died in New York city, Sept. 10, 1895. He received a public-school education; studied music in Italy; appeared as a tenor singer in grand opera at Florence in 1852; returned to Boston and joined the Handel and Haydn Oratorio Society in 1858; and removed to New York city and composed his song "Vive l'America" in 1859. In 1861 he enlisted as a private in the 71st New York Regiment, and while the regiment was in Washington he created a sensation by singing "Vive l'America" at a social gathering composed chiefly of Southerners. President Lincoln, on being informed of the incident, sent for the composer, and, after congratulating him on his patriotism, commissioned him a 1st lieutenant in the 19th Infantry. He served at various times as aid-de-camp, division commissary, and division inspector on the staffs of Gens. Rousseau, Rosecrans, and Inness



H. Palmer; was wounded at Chickamauga, Sept. 19, 1863, and resigned from the army soon afterward. Returning to New York, he was appointed to a place in the customhouse, where he remained till 1885. During all this time he carried on his work as a composer, writing masses and vespers and many songs, including "Waiting," "When the Tide comes in," "Under the Daisies," and "Say not Farewell." His "Waiting" is the test song used in the Conservatory of Music in Paris. He also composed the grand opera "Leah." During the season of 1894 he traveled with his daughter, Marie Millard, prima donna of the Sphinx Opera Company.

**Miller, John**, clergyman, born in Princeton, N. J., April 6, 1819; died there April 14, 1895. He was graduated at Princeton in 1836, and began preparing for a professorship in natural philosophy, but in consequence of a religious revival determined to enter upon the ministry, and was graduated at the theological seminary in 1842. In the following year he was ordained pastor of the Presbyterian church in Frederick City, Md.; in 1850 was settled over the Vine Street Church in Philadelphia and in 1855 removed to Lexington, Va. He served during a part of the civil war in the Confederate army, and from 1863 till 1871 was pastor of the Washington Street Presbyterian Church in Petersburg, Va. Returning to Princeton in the last year, he devoted himself to original investigations in theological matters. As results he published a "Commentary on Proverbs" (New York, 1863); "Fetich in Theology" (1874); "Metaphysics; or, The Science of Perception" (1875); and "Questions awakened by the Bible." He was tried in May, 1877, by the New Brunswick Presbytery, on a charge of publicly denying and assailing important doctrines in the Confession of Faith and the catechisms of the Presbyterian Church, and was suspended from the ministry. He appealed to the Synod of New Jersey, and finally to the General Assembly, and the latter body modified his sentence so as to permit him to withdraw from the Presbyterian Church instead of being deposed. He then went to Plainsboro, near Princeton, which was destitute of church accommodations, built a church at his own expense, and soon gathered a large congregation. In 1880 he built a second church, at Princeton; subsequently erected a third one, at Monmouth Junction; and in May, 1893, purchased a building in New Brunswick which had been occupied by a Baptist congregation and began preaching there in March following. All these churches were conducted according to the doctrines of the Cumberland Presbyterian Church.

**Miner, Alonzo Ames**, clergyman, born in Lempster, N. H., Aug. 17, 1814; died in Boston, Mass., June 14, 1895. He was educated in public schools and academies in New Hampshire and Vermont, and began teaching when sixteen years old. In June, 1839, he was ordained as a Universalist clergyman at Methuen, Mass.; in 1842 removed to Lowell, where he distinguished himself by combating the rationalistic influence of Theodore Parker; in 1848 succeeded E. H. Chapin as associate of the Rev. Hosea Ballou, whom he succeeded, and held this charge nominally till his death, though retiring from the active pastorate in 1891. In early life he was elected an overseer of Harvard College by the Legislature; was appointed a member of the State Board of Education by three different governors, serving in all for twenty-four years; for nearly twenty-one years was chairman of the Board of Visitors of the State Normal Art School; and for twenty years was President of the Massachusetts Temperance Alliance. He was a founder of Tufts College, of which he was president from July, 1862, till November, 1874. Through life he was active in many philanthropic and patriotic enterprises and in rescue work of various kinds, and was the projector of the Universalist Publishing House in Boston. He was the Prohibition candidate for Governor in 1878. Besides editing "The Story of Bethlehem" he published books including "Bible Exercises" (1854, 1884) and "Old Forts taken" (1878,

1885). He had executed a bond in favor of Tufts College for \$40,000 for the construction of Miner Theological Hall, and in his will, leaving all his property in trust to his widow, he expressed a desire that, if she did not otherwise dispose of the property, she should give \$2,000 each to the Second Universalist Society, Boston; Union Publishing House, Boston; Massachusetts Convention of Universalists; Goddard Seminary, Barre, Vt.; Dean Academy, Franklin, Mass.; and Westbrook Universalist Society; and the residue of the estate, about \$30,000, to Tufts College. The widow died on July 27, 1895, and bequeathed the bulk of the property to her relatives. In October following all the institutions mentioned in Dr. Miner's will joined with the trustees of Tufts College in an attempt to set aside the widow's will.

**Minor, John Barbee**, jurist, born in Louisa County, Virginia, June 2, 1813; died in Charlottesville, Va., July 29, 1895. He was educated at Kenyon College, Ohio, and at the University of Virginia, where he was graduated in 1833. He entered on the practice of law at Buchanan, Va., but in 1840 removed to Charlottesville. In 1845 he was elected Professor of Law at the University of Virginia, and for several years had entire charge of the Law School; subsequently on the division of its work, he took the chair of Common and Statute Law. During the civil war he had sole charge of the school. From 1870 till his death he also conducted a summer law school. He was author of "The Virginia Report of 1799-1800" (Richmond, 1850); "Synopsis of The Law of Crimes and Punishments" (1869); and "Institutes of Common and Statute Law" (several editions).

**Moore, Gideon E.**, chemist, born in 1842; died in New York city, April 13, 1895. He was graduated at Yale in 1861; became assayer of the Gould and Curry mine in Nevada; and, going abroad to continue his studies, was graduated at Heidelberg with the highest honors, and spent considerable time in the laboratories of Leipzig, Berlin, Wiesbaden, and Pesth. On his return he opened a laboratory in New York. Dr. Moore was the chief Government expert in the colored-sugar suit in Baltimore in 1877, and in the suits tried in New York in 1880.

**Morris, John Gottlieb**, clergyman, born in York, Pa., Nov. 14, 1803; died in Lutherville, Md., Oct. 10, 1895. His father was a surgeon in the Revolutionary War. The son was partially educated at Princeton, where he was awarded a prize in oratory, and was graduated at Dickinson College in 1823. In theology he was graduated at Princeton in 1826, and then continued his studies in the new seminary at Gettysburg. In October, 1826, he was licensed, and accepted a call to the First English Lutheran Church of Baltimore, where he remained until June 1, 1860. During his long pastorate the church building was remodeled and enlarged, and two other congregations were organized out of the First Church. He was an intimate friend of George Peabody, was designated as one of the trustees of the Peabody Institute, and in 1860 became its librarian. He was pastor of the Third English Lutheran Church, Baltimore, in 1864-'73, and of the Lutheran Church at Lutherville, Md., in 1875-'85. He was the principal founder of the College for Women at Lutherville in 1853, and also of the town itself. He was lecturer on natural history in Pennsylvania College, Gettysburg, Pa., from 1834 until his death, on pulpit eloquence and the relation of science and revelation in the theological seminary at the same place from 1874, and delivered numerous lectures in the Smithsonian Institution, Washington, and was for a long period Professor of Natural History in the University of Maryland. He edited the "Lutheran Observer" in 1823-'34; was secretary of the General Synod in 1839; president of the same body in 1843, and again in 1883; and president of the First Lutheran Church Diet, held in Philadelphia in 1877. He devoted himself to entomology and microscopy, and contributed numerous articles to scientific journals. He was a frequent contributor to the more important Lutheran periodicals, was an earnest student



of Lutheran history, and did much to cultivate the taste for history in others. He was the founder of the Lutheran Historical Society, whose library at Gettysburg is one of the most valuable in the country, due chiefly to his indefatigable industry in the collection of historical material. He was the founder of the Academy of Lutheran Church History, whose only president he was. He was an enthusiastic Luther student, collecting and collating everything pertaining to Luther on which he could lay his hands; and he collected the best Luther library in this country. Besides many translations and addresses, review and magazine articles, tracts and scientific articles, he published "Catechumen's and Communicant's Companion" (Baltimore, 1831); "Henry and Antonio" of Bretschneider, translated from the German (Philadelphia, 1831; altered ed., entitled "To Rome and Back Again," 1853); "Catechetical Exercises on Luther's Catechism," adapted from the German (Baltimore, 1832); Von Leonard's "Lectures on Geology" (tr., 1839); "Popular Exposition of the Gospels" (2 vols., 1840); "Life of John Arndt" (1853); "Life of Martin Behaim, the German Cosmographer" (1856); "Life of Catherine de Bora" (1856); "The Blind Girl of Wittenberg" (Philadelphia, 1856); "Quaint Sayings and Doings concerning Luther" (1859); "Catalogue of the Lepidoptera of North America" (1860); "Synopsis of the Diurnal Lepidoptera of the United States" (Washington, 1862); "The Lords Baltimore" (Baltimore, 1874); "Bibliotheca Lutherana" (Philadelphia, 1876); "Fifty Years in the Lutheran Ministry" (1878); "A Day in Capernaum," translated from Franz Delitzsch (1879); "The Diet of Augsburg" (1879); "Augsburg Confession and the Thirty-nine Articles" (1879); "Journeys of Luther" (1880); "Luther at Wartburg and Coburg" (1882); "Life of Luther," translated from Koestlin (1883); "Lutheran Doctrine of the Lord's Supper" (1884); "Memoirs of the Stork Family" (1884).

**Morris, Luzon Burritt**, jurist, born in Newton, Conn., April 16, 1827; died in New Haven, Conn., Aug. 22, 1895. He was graduated at Yale in 1854, and was admitted to the bar of New Haven County in 1856. In 1855, 1856, 1870, 1876, 1880, and 1881 he was elected to the State House of Representatives; in 1871 was elected to the State Senate and was president of that body; in 1857-'63 was probate judge of the New Haven district; and in 1885 was appointed chairman of a commission to revise the probate laws of the State. He had early identified himself with the Democratic party, and in 1888 was its candidate for Governor. He received 75,174 votes, a plurality of 1,415, but failed to receive a majority of all votes cast. In 1890 he was again candidate for Governor, and his party friends declared that he had a majority of 26 and a plurality of 3,688 over his Republican opponent. A deadlock followed. The contest for the office was taken from one court to another, and was held in litigation till the expiration of the term. In 1892 Judge Morris was a third time his party's candidate for the office, and was elected. He was administrator of the estate of Daniel Hand, the philanthropist.

**Munger, George G.**, lawyer, born in Morrisville, Madison county, N. Y., in 1828; died in New York city, March 14, 1895. He was graduated at Yale in 1848, took the course at the Harvard Law School, completed his readings in Rochester, and was admitted to the bar there in 1850. Soon afterward he was elected a supervisor of Monroe County, and before he was thirty years old he was elected county judge for a term of four years. On retiring from the bench he was twice elected a State Senator as a Republican. Subsequently he became a Democrat. He formed a partnership with Sanford E. Church, afterward chief justice of the Court of Appeals, and resumed the practice of law in Rochester. About 1880 he removed to New York city and formed a partnership with Martin T. McMahon, and later with James A. Deering. He published a work on "Application of Partial Payments."

**Nason, Henry Bradford**, chemist, born in Foxboro, Mass., June 22, 1831; died in Troy, N. Y., Jan. 18, 1895. He was graduated at Amherst College in 1855; took a course in chemistry and the natural sciences at the University of Göttingen; and in 1858 was appointed Professor of Natural History at Rensselaer Polytechnic Institute in Troy, and also Professor of Chemistry and Natural Sciences in Beloit College, Wisconsin. In 1866 he was called to the chair of Chemistry and Natural Science in the Polytechnic Institute, which he held till his death. He was a juror at the World's Fair in Paris in 1878 by the United States Government for the department of mineralogy and metallurgy, and since 1880 had occupied the place of chemist to the Standard Oil Company. He received the degree of Ph. D. for original investigations on the formation of ethers from the University of Göttingen in 1857. Since 1880 he had devoted much attention to methods for improving the treatment of crude oil and for abating the nuisances arising from the products of oil refineries. Among his numerous publications are "Table of Reactions for Qualitative Analysis" (Troy, 1865); a translation of Wohler's "Handbook of Mineral Analysis" (Philadelphia, 1868); "Table for Qualitative Analysis in Colors" (Troy, 1870); and an edition of Elderhorst's "Blowpipe Analysis" (1873; revised ed., 1880).

**Neumoege, Berthold**, entomologist, born in Germany in 1844; died in New York city, Jan. 21, 1895. He was a broker in New York for many years. In early life he developed a desire to make the largest and most beautiful collection of butterflies in the world, and for more than twenty years all his leisure was devoted to this object. He received choice specimens from Africa through Dr. Livingstone, and others through Henry M. Stanley, Lieut. Schwatka, members of the Greely Relief Expedition, and from personal friends in various parts of the world. He kept 2 men employed in receiving and shipping specimens in exchange with other collectors, and in a single consignment he shipped 20,000 butterflies to Europe. His collection contained 100,000 rare specimens. He is known to have paid \$160 for a single specimen. His collection was exhibited in New York city in April, 1888. There are but two known collections in the world that exceed in number and variety this one; one is owned by the British Museum, and the other is in Paris.

**Newton, Henry J.**, manufacturer, born in Connecticut in 1823; died in New York city, Dec. 23, 1895. For many years he was a member of the firm of Leight, Bradbury & Newton, piano manufacturers, and at the time of his death was President of the Newton-Merritt Bronze Company. He was president of the photographic department of the American Institute for twenty years, the inventor of the dry-plate process of photography, President of the Camera Club of New York, and a member of the Governing Board of the Brooklyn Institute. The top floor of his residence was fitted up as a laboratory, where he studied chemistry, physics, and astronomy, and during the last twenty years of his life he gave much time to investigations in spiritualism. In the summer of 1875 he became chairman of a committee to investigate the phenomena of an alleged materialization by a combustion of aromatic gum and herbs. The committee met at Mr. Newton's house, an organization was completed, and the name of "The Theosophical Society" was adopted. Subsequently the idea was taken up by Henry S. Olcott and Mme. Blavatsky, and expanded into a system of occultism, for which an East Indian origin was claimed. Mr. Newton claimed that the Theosophical Society originated in his house and not in Asia, that all the Indian accessories were an afterthought, and that they constituted a fiction.

**Newton, John**, soldier, born in Norfolk, Va., Aug. 24, 1823; died in New York city, May 1, 1895. He was graduated at West Point in 1842, standing second in a class of 56, and was commissioned 2d lieutenant of engineers, and assigned to duty as Assistant Pro-



fessor of Engineering in the Academy. Subsequently he served in the construction of fortifications and other works along the Atlantic and Gulf coasts until 1860, except during 1858, when he was chief engineer



of the Utah expedition. On July 1, 1856, he was promoted captain, and at the beginning of the civil war he was chief engineer of the Department of Pennsylvania, holding later a like office in the Department of the Shenandoah. From August, 1861, till March, 1862, he was engaged in constructing the defenses of Washington, D. C., where he also had a brigade, having been made brigadier general

of volunteers on Sept. 23, 1861. During the Peninsula campaign he served with the Army of the Potomac, and was engaged in the actions at West Point, Gaines's Mill, and Glendale. He continued with his command in the Maryland campaign, participating in the forcing of Crampton's Gap and the battle of Antietam. In the storming of Marye Heights at the battle of Fredericksburg he led a division. He was made major general of volunteers on March 30, 1863, and took part in the Chancellorsville campaign. In the Pennsylvania campaign he succeeded to the command of the 1st Corps on July 2, 1863, after the death of Gen. John F. Reynolds, and held it during the last days of the battle of Gettysburg. He was brevetted colonel for services in that action. He was given the 2d division of the 4th Corps of the Army of the Cumberland under Gen. Oliver O. Howard in May, 1864, and participated in the invasion of Georgia, taking part in the engagements that culminated in the capture of Atlanta in September. Later, he had various districts in Florida until January, 1866, when he was mustered out of the volunteer service after receiving the brevets of major general of volunteers, and that of brigadier general and major general in the regular army. He received his regular promotion as lieutenant colonel of engineers on Dec. 28, 1865, and in April, 1866, was made superintending engineer of the construction of the defenses on the Long Island side of the Narrows entrance to New York harbor; also of the improvements of Hudson river and of the fort at Sandy Hook. His most brilliant achievement was the removal of the dangerous rocks at Hell Gate. This compelled the solution of novel engineering problems and the invention of new apparatus. He blew up Hallett's Reef on Sept. 24, 1876, and Flood Rock on Oct. 10, 1885 (see "Annual Cyclopædia" for 1885, page 470 *et seq.*). Meanwhile the proposed enlargement of Harlem river, the improvements of Hudson river from Troy to New York, and of the channel between New Jersey and Staten Island and of the harbors of Lake Champlain were placed under his direction. On June 30, 1879, he was promoted colonel, and on March 6, 1884, was made chief of engineers with the rank of brigadier general, holding that place until his retirement on Aug. 27, 1886. He was appointed Commissioner of Public Works in New York city Aug. 31, 1887, which office he held until Nov. 24, 1888. During his administration politics were entirely eliminated from the department, and many reforms instituted, notably one that no removals should be made except for sufficient cause.

**Northend, Charles**, educator, born in Newbury, Mass., April 2, 1814; died in New Britain, Conn., Aug. 7, 1895. He was educated at Amherst College; became an assistant teacher in Dummer Academy; taught in South Danvers; was master of the Epps School in Salem for twelve years; and was superintendent of public schools in Danvers for three years. In 1855 he removed to New Britain, and for eleven years was

superintendent of the public schools of that town. For several years he traveled over the State, holding teachers' meetings and lecturing, and he also made a tour of New England, New York, and Pennsylvania in the interests of public education. He was a member of the American Institute of Instruction for fifty years, and its president in 1863, and was also President of the Essex County Teachers' Association for a number of years. Prof. Northend published numerous works, including "The Teacher and the Parent"; "Teachers' Associations"; "Annals of American Institutions of Instruction"; "Memory Gems"; "Choice Thoughts"; and "Life of Elihu Burritt."

**Oliver, James Edward**, mathematician, born in Portland, Me., July 27, 1829; died in Ithaca, N. Y., March 27, 1895. He was graduated at Harvard in 1849, and was the class poet of his year. While in Cambridge he came under the influence of Benjamin Peirce, who always regarded his student as "the ablest of American mathematicians." Through the influence of Peirce an appointment was secured for Oliver in the office of the "American Ephemeris and Nautical Almanac," and there he remained until 1871, when he was called to an Assistant Professorship of Mathematics in Cornell University. On the death of Evan W. Evans, in 1873, he succeeded to the chair, and remained thereafter head of the department of mathematics until his death. As a teacher, he was thorough, painstaking, considerate, and inspiring by his wealth of suggestiveness and depth of insight. He was especially noted for the clearness with which he presented difficult problems to his classes. In 1872 he was elected to the National Academy of Sciences. He was the author of "A Treatise on Trigonometry" (New York, 1886).

**O'Gorman, Richard**, jurist, born in Dublin, Ireland, in 1821; died in New York city, Feb. 28, 1895. He was the son of a wholesale woolen merchant; was educated in a Jesuit school and, as far as a Catholic youth could go at that time, at Trinity College, Dublin; and, with his father, became a member of the Repeal Association formed in 1840. Richard, with a number of his associates, withdrew from the association, and organized the Young Ireland party in 1846; and after the uprising in 1848 he, with Thomas Francis Meagher, John Mitchell, and others, was indicted for high treason. O'Gorman made his escape in disguise, traveled on the Continent, and afterward came to the United States, where he joined John Dillon in forming a law partnership in New York city. Mr. O'Gorman continued to practice till his appointment as corporation counsel, which office he held through two terms. In 1881 he was elected judge of the Superior Court, but his seat was contested by an appointee of the Governor. He submitted the issue to a trial, and on the disagreement of the jury withdrew from the contest. In 1883 he was elected a judge of this court, and served till 1890, when he retired after reaching the age limit. Judge O'Gorman was a popular speaker. Soon after the fall of Fort Sumter he delivered a memorable address in New York city full of fervor for the Union cause; in 1869 he was the orator at the memorial service for Thomas Francis Meagher; and in 1879 he delivered the oration at the celebration of the hundredth anniversary of the birth of Thomas Moore.

**O'Sullivan, John Louis**, linguist, born on a British man-of-war, in the Bay of Gibraltar, in November, 1813; died in New York city, March 24, 1895. His grandfather was a major general in the British army, and his father was United States consul to the Barbary States. At the time of his birth his parents were residing in the garrison, but on the outbreak of the plague the British admiral invited them to his ship. Mr. O'Sullivan was educated at the military school of Sorèze, France, the Westminster School, London, where he gained a gold medal for proficiency in Greek, and at Columbia College, New York city. In the early forties he was elected to the New York Legislature, where he distinguished himself by earnest efforts to secure the passage of a bill abolishing capi-



tal punishment. He became United States minister to Portugal in 1854, and held the office till 1863. He was noted for his mastery of ancient and modern languages, was an intimate friend of Nathaniel Hawthorne, and at the unveiling of Bartholdi's Statue of Liberty, in New York harbor, he delivered an address in French that was highly commended by the French visitors.

**Paine, Timothy Otis**, Egyptologist, born in Winslow, Me., Oct. 13, 1824; died in Boston, Mass., Dec. 6, 1895. He was graduated at Waterville College, Maine, in 1847; became pastor of the Swedenborgian church at Elmwood, Mass., in 1856, and for many years after 1866 was Professor of Hebrew in the theological school of the New Jerusalem Church in Boston. He was an enthusiastic student of Hebrew and the ancient languages, and he spent his leisure in unraveling the mysteries of hieroglyphics, becoming an acknowledged authority on Egyptology. Among his publications was "Solomon's Temple; or, The First Tabernacle," in the preparation of which he spent thirty-five years, and in which he completely reconstructed the conception of this ancient edifice.

**Parker, Ely Samuel**, military officer, born in the Indian reservation, Tonawanda, N. Y., in 1828; died in Fairfield, Conn., Aug. 31, 1895. He was a full-blooded Seneca Indian, and chief of the Six Nations. He took a course at the Rensselaer Polytechnic Institute, and studied law; but as Indians had then no claims to citizenship he could not be admitted to the bar. Subsequently he received an appointment in the engineer corps of the United States army. While living in Galena, Ill., he became intimate with Ulysses S. Grant. At the beginning of the civil war he entered the National army; soon afterward was appointed by Gen. Grant one of his staff officers, and during the latter part of the war was military secretary to that commander. He was brevetted brigadier general of volunteers, Apr. 9, 1865, and captain, major, lieutenant colonel, colonel, and brigadier general in the regular army, Mar. 2, 1867. After the war Gen. Parker resumed civil engineering, and in 1869 was appointed Commissioner of Indian Affairs. He resigned this office in 1871, and in 1876 received an appointment in the police department of New York city, where he superintended the repairs to the buildings of the department and purchased its supplies. Gen. Parker owned and always kept the gold pen used by Gen. Grant in signing the terms at Appomattox.

**Parsons, Lewis Eliphalet**, lawyer, born in Broome County, New York, April 28, 1827; died in Talladega, Ala., June 8, 1895. He was educated in the public schools, studied law, and in 1840 settled in Talladega, Ala. He was elected to the Legislature as a representative of the State-aid and internal-improvement movement in 1859, and was again sent to the Legislature in 1863, when he opposed the militia system of the State because the Confederate Government had full power there. On June 21, 1865, he was appointed Provisional Governor of Alabama, and he applied himself to the work of reconstruction till December, when he was elected United States Senator, but he was refused the seat because of the opposition then in Congress to the reconstruction policy of the President. He afterward served several terms in the Legislature, and was Speaker of the House in 1872.

**Perkins, Granville**, artist, born in Baltimore, Md., Oct. 16, 1830; died in New York city, April 18, 1895. He showed aptitude for art at an early age, receiving much encouragement from his parents, who were painters. For several years he was engaged in scene painting in Philadelphia, New York, Baltimore, and Richmond; in 1851 began contributing sketches to illustrated papers; in 1855-'60 was a draughtsman for the publications of Frank Leslie; and subsequently was similarly employed for several years by Harper & Brothers. After withdrawing from the establishment of the latter, he furnished a large number of illustrations for "Picturesque America" and other publications, showing a special fondness for marine views. For many years before his death he applied

himself almost wholly to painting, treating particularly tropical and marine views, in which he attained a high reputation.

**Perkins, William Rufus**, poet, born in Erie, Pa., Sept. 1, 1847; died there Jan. 28, 1895. His early studies were conducted by his mother and by an accomplished teacher for many years resident in the family. He was graduated at Western Reserve College as valedictorian in 1868, and in 1869 he returned to that college as tutor, remaining three years. Subsequently he studied law and was admitted (1878) to the bar of Erie County, Pennsylvania. In 1879 he was called to Cornell University as Assistant Professor of Latin and Greek, being transferred in 1882 to the department of history. In 1885 he studied in Europe the modes of teaching in the universities, and on his return, in 1887, he was called to the chair of History in Iowa State University. In the spring of 1888 he was a delegate to the eighth centenary of the University of Bologna, Italy. He attended that *fête* and spent a few months in traveling in England and France, returning to the university in the autumn. In 1880 he privately published, under a pen name, the poem of "Eleusis," and in 1892 his selected poems, under the misleading title of "Eleusis and Lesser Poems," were published in Chicago. Two of his historical monographs—"History of the Trappist Abbey of New Melleray" and "History of the Amana Society"—were published by the State University of Iowa. His manners were reserved and unassuming. His untimely death, apparently at the beginning of a poetical career, was a great loss.

**Perry, Rufus Lewis**, clergyman, born in Smith County, Tennessee, about 1833; died in Brooklyn, N. Y., June 18, 1895. He was the son of a slave, who escaped to Canada. The boy was sold in 1852, but subsequently made his escape and undertook to find his father. Rufus was graduated at Kalamazoo University in 1861, and was ordained and installed pastor of the Second Baptist Church in Ann Arbor, Mich., in October of that year. In 1865 he engaged in general missionary work; afterward was superintendent of a freedmen's school; was for ten years corresponding secretary of the Consolidated American Baptist Missionary Convention; and for many years editor of "The National Monitor." He was considered one of the best scholars the negro race has produced; was the author of numerous works requiring much research; and was an accomplished linguist, especially in Hebrew, Sanskrit, French, and German. In 1887 he delivered a scientific lecture on "Light" before the State University at Louisville, Ky. Among his publications is "The Cushite; or, The Children of Ham as seen by Ancient Historians and Poets."

• **Phillips, Philip**, singing evangelist, born in Chautauque County, New York, Aug. 13, 1834; died in Delaware, Ohio, June 25, 1895. In youth he studied music with Lowell Mason, and in 1853 became a conductor of singing schools. In 1860 he united with the Methodist Episcopal Church, the same year publishing his first musical composition, entitled "Early Blossoms." In 1861 he opened a music store in Cincinnati, and published "Musical Leaves." During the civil war he held services of song in the principal cities of the North to aid the Christian Commission. After the war he settled in New York. In 1868 he went to England, and held services in its principal cities, and prepared for the British Sunday-school Union "The American Sacred Songster," of which over 1,000,000 copies were sold. On leaving England he made a singing tour of the world, holding religious services in the Sandwich Islands, Australia, New Zealand, Palestine, Egypt, and India, and in the large cities of Europe. He published many collections of songs, chiefly religious, including "Spring Blossoms" (1865); "Singing Pilgrim" (1866); "Day-school Singer" (1869); "Gospel Singer" (1874); "Singing Sermons" (1877); "Singing Pilgrimage around and throughout the World," with a biographical sketch (1880); and "Six Song Services with Connective Reading" (1892).



**Pilling, James Constantine**, bibliographer, born in Washington, D. C., Nov. 16, 1846; died at Olney, Md., July 26, 1895. He was educated at Gonzaga College, and from 1875 to 1880 was a member of the Rocky Mountain surveying expedition under Major Powell. His ethnological researches began then, and until his death his time was mainly given to linguistic and ethnological work. He was considered a high authority on North American Indian bibliography, and his publications on this subject are very numerous. Among them are "Bibliography of the Eskimo Language" (Washington, 1887); "Bibliography of the Siouan Languages" (1887); "Bibliography of the Iroquoian Languages" (1888).

**Pitcher, Thomas Gamble**, military officer, born in Rockport, Ind., Oct. 23, 1824; died at Fort Bayard, New Mexico, Oct. 21, 1895. He was graduated at West Point, and commissioned brevet 2d lieutenant, 5th Infantry, in 1845; was promoted 2d lieutenant, 8th Infantry, Sept. 21, 1846; 1st lieutenant, June 26, 1849; captain, Oct. 19, 1858; major, 16th Infantry, Sept. 19, 1863; and colonel, 44th Infantry, July 28, 1866; was assigned to the 1st Infantry, Dec. 15, 1870; and was retired June 28, 1878. In the volunteer service he was commissioned a brigadier general, Nov. 29, 1862, and was mustered out of the service April 30, 1866. During his military career he was brevetted 1st lieutenant in the regular army, Aug. 20, 1847, for gallantry at Contreras and Churubusco; major, Aug. 9, 1862, for gallantry at Cedar Mountain, Va.; and lieutenant colonel, colonel, and brigadier general, all on March 13, 1865, for meritorious services during the war. In 1862 he served in the defense of Harper's Ferry and in the Virginia campaign, receiving a wound at Cedar Mountain; and from Jan. 10, 1863, to the close of the war, because of his wound, was on duty as commissary and provost marshal. In 1866-'71 he was superintendent of the United States Military Academy; in 1871-'77 was governor of the Soldiers' Home in Washington, D. C.; and in 1880-'87 was superintendent of the New York Soldiers' and Sailors' Home.

**Pixley, Francis Morrisson**, journalist, born in Westmoreland, N. Y., Jan. 31, 1825; died in San Francisco, Cal., Aug. 11, 1895. He was graduated at Hamilton College; studied law in Rochester, N. Y., and was admitted to the bar in Michigan. In the spring of 1849 he set out on muleback for the California mines, arriving in El Dorado County in September following, and worked in the mines till 1851, when he went to San Francisco and entered into a law partnership with Judge Roderick N. Morrisson, an uncle. Soon afterward he was elected city attorney; in 1858 he was elected to the Assembly as a Republican; in 1861 became Attorney General of the State; and in 1869 was appointed United States district attorney for California, an office he soon resigned. In 1877 he retired from active politics, and with Frederick M. Somers founded the "Argonaut," a literary weekly.

**Poe, Orlando Metcalfe**, military officer, born in Navarre, Ohio, March 7, 1832; died in Detroit, Mich., Oct. 2, 1895. He was graduated at West Point and commissioned brevet 2d lieutenant of topographical engineers in 1856, and was promoted 2d lieutenant, Oct. 7 following; 1st lieutenant, July 1, 1860; captain of engineers, March 3, 1863; major, March 7, 1867; lieutenant colonel, June 30, 1882; and colonel, July 23, 1888. In the volunteer army he was commissioned colonel of the 2d Michigan Infantry, Sept. 16, 1861; was promoted brigadier general, Nov. 29, 1862; and was mustered out of the service, March 4, 1863. During his military career he was brevetted major in the regular army, July 6, 1864, for the siege of Knoxville; lieutenant colonel, Sept. 1 following, for the capture of Atlanta; colonel, Dec. 21, for the capture of Savannah; and brigadier general, March 13, 1865, for meritorious services in the campaign terminating with the surrender of the Confederate army under Gen. Joseph E. Johnston. He was chief topographical engineer of the Department of the Ohio in the early part of 1816; was on the staff of Gen. McClellan at the battle of Rich Mountain; commanded his Michigan re-

giment in the defense of Washington and in the principal battles of the Virginia Peninsula campaign; took part in the battle of Fredericksburg; in the early part of 1863 commanded a division of the 9th Corps; and later became chief engineer of the 23d Corps of the Army of the Ohio. In Gen. Sherman's Atlanta campaign and subsequent march to the sea, and through the Carolinas, Gen. Poe was chief engineer of his army. After the war he was engineer secretary of the Lighthouse Board in 1865-'70; engineer in charge of the construction of the Spectacle Reef lighthouse on Lake Huron in 1870-'73; aid-de-camp to Gen. Sherman, and also engineer in charge of the river-and-harbor works between Lake Erie and Lake Superior in 1873-'84; and at the time of his death was chief engineer of the Northwest District. His work in the lake region included improvements on Lakes Erie, Superior, Huron, and Michigan, St. Mary's Falls Canal, and the dam on the rapids of St. Mary's river. He also designed and constructed the famous Stannard Rock Light and the great lock at Sault Ste. Marie. While inspecting the latter work he met with an accident that led to his death.

**Poole, Reuben Brooks**, librarian, born in Rockport, Mass., in 1834; died in New York city, April 6, 1895. He was brought up on a farm, and was graduated at Brown University in 1857. He spent a year teaching in the Rockport high school, and in 1860-'64 he was a teacher in the House of Refuge at Philadelphia. In January, 1864, he was appointed librarian of the Young Men's Christian Association in New York city, and he held this place till his death. Mr. Poole had made a special study of old Bible manuscripts, had written numerous articles on that and other religious topics, and had been President of the State Librarians' Association.

**Pope, Franklin Leonard**, electrician, born in Great Barrington, Mass., Dec. 2, 1840; died there Oct. 13, 1895. He became a telegraph operator in 1857, assistant engineer of the American Telegraph Company in 1862, and was appointed to a similar office in the Russo-American Telegraph Company in 1864.

While in the last service he made the first exploration of the country between British Columbia and Alaska, surveying a route for an overland telegraph. Subsequently he established himself in New York city as an electrical engineer and expert. He was one of the inventors of the "ticker" used for telegraphing exchange quotations, and was the sole inventor of the rail circuit for automatically controlling electric block signals now in use on many railroads. Since 1884 he had been editor of the "Electrical Engineer." He was President of the American Institute of Electrical Engineers in 1885. At the time of his death he was superintending the reconstruction of the electric plant at Great Barrington. To facilitate his work, he had placed in the cellar of his house a large and powerful converter. On the night of his death, when the power was turned on, he visited the cellar to adjust the bearings, and by some means his person came in contact with some of the wires, and he was instantly killed by a current of 3,000 volts. Mr. Pope contributed numerous technical and historical articles to the periodical press, and published "Modern Practice of the Electric Telegraph" (1871) and "Life and Work of Joseph Henry" (1879).





**Porcher, Francois Peyre**, physician, born in St. John's, Berkeley, S. C., Dec. 14, 1825; died in Charleston, S. C., Nov. 19, 1895. He was graduated at South Carolina College in 1844, and at the State Medical College in 1847; established himself in Charleston, and remained there till his death. During the civil war he was in charge of Confederate hospitals at Norfolk and Petersburg, Va. He was President of the South Carolina Medical Association in 1872; was one of the editors of the "Charleston Medical Journal and Review," having charge of the volumes published in 1850-'55 and in 1873-'76. For many years he had devoted his leisure to the study of botany, and had written much upon that and medical subjects. He was author of "A Medio-Botanical Catalogue of the Plants and Ferns of St. John's, Berkeley, South Carolina" (Charleston, 1847); "A Sketch of the Medical Botany of South Carolina" (Philadelphia, 1849); "The Medicinal, Poisonous, and Dietetic Properties of the Cryptogamic Plants of the United States" (New York, 1854); "Illustrations of Disease with the Microscope and Clinical Investigations aided by the Microscope and by Chemical Reagents" (Charleston, 1861); and "Resources of the Southern Fields and Forests" (Richmond, 1863; revised edition, Charleston, 1869). For many years prior to his death he was Professor of *Materia Medica* and Therapeutics in the State Medical College of South Carolina.

**Post, Philip Sidney**, lawyer, born in Florida, Orange County, N. Y., March 19, 1833; died in Washington, D. C., Jan. 6, 1895. He was graduated at Union College in 1855, studied at the Poughkeepsie Law School, was admitted to the bar of Illinois in 1856, and settled in Galesburg. In 1861 he entered the National army as 2d lieutenant, 59th Illinois Infantry; was promoted for gallant services to the rank of brevet brigadier general; and at the close of the war was in command of the district of western Texas. He was appointed consul at Vienna in 1866, was consul-general for Austria-Hungary in 1874-'79, and was elected to Congress from the 10th Illinois District in 1886-'88 and 1894 as a Republican.

**Prescott, Benjamin Franklin**, lawyer, born in Epping, N. H., Feb. 26, 1833; died there Feb. 22, 1895. He was graduated at Dartmouth in 1856, taught in Epping, then studied law, and was admitted to the bar in 1859. In 1861 he became editorially connected with the "Independent Democrat." Afterward he served for three years as a special agent of the United States Treasury Department, being removed during President Johnson's administration. In 1872, 1873, 1875, and 1876 he was elected Secretary of State, and in 1877 and 1878 was elected Governor of New Hampshire as a Republican.

**Raymond, Charles Atwater**, clergyman, born in New Haven, Conn., in 1822; died in West View, Va., March 5, 1895. In 1843 he was called to the pastorate of the Baptist Church at Rondout, N. Y., and in the following year went to the First Baptist Church at Newburg, where he also became principal of the female seminary. He removed to New Orleans on a call to a pastorate in 1847, and subsequently was principal of the Fuller Institute and of Edgefield Collegiate Institute, South Carolina. In the early part of the civil war he became a refugee and returned to Newburg, and during 1863-'71 he was Superintendent of Public Instruction for the Eastern District of Virginia, and he also became Governor of the National Soldiers' Home at Hampton, Va.

**Redfield, John H.**, botanist, born in Middletown, Conn., in 1815; died in Philadelphia, Pa., Feb. 27, 1895. He entered a manufactory of ear wheels in Philadelphia, becoming in time a partner. About 1855 he retired from active business, applied himself to scientific pursuits, and from that time till his death spent the greater part of his time in the rooms of the Academy of Natural Sciences. He was elected conservator of the botanical section, and undertook the work of classifying and cataloguing the specimens of the herbarium. He had completed the whole group of North American plants. He also rendered the

academy valuable service as chairman of its Publication Committee. Mr. Redfield had published a work on the flora of Mount Desert, Me.

**Remey, William R.**, naval officer, born in Iowa; died in Somerville, Mass., Jan. 21, 1895. He entered the marine corps of the United States navy as 2d lieutenant, Sept. 5, 1861; was promoted 1st lieutenant, Feb. 17, 1864; captain, June 21, 1872; and colonel, June 12, 1884; and was retired, June 4, 1892, on his own application. In 1862 and a part of 1863 he was attached to the frigate "Sabine"; in 1864 was on duty at the marine barracks at Gosport, Va.; in 1865 was attached to the receiving ship "North Carolina." He served on the "Vanderbilt" of the Pacific squadron in 1865-'67; on the receiving ship "New Hampshire" in 1868; at the marine barracks in Philadelphia in 1868-'69; and was on special duty in Washington, D. C., in 1869-'70. During 1871-'72 he served at the headquarters of the Marine Corps in Washington, D. C.; 1873-'74 was on the frigate "Colorado" of the North Atlantic squadron; and then returned to marine headquarters. As fleet marine officer he served on the South Pacific station in 1875-'76 and on the South Atlantic station in 1876-'77. In 1878-'80 he was acting judge-advocate general of the navy, and from 1880 till his retirement held the office of judge-advocate general.

**Renwick, Henry Brevoort**, civil engineer, born in New York city, Sept. 4, 1817; died there Jan. 27, 1895. He was a son of James Renwick, physicist, and a brother of James Renwick (see below). He was graduated at Columbia College in 1836; spent some time in commercial business; studied civil and mechanical engineering; entered the service of the United States Government as an assistant engineer; and was first assistant astronomer of the United States Boundary Commission in 1840-'42. In 1848 he entered the Patent Office as an examiner, and in 1855 was appointed the first United States inspector of steam vessels at the port of New York. While on engineering service for the Government, he was engaged in important works, including the breakwaters at Sandy Hook and Egg Harbor, and the survey that settled the boundary line between Maine and New Brunswick. He was probably best known as an expert in patent cases. Among the most notable cases in which he testified were the suits growing out of the invention of sewing machines, the McCormick reaper, and the Bell telephone.

**Renwick, James**, architect, born in New York city, Nov. 3, 1818; died there June 23, 1895. He was graduated at Columbia College in 1836, inherited a fondness for architecture from his father, and first engaged in civil engineering. He superintended the construction of the distributing reservoir on Fifth avenue and was an assistant engineer on the Croton aqueduct. When the vestry of Grace Church purchased the property on Broadway near Tenth street, his plans for the new building were accepted; he was placed in charge of the work, and completed the building, with the exception of the permanent spire (the first one being of wood), in 1845. He was afterward selected as architect of Calvary Church and of the Church of the Puritans, and before these were finished, on the invitation of the regents of the Smithsonian Institution, Washington, D. C., he prepared plans for their new building, which were adopted. He was also architect of the Coreoran Art Gallery in the same city. In 1853 he was invited by Archbishop Hughes to prepare plans for a cathedral to be built on Fifth avenue, and his plans were accepted. The corner stone of the cathedral was laid Aug. 15, 1858; the building was dedicated May 25, 1879; and the erection of the two towers was begun in 1887. Mr. Renwick also was the architect of the group of buildings of Vassar College, Poughkeepsie; of St. Ann's Church, Brooklyn, N. Y.; of Booth's Theater, at Sixth avenue and Twenty-third Street; the Young Men's Christian Association building; the new front of the New York Stock Exchange; several of the public buildings on Blackwell's and Randall's islands;



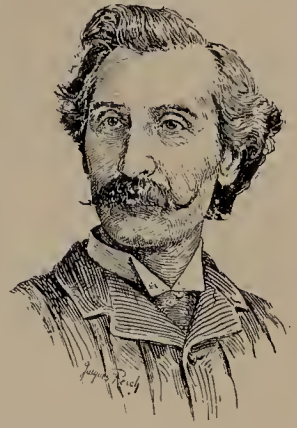
and of the restoration of the old Spanish cathedral at St. Augustine, Fla. He had also planned business and residential structures. Mr. Renwick, who was deeply interested in art in all its forms, had for several years devoted his leisure to making a collection of notable paintings by old masters, and he bequeathed to the Metropolitan Museum of Art a collection of 74 paintings, supposed to be worth \$500,000. In December following his death the trustees of the museum declined the gift, giving no reasons, but a belief gained currency that Mr. Renwick had been imposed upon in the purchase of the paintings.

**Rice, Alexander Hamilton**, merchant, born in Newton, Mass., Aug. 30, 1818; died in Melrose, Mass., July 22, 1895. His father carried on an extensive paper manufactory, in which the son passed a regular apprenticeship, subsequently receiving a collegiate education. He then entered a paper house in Boston, of which in time he became the senior member, the name being changed to Rice, Kendall & Co. After serving as a member and president of the Council, he was elected Mayor of Boston in 1855 and 1857 on a citizens' ticket, and under his administration the Back Bay improvements were begun and the City Hospital founded. He was elected to Congress as a Republican in 1858, and served 4 consecutive terms. From 1869 till 1873 he was President of the Board of Trade of Boston, and in 1876, 1877, and 1878 he was elected Governor of Massachusetts. In 1877 he aroused much unfavorable criticism by vetoing a local-option license bill, but he was re-elected the same year.

**Ridgway, Henry Bascom**, educator, born in Talbot County, Maryland, Sept. 7, 1830; died in Evanston, Ill., March 30, 1895. He was graduated at Dickinson College in 1849; joined the Baltimore Conference of the Methodist Episcopal Church immediately after leaving college, and became a circuit rider. Within a few years he was called to a small church in Baltimore, and subsequently he held pastorates in the Old High Street Church, Baltimore, in Portland, Me., in Chicago, in New York city, and in Cincinnati. In 1882 he was chosen Professor of Historical Theology in Garrett Biblical Institute, Evanston, Ill.; and from 1884 till his death he was President of the institution and Professor of Practical Theology. About two years ago he made a trip round the world and visited many mission stations in India, China, and Japan. He was the author of "The Life of Alfred Cookman" (New York, 1871); "The Lord's Land: A Narrative of Travels in Sinai and Palestine" (1876); "The Life of Bishop Edward S. Jenes" (1882); "Bishop Beverly Waugh" (1883); and "Bishop Matthew Simpson" (1885).

**Riley, Charles Valentine**, entomologist, born in London, England, Sept. 18, 1843; died in Washington, D. C., Sept. 14, 1895. His childhood was passed in Walton-on-Thames. He spent three years in the College of St. Paul, at Dieppe, France, and three more in Bonn, Prussia. He early exhibited a passion for drawing and painting, and for studying insects. He came to New York when seventeen years old, spent three years on a stock farm in Kankakee County, Ill., and then went to Chicago as a laborer in a pork-packing establishment. He was next engaged in newspaper work, and in May, 1864, went to the front with the 134th Illinois Volunteers. In 1868 he was made State Entomologist of Missouri. Of the 9 volumes of his Missouri "Reports," Charles Darwin wrote that they brought to his knowledge many valuable facts and generalizations, and the "Entomologists' Monthly Magazine," of London, remarked: "The author, in giving full scope to his keen powers of observation, in minuteness of detail, and in the skill with which he uses his pencil, and in a regard for scientific accuracy, maintains his right to be termed the foremost economic entomologist of the day." The illustrations of these reports were made at his own expense, from drawings by his own hand. During two years (1869-'70) Prof. Riley also served as associate editor of the "American

Entomologist." In 1873 an outbreak of the Rocky mountain locust or grasshopper in the Western and Northwestern States led to the creation by Congress of a commission for the investigation of the pest, and Prof. Riley, as chief of this commission, led an exploration of the entire region. In 1878 he was appointed United States Entomologist, and he filled this office till 1894, except in 1879-1880, when, at the head of the Entomological Commission, he conducted the cotton-worm investigation. On his re-appointment as United States Entomologist in 1881 the commission was transferred to the Department of Agriculture, in which the division of entomology was organized, and at its head he remained until June, 1, 1894, when in consequence of failing health he resigned. After bringing to successful issue the treatment of the army worm and other insects injurious to cotton, he turned his attention to the orange interests of Florida, the insects affecting stock in the lower Mississippi, those affecting the hops, and those affecting cranberries. Two of his remedies have passed into almost universal use—the employment of kerosene emulsified with milk or soap against all sucking insects and the invention of the "cyclone" or eddy chamber in nozzles for the spraying of insecticides or fungicides. He never received a cent beyond his legitimate salary, never took a fee for information, never attempted to control any discovery to his own advantage, nor applied for a patent. In 1880 he introduced the Australian ladybug (*Vedalia cardinalis*) to free the orange groves of California of the white scale, and he has been widely honored for his studies on the grape phylloxera. In 1873 the French Republic presented him with a gold medal for his services to French grape culture, and in 1892 a beautiful bronze statue was presented to him by the grape growers of southern France. In 1889 Prof. Riley represented the Department of Agriculture at the Paris Exposition. On July 14, 1889, he received the Cross of the Legion of Honor from the French Government for services rendered to the agriculture of all countries, and particularly to that of France; and in 1884 he was awarded a gold medal by the Scotch authorities for a collection of forestry insects which he exhibited in Edinburgh. His studies of the Hessian fly and the hop fly in England bore directly on English agricultural prosperity, and he was elected an honorary member of the Royal Agricultural Society. He was one of the 6 honorary members of the London Entomological Society, was for many years recording secretary, and for two years President of the Academy of Sciences of St. Louis, and was the founder and first president of the Entomological Society of Washington. A bibliography of Prof. Riley's works shows more than 2,000 titles of books, pamphlets, and magazine and newspaper articles on scientific subjects. His more important works are: "Reports on the Noxious, Beneficial, and other Insects of the State of Missouri" (9 annual volumes, Jefferson City, 1869-'77); "Potato Pests" (New York, 1876); "Locust Plague in the United States" (Chicago, 1877); and "Annual Reports as Entomologist of the Department of Agriculture." He lectured on entomology at Cornell University, Kansas State Agricultural College, Columbian University, and Missouri State University, which institution conferred on him in 1873 the honorary degree of Ph. D. During his life Prof. Riley was an indefatigable collector and preserver of insects, and he presented his immense private collec-



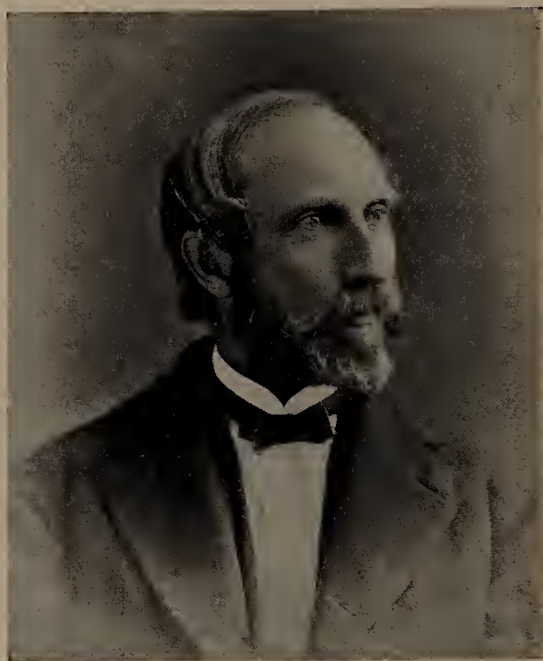


tion to the National Museum at Washington. It contains more than 20,000 species, represented by 115,000 pinned specimens and much additional material. It is the largest general collection in the United States, and is rich in biological examples. Prof. Riley's death was occasioned by a fall from his bicycle a short distance from his suburban home. He was above the average in height, spare, athletic, with a nervous temperament, a dark complexion, and a striking Italian air. He was an accomplished musician. In 1878 he married Miss Enilie J. Gonzelman, of St. Louis, by whom he had 6 children.

**Ritchie, Alexander Hay**, engraver, born in Glasgow, Scotland, Jan. 14, 1822; died in New Haven, Conn., Sept. 19, 1895. He was educated in art at the Royal Institution under Sir William Allan, and took 4 premiums for drawing during his first year as a student. This course of instruction was taken while he was serving an apprenticeship to a firm of press builders. In 1843, on completing his apprenticeship, he removed to Canada, where he engaged in portrait painting and learned steel engraving. From Canada he removed to New York city. He was elected an associate of the National Academy of Design in 1863, and an academician in 1871. He became the foremost engraver in stipple and mezzotint in the United States, and produced notable original compositions. His best-known engravings are: "Lady Washington's Reception Day," after Daniel Huntington; "On the March to the Sea," after Felix O. C. Darley; "Henry Clay"; "Washington and his Generals"; "Death of Lincoln," the last three after his own paintings; "The First Reading of the Emancipation Proclamation," after Carpenter; "Washington entering New York"; "The First Blow for Liberty"; and "Sherman's March to the Sea." His paintings included: "Washington and his Generals"; "Mercy knocking at the Gate" (1860); "Fitting out Moses for the Fair" (1862); "Baby, who's that?" (1871); and portraits of Charles Hodge (1863) and James McCosh (1870).

**Root, George Frederick**, musical composer, born in Sheffield, Mass., Aug. 30, 1820; died on Bailey's island, Maine, Aug. 6, 1895. He was brought up on a farm till his eighteenth year, when he went to Boston. There he devoted himself to the study of music, and in 1839-'44 was instructor in the public schools, and also director of music in 2 churches. He then removed to New York city and taught till 1850, when he spent a year in Paris. In 1859 he became a member of the music-publishing firm of Root & Cady, of Chicago, and took up his residence in that city. He was the originator of normal musical institutes, and was one of the faculty when the first one was held in New York city in 1852. Besides many popular songs, he composed much sacred music, and published several collections of vocal and instrumental music, pamphlets on harmony and the principles of teaching, and articles in musical periodicals. Many of his war songs were very popular. The "Battle Cry of Freedom" was inspired by the news of President Lincoln's second call for troops. Words and music started together in his mind, and the ink was scarcely dry when the song was sung at a war meeting, to be used afterward in camp, on the march, and even on the field of battle. There was a large demand for Mr. Root's music in England and Scotland. In 1886 he crossed the ocean for the second time, spending several months in musical circles, where he found his own compositions exceedingly popular, and heard his own songs frequently sung. His friend J. Curwen Spencer, of London, surprised him by showing in the musical catalogues of the British Museum nearly 24 pages devoted to the titles of Dr. Root's works reprinted in England. He was one of the founders of a school of distinctively American music. A partial list of his compositions, coming down only to 1890, shows 74 books, in only 5 of which were others associated with him, and 179 pieces of sheet music. In a recent catalogue of 114 national war songs 36 are from the pen of George F. Root. At one time his publishers had

14 printing presses at work on "The Battle-Cry of Freedom." "Tramp! Tramp! Tramp!" was written near the close of the war, and had only a year of its influence, but during that time it gave a profit of \$10,000. Work was his pleasure, and he never took an



absolute vacation from it. His personal appearance was very pleasing. He was tall, erect, and courtly, with a fine strong face, and an atmosphere of friendliness. He received the degree of Mus. Doc. from the Chicago University in 1872. His best-known compositions are "Hazel Dell" (1853); "Rosalie, the Prairie Flower" (1855); "The Battle Cry of Freedom" (1861); "Just before the Battle, Mother" (1863); "Tramp! Tramp! Tramp! the Boys are Marching" (1864); "The Old Folks are Gone"; "A Hundred Years Ago"; "Old Potomac Shore"; the quartet "There's Music in the Air"; and the cantatas "The Flower Queen" (1852) and "The Haymakers" (1857).

**Rothermel, Peter Frederick**, artist, born in Nescopeck, Pa., July 18, 1817; died in Grassmere, Pa., Aug. 15, 1895. He received a common-school education, studied land surveying, became a sign painter when twenty years old, and soon afterward was led to study drawing by attending an art exhibition in the Philadelphia Academy. He began his art career as a portrait painter, but as there was then only a slight demand for portraits, he turned his attention to historical subjects. In 1856 he spent a short time in London and Paris, and then spent two years in Rome, returning to Philadelphia in July, 1859. He was an honorary member of the National Academy of Design and an active member of the Pennsylvania Academy of Fine Arts. His paintings include: "De Soto discovering the Mississippi" (1844); "Embarkation of Columbus"; "Christian Martyrs in the Coliseum"; a series illustrating Prescott's "History of the Conquest of Mexico"; "The Virtuoso" (1855); "Vandyke and Rubens"; "King Lear," from a study of a pose of Forrest in London (1856); "Patrick Henry before the Virginia House of Burgesses"; "St. Agnes" (1858); "Paul at Ephesus"; "Paul before Agrippa"; "St. Paul Preaching on Mars Hill"; "Trial of Sir Henry Vane"; "Battle of Gettysburg" (finished in 1871, now in Memorial Hall, Philadelphia); "The Landsknecht" (1876); "Bacchantes" (1874); "Columbus before Isabella"; "Macbeth meditating the Murder of Duncan"; "Lady Macbeth"; and "Amy Robsart interceding for Leicester." Many of his paintings have been engraved.



**Royall, William Bedford**, military officer, born in Virginia, April 15, 1825; died in Washington, D. C., Dec. 13, 1895. He was commissioned 1st lieutenant in the 2d Missouri Mountain Infantry July 31, 1846, and 1st lieutenant and adjutant of the Santa Fé battalion Aug. 14, 1847, and was mustered out of the service Oct. 20, 1848. On March 3, 1855, he was commissioned 1st lieutenant, 2d United States Cavalry. He was promoted captain March 21, 1861; major, 5th Cavalry, Dec. 7, 1863; lieutenant colonel, 3d Cavalry, Dec. 2, 1875; and colonel, 4th Cavalry, Nov. 1, 1882; and was retired Oct. 19, 1887. During the civil war he was brevetted major, May 27, 1862, for Hanover Courthouse; lieutenant colonel, June 13 following, for Old Church, Va.; colonel, March 13, 1865, for recruiting services; and brigadier general, Feb. 27, 1890, for gallantry in the action against the Indians on Rosebud Creek, Mont., June 17, 1876. His appointment to the regular army was in recognition of his gallantry in the Mexican War, especially at the capture of Puebla de Taos. In 1856 he took part in an expedition to the head waters of Conchos river, and in 1859 distinguished himself by a brilliant defense of his camp against hostile Comanches. In the civil war he took part in the engagement at Falling Waters, the siege of Yorktown, and the actions at Hanover Courthouse, Williamsburg, and Old Orchard. In the last he received saber wounds while cutting through the enemy to escape capture, and was disabled for several years, serving the remainder of the war on recruiting duty. After the war he served against Indians in Kansas, 1868, in the Republican river expedition, 1869, and in the Yellowstone expedition, 1876.

**Ryder, James Adams**, embryologist, born near Loudon, Pa., in 1852; died in Philadelphia, Pa., March 26, 1895. His education was limited in the main to a public-school course, though he studied for some time on a Jessup scholarship at the Academy of Sciences in Philadelphia. He published, when twenty-five years old, an account of his scientific researches that attracted the favorable attention of European bacteriologists, and in consequence he received the appointment of embryologist to the United States Fish Commission. In 1886 he was called to the chair of Comparative Embryology in the University of Pennsylvania, which he held till his death. He invented various instruments, including the microtome, designed to unravel the structure of animal tissues in serial form, and achieved his highest scientific reputation by his investigations into the artificial propagation of oysters. He was a prolific writer in biological science.

**Sawyer, Sylvanus**, inventor, born in Templeton, Mass., April 15, 1822; died there Oct. 25, 1895. From childhood he showed great mechanical ingenuity, and from his twelfth to his twenty-first year he spent most of his time in endeavors to improve articles of familiar mechanism. In 1839 he went to Augusta, Me., and worked with his brother-in-law, a gunsmith. Prior to attaining his majority he had made inventions, including a reed organ that embodied many of the features of those in use to-day, a steam engine, a screw propeller, and a car operated by foot power. About 1843 he went to work in a machine shop in Boston, and there invented a machine for splitting rattan for use in chair bottoms. Such a device had long been sought, and on receiving his patent, in 1851, he and a brother established themselves in East Templeton as manufacturers of chair cane. This invention revolutionized the chair-cane industry, and transferred it from European and Asiatic countries to the United States. In 1853 he invented improvements in rifled cannon projectiles, which were patented in 1855. He spent considerable time and money experimenting with these devices for the benefit of the United States Ordnance Bureau, and elicited the declaration by the Secretary of War that the practicability of rifled cannon projectiles had been demonstrated. In the early part of the civil war cannon were prepared for service under his patent, and their efficiency was highly commended; but the Govern-

ment did not adopt his system. He claimed that the ordnance officers incorporated his chief improvements in the manufacture of cannon, thereby infringing on his patent. During 1861-'62 he made further improvements in projectiles, and supplied several department commanders with the first batteries of cast-steel rifled cannon made in the United States. Near the close of the war he built extensive works for the manufacture of his cannon without Government aid, but peace soon obliged him to close them. In 1867 he took out patents on dividers and calipers; in 1868 one on a steam generator; in 1876 one on a sole-sewing machine; and in 1882 one on a centering watchmaker's lathe. Subsequently he was engaged in the manufacture of watchmaker's tools till his retirement from business.

**Schauffler, Mary Reynolds**, missionary, born in Longmeadow, Mass., April 13, 1802; died in New Rochelle, N. Y., Jan. 9, 1895. She removed in childhood, with her parents, to Somers, Conn., and became a teacher in a private school in New Haven. Here she became interested in the work of foreign missions, and accepted an invitation to accompany the Rev. Mr. and Mrs. Brewer to Smyrna, where she opened a school for girls in 1830, the first in the Turkish Empire. In 1834 she married the Rev. William G. Schauffler, then a missionary of the American Board to the Jews in Constantinople, who died in January, 1883. Fifty years ago Mr. Schauffler was influential in persuading Sir Stratford Canning, then British minister at Constantinople, to interfere in behalf of Armenians suffering persecution, not from the Turks, but from their own patriarch. Mr. and Mrs. Schauffler labored in the missionary field more than forty years, and for a great part of the time their home was the stopping place of missionaries going to or returning from stations in European or Asiatic Turkey and Persia. In 1874 they left Constantinople, spent three years in Austria, and then returned to the United States. After her husband's death Mrs. Schauffler made her home in New Rochelle, N. Y.

**Scott, James Wilmot**, journalist, born in Walworth County, Wisconsin, in June, 1849; died in New York city, April 14, 1895. He was the son of D. Wilmot Scott, a journalist and publisher of Galena, Ill.; learned the printer's trade in his father's establishment; took part of a collegiate course, and for a time was employed in the United States Government Printing Office in Washington. In 1872 he established a weekly newspaper in Prince George County, Maryland; in 1874 returned to Galena and with his father established "The Industrial Press"; in 1875 purchased "The Daily National Hotel Register" of Chicago; in May, 1880, founded "The Chicago Daily Herald"; and in April, 1890, with John R. Walsh, who had become interested with him in the ownership of the "Herald," he established "The Chicago Evening Post." Mr. Scott was one of the originators, organizers, and directors of the World's Columbian Exposition; was for many years President of the United Press Association, of the American Newspaper Publishers' Association, and of the Press and Fellowship Clubs of Chicago.

**Scudder, Henry Martyn**, clergyman, born in Panditeripo, Ceylon, Feb. 5, 1822; died in Winchester, Mass., June 4, 1895. He was a son of the Rev. John Scudder, M. D., the missionary; came to the United States when ten years old; was graduated at the University of the City of New York in 1840, and at Union Theological Seminary in 1843; and returned to the Madura missionary station in India as a missionary of the American Board in 1844. Subsequently he studied medicine and established a dispensary at Arcot. He showed uncommon industry in the organization of schools and churches, the translation of religious books, and the founding of the Arcot mission. He became a master of the Sanskrit, Tamil, and Telugu languages, and besides doing much street preaching in these languages he translated numerous religious books and tracts into them. His health failed under the strain of his work, and in 1864 he returned



to the United States. In 1865-'71 he was pastor of the Howard Presbyterian Church in San Francisco; in 1872-'82 of the Central Congregational Church in Brooklyn, N. Y.; and in 1882-'87 of Plymouth Congregational Church, Chicago, resigning in the last year to resume missionary work with his son, the Rev. Doremus Seudder, D. D., and his daughter Catherine in Japan. He remained there two years, resided for some time in Pasadena, Cal., and since 1882 had lived in Winchester. He published "Liturgy of the Reformed Protestant Dutch Church" (Madras, India, 1862); "The Bazaar Book, or the Vernacular Teacher's Companion" (1865); "Sweet Savors of Divine Truth," a catechism (1868); and "Spiritual Teaching" (1870).

**Seelye, Julius Hawley**, educator, born in Bethel, Conn., Sept. 14, 1824; died in Amherst, Mass., May 12, 1895. He was graduated at Amherst College in 1849; studied theology at Auburn, N. Y., in 1849-'52, and at Halle, Germany, in 1852-'53; was ordained by the Classis of Schenectady in 1853; and was pastor of the First Reformed Dutch Church in Schenectady, N. Y., in 1853-'58. In the last year he was elected Professor of Mental and Moral Philosophy in Amherst College, holding the chair till 1875. In 1874 he was elected to Congress as a popular candidate, not having been nominated by any party. While in Congress he acted in general with the Republican party, though he opposed the Electoral Commission and the declaration of the election of Rutherford B. Hayes to the presidency. In 1877 he was elected President of Amherst College, which office he resigned in June, 1890. He received the degree of D. D., from Union College in 1862, and LL. D. from Columbia in 1876. He accepted an invitation to deliver a course of lectures in India in 1872; was a member of a commission to revise the tax laws of Massachusetts; was one of 3 visitors appointed to oversee Andover Theological Seminary; and was a trustee of the Clarke Institute for Deaf Mutes, of Smith College for Women, and of Mount Holyoke Female Seminary. During his administration at Amherst the college received endowments amounting to over \$800,000, and he was instrumental in raising over \$270,000 after the burning of Walker Hall. He made radical changes in the management of the college, abolishing the marking system and the valedictory exercises, and selected the commencement speakers from special departments in which they excelled. He also brought about the abolition of rules for the conduct of the students, and formed what was known as the "college senate," under which the students governed themselves in all matters concerning deportment. Dr. Seelye was a frequent contributor to periodicals, and published a translation of Schwegler's "History of Philosophy" (New York, 1856); "Lectures to Educated Hindus" (Bombay, 1873; republished as "The Way, the Truth, the Life," Boston, 1873, and translated into Hindustani, Japanese, and German); and "Christian Missions" (New York, 1875); and revised and edited Hickok's "Moral Science" (Boston, 1880).

**Sefton, Marian Mercer**, actor, born in Liverpool, England, Oct. 9, 1810; died in Navesink Highlands, N. J., Sept. 19, 1895. She began her career on the stage at Montreal, and made her first appearance in New York city at the Bowery Theater as Babetta in "Destiny," July 4, 1836. At that time she was the wife of Thomas T. Watts, author and scientist, who was connected with Commodore Perry's expedition to Japan. In 1842 she became a member of the company of Mitchell's Olympic Theater, and five years afterward attained much popularity in the character of Grace Peabody, in "Ladies Beware," at the Broadway Theater. She married John Sefton Jan. 15, 1845, with whom she appeared on the stage quite regularly till his death, in 1868. While a member of Wallack's company she created the rôle of Sarah Sykes in Lester Wallack's play "Rosedale." She was also the original in the United States of Tillie Draggles in Watts Phillips's play "Lost in London." While rehearsing at the old Wallack Theater,

about 1883, she met with an accident that compelled her to retire from the stage.

**Shea, George**, jurist, born in Cork, Ireland, June 10, 1826; died in New York city, Jan. 15, 1895. He was the son of John Augustus Shea, author and journalist, and came to the United States with his parents in 1827. He studied law and was admitted to the bar in New York city; was corporation attorney in 1865-'67; and was chief justice of the Marine Court of New York in 1870. Judge Shea was associated with Charles O'Connor in the defense of Jefferson Davis, and was counsel for the Kings County Elevated Railroad in Brooklyn. He published "Hamilton," an historical study (New York, 1877; enlarged edition, Boston, 1880).

**Shufeldt, Robert Wilson**, naval officer, born in Red Hook, N. Y., Feb. 21, 1822; died in Washington, D. C., Nov. 7, 1895. He was appointed a midshipman in the navy, May 11, 1839; was promoted passed midshipman, July 2, 1845; master, Feb. 21, 1853; lieutenant, Oct. 26, 1853; commander, Nov. 19, 1862; captain, Dec. 31 following; commodore, Sept. 21, 1876; and rear-admiral, May 7, 1883; and was retired, Feb. 21, 1884. He was on sea service for eighteen years and one month; on shore or other duty, eleven years and three months; and was unemployed twenty-six years and four months, being out of the service for seven years and seven months from July 20, 1854, when he was connected with the merchant marine and had charge of a surveying party on the isthmus of Tehnantepec. At the beginning of the civil war he was in command of a steamship plying between New York and Havana, and soon afterward he was appointed United States consul general at the latter city. Early in 1863 he re-entered the navy under a commission of commander, dated Nov. 19, 1862. He was first given command of the steamer "Conemaugh," then on blockading duty at Charleston, and took part in the engagements on Morris Island. In 1864-'66 he commanded the "Protons" of the Eastern Gulf blockading squadron. After the war he was successively in command of the "Hartford" of the East India squadron, the "Waehnsset" of the Asiatic squadron, and the monitor "Miantonomoh." In 1870-'71 he was again on surveying duty, both on the Tehnantepec and Nicaraguan routes. During 1875-'78 he was chief of the Bureau of Equipment and Recruiting, and in 1879-'80 was on a special mission to Africa and the East Indies, in connection with the expansion of American commercial relations. During this cruise he was selected for arbitrator by the United States and British governments to settle the Liberian boundary question, and subsequently he negotiated an agreement with the Kingdom of Korea for protection of American life and property. In 1881, while at Peking, China, as special agent of the United States Government, he secured the treaty that opened Korea to the world and recognized that kingdom as an independent nation. After his return to the United States he was president of the naval advisory board that designed the first steel cruiser and planned the new navy, and was also superintendent of the naval observatory. After his retirement he spent some time in Korea as the guest of the nation.

**Sleeper, Solomon S.**, philanthropist, born in Bristol, N. H., March 18, 1815; died in North Cambridge, Mass., Jan. 6, 1895. He was the son of a Methodist clergyman, and in 1843 engaged in the wholesale





grocery business in Boston. He served several terms in the Legislature and in the Cambridge Board of Aldermen. Mr. Sleeper was deeply interested in charitable work, and contributed largely to promote it. He was a liberal benefactor and director of the Avon Street Home and the Baldwin Street Home for Little Wanderers of Cambridge, gave \$5,000 to the Shepherd Memorial Church there, presented the town of Bristol with a public library, and gave considerable sums to churches.

**Smith, Green Clay**, military officer, born in Richmond, Ky., July 2, 1832; died in Washington, D. C., June 29, 1895. He was a son of Congressman John S. Smith, and grandson of Gen. Green Clay. In 1847 he enlisted in a cavalry regiment and served a year in the Mexican War. He was graduated at Transylvania University in 1850, and at the Lexington Law School in 1853; began practicing with his father; removed to Covington in 1858; and was elected to the Legislature, where he defended the National Government in 1860. In the following year he was commissioned major in the 3d Kentucky Cavalry; was appointed colonel of the 4th Kentucky Cavalry in February, 1862; was wounded at Lebanon, Tenn.; and was promoted brigadier general of volunteers, June 11. He resigned his commission, Dec. 1, 1863, having been elected to Congress, where he served till 1866, then resigned to accept the office of Governor of Montana, where he remained three years. He was brevetted major general of volunteers, March 13, 1865, for gallantry in the field. In 1869 he was ordained to the ministry of the Baptist Church, and settled in Frankfort, Ky. He devoted most of his time to service as an evangelist, but in 1876 was the candidate of the National Prohibition party for the presidency, and received a popular vote of 9,522. In 1890 he was called to the pastorate of the Metropolitan Baptist Church, Washington, D. C.

**Smith, Samuel Francis**, clergyman, born in Boston, Mass., Oct. 21, 1808; died there Nov. 16, 1895. He was graduated at Harvard College in 1829, and at Andover Theological Seminary in 1832. During 1834-'42 he held a pastorate at Waterville, Me., and was also Professor of Modern Languages in the college there; and 1842-'54 was stationed at Newton, Mass. He was editor of the "Christian Review" in Boston in 1842-'48, and of publications of the Baptist Missionary Union in 1854-'69, and visited the chief missionary stations in Europe and Asia in 1875-'76 and 1880-'82. He received the degree of D. D. from Waterville College in 1854. Dr. Smith was best known as the author of the national hymn "My Country 'tis of Thee," which he composed while a student of theology, and which was first sung at a children's celebration in Boston, July 4, 1832. About the same time he also wrote the well-known missionary hymn "The Morning Light is breaking." On the afternoon and evening of April 3, 1895, he was given a reception in Music Hall, Boston, in recognition of his service as author of the national hymn. Among his literary works are several collections of original hymns and poetry and poetical translations, including "Lyric Gems" (Boston, 1843), "The Psalmist," a Baptist hymn book (1843), and "Rock of Ages" (1866, 1877). He translated from the German the greater part of the "Juvenile Lyre" (Boston, 1832), and from the "Conversations-Lexicon" nearly enough articles to fill a volume of the "Encyclopædia Americana" (1823-'32). He published the "Life of Rev. Joseph Grafton" (1848); "Missionary Sketches" (1879, 1883); "History of Newton, Mass." (1880); and "Rambles in Mission Fields" (1884).

**Smith, Sebastian B.**, clergyman, born in Germany, in 1845; died in Havana, Cuba, March 2, 1895. He was brought to the United States when a child, and was educated at Seton Hall College, South Orange, N. J., and at the American College in Rome, Italy. He made a special study of canon law, and was professor of it at Seton Hall for several years. He was at the time of his death legal adviser to the bishop of the diocese of Newark, and had been employed as coun-

sel in many important ecclesiastical trials. He spoke English, German, Spanish, French, Latin, and Greek. From 1880 he was rector of St. Joseph's Church, Paterson, N. J. He bequeathed three quarters of an estate, estimated at \$60,000, to Catholic institutions.

**Snow, Ambrose**, pilot, born in Thomaston, Me., in January, 1813; died in Brooklyn, N. Y., June 28, 1895. He served before the mast for five years, and when twenty-five years old was a shipmaster. He followed the sea till 1860, when he settled in New York city and formed the shipping firm of Snow & Burgess. For twenty-five years he had been a member of the board of pilot commissioners, of which he was president at the time of his death, and for fifteen years he was President of the Board of Trade and Transportation. At the centennial of the inauguration of President Washington in New York city on April 29, 1889, he was coxswain of a crew of 13 veteran sea captains, all members of the Marine Exchange, that rowed President Harrison in a small boat from the United States steamer "Dispatch" in the East river to the landing stage at Wall Street.

**Spier, Samuel Fleet**, physician, born in Brooklyn, N. Y., April 9, 1838; died there Dec. 19, 1895. He was graduated at the medical department of the University of New York in 1860, having won the Mott gold medal and the Van Buren prize for scholarship. He also was awarded the Wood prize at Bellevue Hospital, which he subsequently entered. He continued his studies in Europe for nearly three years. Plaster of Paris as a substitute for splints was there first introduced in surgical operations. He made a special study of the innovation; returned to the United States in the latter part of 1862, and was sent by the United States Sanitary Commission to the Army of the Potomac, where he distinguished himself in applying these surgical aids. In 1863 he returned to Brooklyn, where he remained till his death, holding the offices of demonstrator of anatomy in the Long Island College Hospital, physician, curator, microscopist, and surgeon of the Brooklyn Hospital, surgeon to the tumor and cancer department of the Brooklyn Dispensary, and consulting surgeon of the hospital. Dr. Spier originated the Seaside Home for Children and founded the Helping Hand Dispensary. He published the "Pathology of Jaundice" (1863), for which he received a gold medal; "The Microscope in the Differential Diagnosis of Morbid Growth" (1871); and "The New Method of arresting Hæmorrhage by the Use of the Artery Constrictor," which won a prize from the New York Medical Society. He was widely known as an expert on cancer, which was the cause of his death.

**Spoth, Edward A.**, musical composer, born in Germany in 1820; died in Rondout, N. Y., April 21, 1895. He developed musical abilities at an early age, and became especially known as a composer of religious, classical, and concert music. Among his best-known compositions are the "Austrian Bugle March" and the "Apollo Overture," a funeral march.

**Sprague, Eben Carleton**, lawyer, born in Bath, N. H., Nov. 26, 1822; died in Buffalo, N. Y., Feb. 14, 1895. He removed with his parents to Buffalo in 1826. He studied at Phillips Exeter Academy, and was graduated at Harvard in 1843. He was admitted to the bar in October, 1846, and from that time practiced in Buffalo. He was a member of the State Senate in 1876-'77, was for several years Chancellor of the University of Buffalo, and was President of the Harvard Club of western New York, and President of the Liberal Club of Buffalo. Harvard gave him the degree of LL. D. in 1892.

**Stearns, John Newton**, reformer, born in New Ipswich, N. H., May 24, 1829; died in Brooklyn, N. Y., April 21, 1895. He engaged in journalism in New York in 1850, and became editor and proprietor of "Merry's Museum" in 1858. He joined a juvenile temperance society when seven years old; became a member of the Sons of Temperance at his birthplace in 1848; was elected grand worthy patriarch of the grand division of eastern New York in 1859 and 1864



and most worthy grand patriarch of the national division of North America in 1866. In the latter year he also joined the Independent Order of Good Templars, and subsequently he was twice elected grand worthy templar of the Grand Temple of New York. On the organization of the National Temperance Society and Publishing House, in 1865, he was appointed its corresponding secretary and publishing agent, which offices he held till his death. In 1875-'76 he was President of the New York State Temperance Society, and in 1893 had general charge of the World's Temperance Congress in Chicago during the World's Exposition. Mr. Stearns was editor, from 1865, of the "National Temperance Advocate"; was also editor of the "Youths' Temperance Banner," "The Water Lily," "The National Temperance Almanac," issued annually since 1869; and published "The Temperance Chorus" (New York, 1867); "The Temperance Speaker" (1869); "The Centenary Temperance Volume" (1876); "The Prohibition Songster" (1885); and "One Hundred Years of Temperance" (1885).

**Stearns, Joseph Barker**, electrician, born in Weld, Me., Feb. 28, 1831; died in Camden, Me., July 2, 1895. He learned telegraphy in Newburyport, Mass.; became superintendent of the Boston Fire-alarm Telegraph Company in 1855, and held the office till 1867, when he was elected President of the Franklin Telegraph Company, operating lines between Boston and Washington. While in charge of the fire-alarm telegraph in Boston he made numerous inventions, by which the system reached its present high state of development. In 1868 he invented a duplex system of telegraphy, for which he received a United States patent and royalties from the British, French, Italian, Russian, and Spanish governments, from several in Central and South America, and also from submarine telegraph companies. He was employed as an electrical engineer in making, laying, and putting into operation telegraph cables between Galveston, Texas, and Vera Cruz, Mexico, and between the Isthmus of Tehuantepec in Mexico and Callao, Peru. On the completion of his last work he made his home in Camden, Me., where he gathered a collection of carved ivories, said to be the largest ever made.

**Stevens, John Leavitt**, journalist, born in Mount Vernon, Me., Aug. 1, 1820; died in Augusta, Me., Feb. 8, 1895. He was educated at the Maine Wesleyan Seminary and the Waterville Liberal Institute; studied theology, and was ordained a minister of the Universalist Church in 1844. After ten years failing health compelled him to abandon the ministry, and James G. Blaine, then one of the owners of "The Kennebec Journal," called him to the associate editorship of that paper. Three years afterward Mr. Blaine removed to Portland, and Mr. Stevens succeeded him as editor in chief, holding the place till 1870. He was then appointed United States minister to Uruguay and Paraguay, which countries were in a disturbed condition. He was influential in protecting American interests and in aiding to re-establish peace between the two countries. In 1873 he resigned this post, and four years afterward went to Sweden as United States minister, remaining there till 1883. While residing in Stockholm he gathered materials for a history of Gustavus Adolphus and the Thirty Years' War. In 1889 he was appointed minister to the Hawaiian Islands. A revolution against the royal Government broke out in Honolulu on Jan. 30, 1893; the Queen's authority was overthrown, and a provisional government was proclaimed (see article HAWAIIAN ISLANDS in the "Annual Cyclopædia" for 1893). Minister Stevens established a protectorate over the islands on Feb. 1—an act which was promptly disavowed by the American Secretary of State. On Feb. 15 President Harrison sent to the Senate a message accompanied by the draft of a treaty providing for annexation. But five days after President Cleveland assumed office he withdrew the treaty from the Senate and appointed James H. Blount, of Georgia, a special commissioner to visit Hawaii and ascertain all the facts

connected with the overthrow of its Government, vesting him with paramount authority. On April 1 Commissioner Blount withdrew the protectorate, and in May Minister Stevens was recalled and Mr. Blount was appointed minister in his place. Mr. Stevens returned to the United States and took no further part in public affairs.

**Stiles, Isaac Newton**, lawyer, born in Suffield, Conn., July 16, 1833; died in Chicago, Ill., Jan. 18, 1895. He received a common-school education, studied law, and was admitted to the bar in Lafayette, Ind., in 1855. Soon afterward he became prosecuting attorney; was elected to the Legislature; and was an active speaker in the Fremont presidential campaign. At the beginning of the civil war he enlisted as a private, but went to the field as adjutant of the 20th Indiana Infantry. He was taken prisoner at Malvern Hill, and was confined for six weeks in Libby prison. On being exchanged, he returned to the army; was promoted major, lieutenant colonel, and colonel of the 63d Indiana Volunteers, and was brevetted brigadier general for meritorious services in the field, Jan. 31, 1865. After the war he settled in Chicago to practice. For several years he was totally blind.

**Stockbridge, Henry**, lawyer, born in North Hadley, Mass., Aug. 31, 1822; died in Baltimore, Md., March 11, 1895. He was graduated at Amherst College in 1845, and was admitted to the bar in Baltimore, May 1, 1848. During the civil war he was active in the Union cause, and was appointed a special district attorney in the War Department. In 1864, while a member of the Legislature, he drew up the act providing for a Constitutional convention to abolish slavery in that State. He was elected to this convention, and subsequently defended the Constitution framed by it before the court of last resort. Subsequently he instituted and prosecuted with success in the United States courts proceedings for annulling the indentures of apprenticeship, through which attempts had been made to evade the emancipation clause. By these efforts he secured the enfranchisement of more than 10,000 colored children in Maryland. In 1865 he was judge of the circuit court of Baltimore County. He was Vice-President of the Maryland Historical Society, for more than twenty years editor of the fund publications, and contributed Part XXII to "The Archives of Maryland" (Baltimore, 1866).

**Stone, David Marvin**, journalist, born in Oxford, Conn., Dec. 23, 1817; died in Brooklyn, N. Y., April 2, 1895. He received a common-school education, and was engaged in teaching and in mechanical pursuits till 1842, when he became a merchant in Philadelphia, and in 1849 removed to New York city and became editor of the "The Dry-goods Reporter." In December following he became commercial editor of "The Journal of Commerce." In 1861, in conjunction with William C. Prime, he purchased the paper, and five years afterward succeeded Mr. Prime as editor in chief. He held this place till June 10, 1893, when the paper was consolidated with "The Commercial Bulletin." A notable incident in his long editorial career was the suppression of his paper by the United States Government in May, 1864, for publishing a spurious draft proclamation purporting to have been issued by President Lincoln. Copies of the alleged proclamation were sent to the principal newspapers in the city, but the "Journal of Commerce" and the "World" were the only ones that published it in full. The only person imprisoned was Joseph Howard, Jr., author of the canard. Mr. Stone was a lover of flowers, and spent all his leisure in his garden and conservatory, giving freely of his floral treasures to the poor and sick. He bequeathed to the Brooklyn Society for the Relief of Reputable Aged Indigent Women \$5,000.

**Story, William Wetmore**, sculptor, essayist, and poet, born in Salem, Mass., Feb. 12, 1819; died in Vallombrosa, Italy, Oct. 7, 1895. He was a son of Joseph Story, the famous jurist, and after graduation at Harvard University studied law with his father and was



admitted to the bar. Five years of active work in his profession, during which time he produced several law books and contributed both verse and prose to the magazines, were followed in 1845 by a severe illness, from which he had hardly recovered when his



father died. It was decided by the bar to erect a statue to Judge Story, and the commission was given to his son, who had hitherto accomplished only amateur work in sculpture. In order to qualify himself for serious effort in this direction he went to Rome to study, and for the rest of his career made Italy his home. He made, however, several visits to the United States, delivering a series of art lectures here in the winter of 1877-'78. In 1843 Mr. Story married Miss Eldridge in Boston. Mr. Story's studio was one of the most popular places of resort for visitors in Rome, and about the sculptor himself centered much of the best literary and artistic life of the city. He went to Italy at a period when very little had been accomplished in sculpture in his native country, and if he never rose to greatness as a sculptor, he still accomplished much that was both creditable and pleasing. His "Cleopatra" statue is mentioned by Hawthorne in "The Marble Faun," and among his best works of this character are the statues of Josiah Quincy, at Sanders Theater, Cambridge, and George Peabody, in London. Much less admirable are such well-known works of his as the "Edward Everett," in the Boston public garden, and the "Prescott," at Bunker Hill. In poetry Story takes a higher rank than in sculpture; the level reached in his first volume of poems in 1847 is maintained in all his subsequent work down to the latest collection of his verse in 1885. His poetry exhibits a delicacy of suggestion, a strength of phrase, a felicity of diction, and a glow of color that win our admiration, but it falls short of a very high degree of excellence. The "Roman Lawyer in Jerusalem," one of his most characteristic poems, was better known a generation ago than it is at present; but perhaps his lines on the historian Motley show him, in certain aspects, at least, at his best. His most popular prose work was "Roba di Roma," a series of "Walks and Talks about Rome," which remains as delightful reading to-day as when it was written. "Fiammetta" is a novel deeply penetrated with Italian passion, and displays one side of his varied nature, as his "Conversations in a Studio," a critical volume, reveals another. Yet it must be admitted that in prose as in verse, and in sculpture also, Story achieved nothing distinctive, although his work in all three departments of effort gives much pleasure. But it is the work of a highly accomplished *dilettante*, not that of genius. His talents were exercised in too many fields to admit of supreme excellence being achieved in any one. He was strongest as a poet. Mr. Story's first published work was a "Treatise on the Law of Sales" (Boston, 1844), followed by a "Treatise on the Law of Contracts" (Boston, 1847). His other books include "Poems" (Boston, 1847); "Life and Letters of Joseph Story" (1852); "Poems" (Boston, 1856); "Roba di Roma" (London, 1862); "The American Question" (London, 1862); "Proportions of the Human Figure" (1866); "Graffiti d'Italia" (Edinburgh, 1868); "The Roman Lawyer in Jerusalem" (Boston, 1870); "Nero: An Historical Play" (Edinburgh and London, 1875); "Castle St. Angelo" (Philadelphia, 1877); "Vallombrosa" (Edinburgh, 1881); "He and She; or, A Poet's Portfolio" (Boston, 1884); "Fiammetta: A Summer Idyl" (Boston, 1885); "Poems" (Edinburgh, 1885); "Conversations in a Studio"

(Boston, 1890); "Excursions in Art and Letters" (Boston, 1891); "A Poet's Portfolio: Later Reading" (Boston, 1894).

Strong, William, jurist, born in Somers, Conn., May 6, 1808; died at Lake Minnewaska, N. Y., Aug. 19, 1895. He was graduated at Yale in 1824; took a six-months' course in the law school, and was admitted to the bar in Reading, Pa., in 1832. In less than a year he acquired a practical familiarity with German, which was then generally spoken in that section of the State, established himself in practice, and became active in politics. In 1846 and 1848 he was elected to Congress as a Democrat. He continued to practice till 1857, when he was elected a justice of the Supreme Court of Pennsylvania, resigning in 1868 and removing to Philadelphia. His opinions fill 30 volumes of the State reports. In Philadelphia he almost immediately obtained a large practice, but relinquished it in 1870, on being appointed an associate justice of the United States Supreme Court. Judge Strong was a member of the Electoral Commission of 1877 to decide the Hayes-Tilden presidential contest. He resigned his seat on the bench in December, 1880. Justice Strong was for many years President of the American Tract Society and of the American Sunday-school Union, and was one of the incorporators of the American Board of Commissioners for Foreign Missions. For several years after his retirement he lectured in the law department of Columbian University, Washington, D. C., and also gave a course of similar lectures to the professors and students of Union Theological Seminary, New York. In 1875 he delivered an address before the law department of the University of Pennsylvania on the "Growth and Modifications of Private Civil Law."



Sutherland, Charles, physician, born in Philadelphia, Pa., May 29, 1829; died in Washington, D. C., May 11, 1895. He was appointed an assistant surgeon in the United States army, Aug. 5, 1852; was promoted captain and assistant surgeon, Aug. 5, 1857; major, April 16, 1862; lieutenant colonel and assistant medical purveyor, July 28, 1866; colonel and surgeon, June 26, 1876; and brigadier general and surgeon general, Dec. 23, 1890; and was retired May 29, 1893. He was brevetted lieutenant colonel for meritorious services, and colonel for diligent discharge of duties during the war, both on March 13, 1865. On the secession of Texas he escaped being taken prisoner, and left the State with artillery and infantry troops for New York, reporting for duty in March. In the following month he accompanied the secret expedition to Fort Pickens, Fla., where he was stationed till March, 1862, and after a brief service at Fort Warren, Mass., was appointed medical purveyor to the armies at Pittsburg Landing, Tenn. He established large medical depots at Columbus, Ky., and Memphis, Tenn.; fitted out 9 general hospitals at the latter city, and was appointed medical inspector of camps and transports of the Army of the Tennessee in and about Vicksburg, Miss. Afterward he was medical director to the Department of Virginia and North Carolina; from November, 1863, till January, 1864, was on retiring board duty at Wilmington, Del.; then became medical director of hospitals at Annapolis; and afterward was purchasing medical purveyor at Washington, D. C., till the close of the war. After the war he was on duty principally in New York and San Francisco, till his promotion to surgeon general, and then till his retirement at Washington, D. C.

Swain, James Barrett, journalist, born in New York city, July 30, 1820; died in Sing Sing, N. Y., May 27, 1895. He received a public-school education, and in



1834 entered a printing office as an apprentice, where he had Horace Greely for an associate. A friendship sprang up between them, and on leaving the printing office the two set up in business for themselves under the name of Horace Greely & Co., and edited and published the "Log Cabin." In 1843 Mr. Swain purchased the "Hudson River Chronicle" in Sing Sing, N. Y., and edited and published it till 1849, when he returned to New York and became city editor of the "Tribune." He went to the "Times" in a similar capacity in 1851, and became editor of the "American Agriculturist" in 1852, and political contributor to the "Times" in 1853, and its Washington correspondent in 1860. He also edited the "Free State Advocate," a national Republican campaign paper in 1856, and the Albany "Daily Statesman" in 1857-'61. In 1861 he raised a body of cavalry known as "Scott's Nine Hundred," and went to the front as its colonel. He served till the close of the war, and on his return was appointed engineer in chief of the National Guard of New York. In 1867-'70 he was a United States weigher, in 1876-'85 edited the "Hudson River Chronicle," and in 1881-'85 was an inspector of post offices. He published "Life and Speeches of Henry Clay," to whom he was for a time private secretary (2 vols., New York, 1842); "Historical Notes to a Collection of the Speeches of Henry Clay" (2 vols., 1843); and "Military History of the State of New York" (3 vols., 1861-'65).

**Swinburn, Ralph**, engineer, born in Newcastle, England, in January, 1805; died in Charleston, W. Va., June 14, 1895. He was the son of a miner, and when fifteen years old was apprenticed to Stephenson, who was then perfecting his railway locomotive. In 1850 he settled in New Orleans, afterward removing to Richmond Va., where he secured employment in the building of the old Virginia Central Railroad. He remained in the railway service as operating and constructing engineer till about 1870, when he settled on a farm in West Virginia, and also entered the ministry of the Baptist Church, and was engaged in work as an evangelist till within two years of his death. Mr. Swinburn aided Stephenson in making the trial trip of the first railway locomotive, and sat in the cab with his hand on the throttle as engineer.

**Taylor, William Mackergo**, clergyman, born in Kilmarnock, Scotland, Oct. 23, 1829; died in New York city Feb. 8, 1895. He was graduated at the University of Glasgow in 1849; studied theology at the Divinity Hall of the United Presbyterian Church at Edinburgh; was licensed to preach by the presbytery of Kilmarnock, Dec. 14, 1852; and was ordained pastor of the United Presbyterian Church at Kilmaurs, June 28, 1853. In 1855 he was called to the United Presbyterian Church on the Derby Road, Liverpool, where he labored for sixteen years, building up a congregation of from 16 to nearly 1,000 members, and leaving it the second largest of its denomination in England. He first came to the United States in 1871 as a delegate to the General Assembly of the Presbyterian Church, and the same spring occupied for several weeks Dr. Storrs's pulpit in Brooklyn. In November, following, Dr. Taylor was called to the pastorate of the Broadway Tabernacle Church, where he was installed on April 9, 1872. He held this charge actively till November, 1892, when, on resigning, he was chosen pastor emeritus. He received the degree of D. D. from Yale and Amherst Colleges in 1872, and that of LL. D. from Princeton in 1883. From 1876 till 1880 he was editor of the "Christian at Work," for which he wrote the International Sunday-school Lessons for several years; in 1876 and 1886 delivered the Lyman Beecher course of lectures in Yale College; in 1880, the L. P. Stone lectures in Princeton Seminary; and in 1883 undertook to raise a fund for the erection of parsonages on the Western frontier, to be administered by the American Congregational Union, his personal efforts resulting in the contribution of over \$21,000, which has since been increased to \$86,000. He was identified with numerous missionary and philanthropical societies; was a frequent

contributor to the religious press; and published "Life Truths," a volume of sermons (Liverpool, 1862); "The Miracles: Helps to Faith, not Hindrances" (Edinburgh, 1865); "The Lost found and Wanderer welcomed" (1870); "Memoir of the Rev. Matthew Dickie" (Bristol, 1872); "Prayer and Business" (New York, 1873); "David, King of Israel" (1875); "Elijah, the Prophet" (1876); "The Ministry of the Word" (1876); "Songs in the Night" (1877); "Peter, the Apostle" (1877); "Daniel, the Beloved" (1878); "Moses, the Lawgiver" (1879); "The Gospel Miracles in their Relation to Christ and Christianity" (1880); "The Limitations of Life, and Other Sermons" (1880); "Jesus at the Well" (1884); "John Knox: A Biography" (1885); "Joseph, the Prime Minister" (1886); "The Parables of Our Saviour expounded and illustrated" (1886); "The Scottish Pulpit" (1887); "Ruth, the Gleaner" and "Esther, the Queen" (1891); "Good Character: What it is, and how to form it" (1892); and "The Boy Jesus, and Other Sermons" (1893).

**Thatcher, Solon O.**, jurist, born in Hornellsville, N. Y., Aug. 31, 1830; died in Lawrence, Kan., Aug. 11, 1895. He studied at Union College, and was graduated at Albany Law School in 1856. He was a delegate to the first State convention in New York for the organization of the Republican party, and after the Fremont campaign removed to Lawrence, Kan., where he at once became one of the counselors of the Free-state movement. In 1859 he was temporary presiding chairman of the Wyandotte Convention, and was chosen chairman of the legislative committee of that body. He was elected the first district judge of the 4th Judicial District of Kansas in 1859, and served till 1864, when he resigned, and was the unsuccessful Republican candidate for Governor. He was appointed in July, 1884, one of 3 commissioners to negotiate treaties with the South and Central American governments; and at the subsequent assembling of the Pan-American Congress at Washington he made a detailed report of his work.

**Thomas, Elisha Smith**, clergyman, born in Wickford, R. I., March 2, 1834; died in Salina, Kan., March 9, 1895. He was graduated at Yale in 1858 and at Berkeley Divinity School, Middletown, Conn., in 1861. In June of the latter year he took deacon's orders, and after taking priest's orders was for three years rector of St. Paul's Church at New Haven. In 1864 he became rector of Seabury Hall, Faribault, Minn., and Professor of Old and New Testament Exegesis in the divinity school there. In 1811 he accepted a call to the rectorship of St. Mark's Church, Minneapolis, which he held till his consecration as Assistant Bishop of Kansas in 1887. On the death of Bishop Vail in 1889, Bishop Thomas became the head of the diocese, and he labored with energy and ability in behalf of Church extension.

**Thomes, William Henry**, author, born in Portland, Me., May 5, 1824; died in Boston, Mass., March 7, 1895. He received a public-school education and learned the printer's trade. In 1843 he went to California, and again in 1849, extending his last trip to Honolulu, the East Indies, Australia, and China. During his travels he visited almost every point of interest on the South American and African coasts. He was engaged for three years in the mines in Australia; spent some time on an opium smuggler between China and California; and at the beginning of the Mexican War was forced into the service of the Mexican Government, from which he escaped with difficulty. On his return to Boston he became editor of "Ballou's Monthly," to which he contributed a large number of stories. Among his publications are "The Gold Hunters of Australia" (Boston, 1869); "Life in the East Indies" (1870); "A Whaleman's Adventures" (1871); "The Gold Hunters in Europe" (1872); "A Slaver's Adventures" (1873); "Running the Blockade" (1874); "The Belle of Australia" (1885); "On Land and Sea" (1886); and "Lewey and I" (1887). He was the first President of the New England Society of California Pioneers.



**Thompson, Alexander Ramsey**, clergyman, born in New York city, Oct. 16, 1822; died in Summit, N. J., Feb. 7, 1895. He was graduated at the University of the City of New York in 1842, and at Princeton Theological Seminary in 1845; was pastor of the Presbyterian Church, Staten Island, in 1851-'59; of the Reformed Dutch Church in Twenty-first Street, New York city, in 1862-'73; and of the North Reformed Dutch Church, in Brooklyn, N. Y., in 1873-'84. While holding a pastorate in Bridgeport, Conn., at the beginning of the civil war he was instrumental in organizing the 17th Connecticut Regiment, and for a year he was its chaplain. He was also an organizer of the Christian Commission, and for two years was in charge of the New England Soldiers' Relief Bureau. In 1863-'65 he was chaplain of the New England Hospital, and from 1873 till his death, of the Roosevelt Hospital, New York city. He received the degree of D. D. from the University of the City of New York in 1865, and had been a member of its council since 1872. Among his publications are "Casting down Imaginations" (1874) and "Christian Patriotism: The Points of Similarity between the Struggle for Independence in America and that of our Holland Ancestors" (1876). Dr. Thompson was the author of many hymns, and his translations of Latin and Greek hymns rank high. He assisted in compiling "Hymns of the Church" (New York, 1869) and "Hymns of Prayer and Praise" (1874).

**Thompson, Alfred**, artist, born in London, England, in 1831; died in Barnegat Park, N. J., Aug. 31, 1895. He was educated at Rugby and Cambridge; entered the Enniskillen Dragoons, with which he served for several years, attaining the rank of captain; sold his commission, and studied art in Munich and Paris; and did considerable work on the illustrated papers in the last city. Three of his paintings were exhibited at the Royal Academy. After returning to London he was for a time editor of "Pan and the Mask," was one of the founders of the Empire Music Hall, and composed and superintended the production of pantomimes at Drury Lane Theater and Covent Garden. He settled in New York city in 1884, where for a time he published a comic paper called "Snap." He adapted "The King's Pleasure" for Lawrence Barrett, wrote the librettos for "The Arabian Nights" and "The Crystal Slipper"; designed the floats for the Columbian Celebration parade, and the scenery and costumes for Robson and Crane's production of "The Comedy of Errors," and for several years devoted himself almost exclusively to designing theatrical scenery and costumes.

**Thompson, Mary Harris**, surgeon, born in Washington County, New York, in 1829; died in Chicago, Ill., May 21, 1895. She was educated at Fort Edward Institute and West Poughkeepsie Academy, and studied at the New England Female Medical Academy and the New York Infirmary for Women and Children. In 1863 she removed to Chicago, where she gained the reputation of being one of the most eminent female surgeons in the world. She was one of the promoters of the Women's Medical College, and founder of the Chicago Hospital for Women and Children.

**Thurman, Allen Granbery**, jurist, born in Lynchburg, Va., Nov. 13, 1813; died in Columbus, Ohio, Dec. 12, 1895. He accompanied his parents to Chillicothe in 1819, where he received his education, and afterward settled in Columbus. His first employment was as an assistant to a party of land surveyors in Ohio. Afterward he studied law and became private secretary to Gov. Lucas. He was admitted to the bar in 1835. Returning to Chillicothe, he entered into partnership with his uncle, William Allen, and when the latter laid aside his law practice for his political affairs, Mr. Thurman took charge of all of the former. He received the Democratic nomination for Congress in 1844 and was elected. He declined a renomination and resumed the practice of law till 1851, when he was elected a judge of the Supreme Court of the State, serving the last year of his term as chief justice. He declined a renomination for this office also, and again

returned to practice. In 1867 he was the Democratic candidate for Governor, and, though defeated by Rutherford B. Hayes, he greatly reduced the majority of the successful party. The now Legislature was Democratic and elected him United States Senator for the term beginning March 4, 1869. He was appointed a member of the Committee on the Judiciary, of which subsequently he was chairman for several years. In 1874 he was re-elected to the Senate, and in this term was chosen its president *pro tem*. While in Congress he drafted the bill to compel the bond-aided Pacific railroads to fulfill their obligations to the Government, since known as the "Thurman act"; presented arguments against the constitutionality of the Civil Rights bill which have since been sustained by the United States Supreme Court; labored to secure for the States that seceded the most favorable reconstruction legislation; opposed the Resumption act; advocated a concurrent resolution declaring that the public debt of the United States was payable in silver coin of standard weight and fineness; supported the Bland-Allison act; took part in framing the bill providing for the Electoral Commission; and was a member of that body and a warm defender of its constitutional authority and of its decisions. James G. Blaine, in his "Twenty Years of Congress," pays a glowing tribute to his integrity and worth. He was succeeded as Senator by James A. Garfield, and the latter on his accession to the presidency appointed his political rival and personal friend a member of the International Monetary Conference at Paris. In 1876 Judge Thurman received several votes in the National Democratic Convention for the presidential nomination; in 1880 he received a larger vote; in 1884 he was presented for the nomination a third time; and in 1888 he was nominated for Vice-President by acclamation.

**Tillson, Davis**, military officer, born in Rockland, Me., April 14, 1830; died in Portland, Me., April 30, 1895. He spent two years at West Point, and then resigned because of an accident that required the amputation of his leg. In 1857 he was elected to the State Legislature, in the following year was appointed adjutant general of the State, and early in 1861 was appointed collector of customs of the Waldoboro (Maine) district. In 1861 he was commissioned captain of the 2d Maine Battery. He remained in Maine, owing to the apprehension of difficulty with England on account of the "Trent" affair, till April, 1862, when he reported for duty in Washington, D. C. In the following month he was promoted major and appointed chief of artillery in Gen. Ord's division, and in August, after the battle of Cedar Mountain, became chief of artillery on Gen. McDowell's staff, taking part in the battle at Rappahannock station and in the second Bull Run. He was commissioned brigadier general, to date from Nov. 29, 1862, and after serving as inspector of artillery till April, 1863, he was ordered to Cincinnati as chief of artillery for fortifications in the Department of the Ohio, where he had charge of the defenses of Cincinnati and of the works on the Louisville and Nashville Railroad. He also, while here, raised two regiments of heavy artillery. In December following he was ordered to the supervision of defensive works at Knoxville, Tenn., and was assigned to the command of a brigade in the 23d Corps, with which he served in several engagements during the winter of 1863-'64. From Knoxville, where he constructed what were commended





as the best works in the military division of the Mississippi, he was transferred to the command of the District of East Tennessee, serving there till early in 1865, when he was assigned to the 4th division of the Department of the Cumberland, which he commanded till the close of the war. He was retained in the service till Dec. 1, 1866, having charge of branches of the Freedmen's Bureau in Tennessee and Georgia. He was engaged as a cotton planter in Georgia for a year, and then returned to his birthplace and became interested in the lime and granite business.

**Tyler, Josiah**, clergyman, died in Asheville, N. C., Dec. 20, 1895. He was the son of the Rev. Bennett Tyler, D. D., a former president of Dartmouth College, and was founder and first president of the theological seminary in East Windsor, Conn. For forty years he was a missionary among the Zulus in South Africa under the American Board. During the last ten years he was engaged in literary labor at his home in St. Johnsbury, Vt. He published "Forty Years among the Zulus."

**Upham, Francis William**, author, born in Rochester, N. H., Sept. 10, 1817; died in New York city, Oct. 17, 1895. He was graduated at Bowdoin College in 1837, studied law with his brother, Nathaniel G. Upham, and was admitted to the bar of Massachusetts in 1844. After a few years' practice he became interested in the defense of the Bible against what has since been called the "higher criticism," and passed the remainder of his life in studying in the original tongue and publishing works defending the Scriptures. He received the degree of LL. D. from Union College in 1868. His publications include: "The Debate between the Church and Science," anonymous (Andover, 1860); "Wise Men: Who they were and how they came to Jerusalem" (New York, 1869); "The Star of Our Lord" (1873); "Thoughts on the Holy Gospels: How they came to be in Manner and Form as they are" (1881); "St. Matthew's Witness"; and "The First Words from God." His "Debate between Church and Science" was published in support of Prof. Tayler Lewis's "Six Days of Creation."

**Van der Weyde, Peter H.**, scientist, born in Nymegen, Holland, in 1813; died in New York city March 18, 1895. He was graduated at the Royal Academy in Delft, became Professor of Mathematics and Natural Philosophy at the Government School of Design, founded a journal devoted to mathematics and physics in 1842, and in 1845 received a gold medal from the Society for the Promotion of Scientific Knowledge for a text-book on natural philosophy. He was also editor of a daily paper, in which he took strong ground against what he considered abuses in the Government. In 1849 he removed to New York city, in 1856 was graduated at New York University Medical College, and after practicing for three years was appointed Professor of Physics, Chemistry, and Higher Mathematics at Cooper Institute. He was also chosen to the chair of Chemistry in the New York Medical College. In 1864 the chair of Industrial Science was created for him by Girard College, Philadelphia, and after holding it a few years he returned to New York and became editor of "The Manufacturer and Builder." Prof. Van der Weyde had secured over 200 patents on inventions, mostly electrical, and was also a musician, a composer, and a painter.

**Van Dyck, Cornelius van Alen**, clergyman, born in Kinderhook, N. Y., Aug. 13, 1818; died in Beyrout, Syria, Nov. 16, 1895. He was graduated at Jefferson Medical College in 1837, and went to Syria as a missionary under the authority of the American Board. He soon became proficient in Arabic, was appointed principal of the seminary on Mount Tabor, and undertook the preparation of mathematical and scientific works in Arabic. In 1846 he was ordained to the ministry of the Congregational Church, and on the death of Dr. Eli Smith was sent by the American Board to Beyrout to complete the work on the Arabic version of the Scriptures begun by Dr. Smith. He rewrote the entire work, excepting the Pentateuch, in the style of the Koran, and supervised the publica-

tion by the American Bible Society in New York in 1864-'67. From 1857 till 1880 he was manager of the mission press in Beyrout, and afterward he was physician to St. John's and St. George's Hospitals and Professor of Pathology in the Syrian Protestant College. In Syria he was esteemed as the "Great Hakim," or "Great Healer." On April 2, 1890, on the completion of his fifty years of service among them, the Syrians held a jubilee in his honor. He received the degree of D. D. from Rutgers College in 1865. His publications in Arabic include a series of mathematical, chemical, astronomical, and hygienic works, and translations of the "Shorter Catechism" and the "Schönberg Cotta Family."

**Van Wyck, Charles Henry**, lawyer, born in Poughkeepsie, N. Y., May 10, 1824; died in Washington, D. C., Oct. 24, 1895. He was graduated at Rutgers College in 1843, studied law, was district attorney of Sullivan County, New York, in 1850-'56, and was a Representative in Congress in 1859-'63. While in his second term he was commissioned colonel of the 56th New York Volunteers, with which he served to the close of the war, being promoted brigadier general in 1865. In 1866 and 1868 he was re-elected to Congress. He removed to Nebraska in 1874, was a delegate to the Constitutional Convention in 1876 and a State Senator in 1876-'80, and was elected United States Senator, as a Republican, and took his seat March 4, 1881. In the Senate he distinguished himself by persistency in the attempt to secure the removal of secrecy from its executive sessions. In 1892 he was defeated as the Populist candidate for Governor of the State. Senator Van Wyck was conspicuous in organizing the Farmers' Alliance movement in Nebraska. He was a man of much eccentricity, at one time spending an entire summer with his family in a vacant church which he owned in the fashionable residence part of the national capital.

**Vaux, Calvert**, architect and landscape gardener, born in London, England, Dec. 20, 1824; died in Bensonhurst, Long Island, Nov. 19, 1895. He was educated at the Merchant Tailors' and the F. A. Reynell's schools in London. At the age of nineteen he became an artiele pupil of Lewis N. Cottingham, a prominent architect, and at the close of his three years' indenture took an educational trip on the Continent. In 1850, being then a member of the London Architectural Association, he met the eminent American landscape designer, Andrew J. Downing, who induced him to come to this country as his assistant, and at the close of 1851 made him architectural partner, their office being at Newburg, on the Hudson. After the death of Mr. Downing, in 1852, Mr. Vaux remained for five years in Newburg, his professional engagements rapidly growing in number and importance, and taking him over a wide extent of the seaboard States. An idea of his work at that time may be got from his book "Villas and Cottages" (New York, 1857; 2d edition, 1864). At the suggestion of John A. C. Gray, whose house in Fifth Avenue he had designed, and who remained his staunch friend through life, Mr. Vaux removed to New York to take charge, as architect, of the Bank of New York, and from that time he was identified with the best art life of the metropolis. Landscape painting, then at its best, centered in New York, but the leading city of America was at a low stage both in architectural adornment and in civic dignity. Most of the territory now known as Central Park had been secured, but it was a strip of unkempt suburb, with the ruins of a grand scenery. While the ground was being cleared and roughly inclosed Mr. Vaux, among others, urged that the designs for its landscape treatment be selected in a public competition, and this idea being adopted he sought out Mr. F. L. Olmsted, then engaged as superintendent of labor in closing in the park, and invited his co-operation in preparing a landscape design. The two met after the day's work was over, at Mr. Vaux's house in East Eighteenth Street, and as the result of their labor the design signed "Greensward" was accepted (April



28, 1858). The two men became associated under the firm name of Olmsted & Vaux, and under their hands chiefly, but through various vicissitudes of political administration, the Central Park grew up. On June 13, 1865, Mr. Vaux was employed to make a plan for Prospect Park, in Brooklyn, and urged the change in the boundaries by which a great addition was made to the grounds already acquired and a more picturesque and happy arrangement was rendered possible. Olmsted & Vaux were appointed landscape architects and superintendents (May 29, 1866), and in their reports of 1866 and 1871 presented in a suggestive way and with a light touch what came to be the leading features of a general treatment of city grounds applied by them then and afterward, but with endless variations, to many great parks. Through them chiefly the landscape architect has brought our American elms and maples into harmonious relations with the foliage of all lands, and out of elements as heterogeneous as our population has, in the heart of our cities, framed a picture of pastoral quiet and satisfying beauty. Of Mr. Vaux's individual work in New York city may be noted as typical the Marble Arch, Bowbridge, and Belvidere, and the bridges over drives and sunken roads, with the rare landscape treatment of transverse roads; the beautiful site of the Grant monument and all details of Riverside Park west of the drive; all details of Morningside Park, whose full development is yet to come. In the Niagara reservation Luna Island bridge may be noted. In association with Mr. Olmsted Mr. Vaux's plans and supervision—sometimes one, but generally both—extended over parks in Bridgeport, Conn. (1866); in Newark, N. J. (1867); the South Park, in Chicago (1869), including the grounds afterward used for the World's Fair buildings; Fairmount Park, in Philadelphia (1871); parks in Providence, R. I., and Fall River, Mass. (1872); in Buffalo, N. Y. (1874), and others. In connection with Samuel Parsons, Jr., the present superintendent of the New York City Park Department, Mr. Vaux laid out the grounds of Bryn Mawr College, Pennsylvania (1882); Trinity Cemetery, New York (1884); East River Park, New York (1893); and that at Corlear's Hook (1894). Of public buildings, he designed, besides many others, the Museum of Natural History (1873) and the Metropolitan Museum of Art (1874), both only partly completed. His last finished work was a design for Mulberry Bend Park. "When he signed it," says his daughter, "being then ill in bed, he laid down the pen with a happy sigh and said, 'In that I feel I have put the best work I have to give, and it is my best.'" He was much engaged in his last years in defending in the interests of the city children the sylvan meads and other rural features of the city grounds against encroachments for speedways and for military purposes or for merely temporary utilities. In this most important work he found powerful auxiliaries in Paul Dana and Andrew H. Green. Mr. Vaux at the time of his death was landscape architect of the Department of Parks of New York city, commissioner of the Consolidated Commission of the Greater New York, and landscape architect to the Commission of the State reservation at Niagara. He was an early member of the Union League Club and of the Century Association; also of the National Sculpture Society. He married in 1853 Mary Swan McEntee, of Rondout, N. Y., a sister of the eminent artist, and left two sons and two daughters.

**Vaux, Richard**, penologist, born in Philadelphia, Pa., Dec. 19, 1816; died there March 22, 1895. He was a son of Judge Roberts Vaux, was educated by private tutors, and was admitted to the bar in Philadelphia in 1836. Soon afterward he was appointed bearer of dispatches to the United States minister in London, with whom he remained for a year as Secretary of Legation. During this period he had the honor of dancing with Queen Victoria at a court ball in London. After aiding in reorganizing the United States embassy at Brussels he returned to London,

and became private secretary to United States Minister Andrew Stevenson. In 1839 he returned to Philadelphia. In 1842-'49 he was recorder of deeds of Philadelphia. On Jan. 7, 1842, he was appointed an inspector of the Eastern Penitentiary, and was elected secretary of the board at its first meeting. For more than fifty years he wrote every annual report, prepared nearly 50 volumes on the subject of penology, and delivered numerous addresses on the subject of prison management. About the time of his appointment as penitentiary inspector he was elected comptroller of public schools to succeed his father. After being several times the unsuccessful Democratic candidate for mayor, he was elected to that office in 1855, and completely reorganized the government of the city. In 1858 he was chosen a director of Girard College, and in the following year became president of the board. Mr. Vaux was largely instrumental in framing and passing the act of 1855, which now constitutes the charter of the city of Philadelphia. His last public service was as a member of Congress, elected May 12, 1890.

**Veatch, James Clifford**, military officer, born near Elizabethtown, Ind., Dec. 19, 1819; died in Rockport, Ind., Dec. 22, 1895. He was admitted to the bar, practiced for many years, and was elected to the Indiana Legislature in 1861. On Aug. 9, 1861, he was commissioned colonel of the 25th Indiana Volunteers; on April 28, 1862, was promoted brigadier general; and in August, 1865, was brevetted major general for distinguished services during the war. He took part in the actions at Fort Donelson and Shiloh, the sieges of Corinth, Vicksburg, and Mobile, and the Atlanta campaign. He was appointed adjutant general of Indiana in 1869, and was collector of internal revenue in 1870-'83.

**Volk, Leonard Wells**, sculptor, born in Wells, Hamilton County, N. Y., Nov. 7, 1828; died in Osecola, Wis., Aug. 19, 1895. His father was a marble cutter in Pittsfield, Mass., with whom he learned the trade and worked for several years. In 1848 he went to St. Louis, Mo., where he began modeling in clay without instruction. In 1855 he went to Italy to study sculpture, aided by Stephen A. Douglas, whose cousin he had married. Two years afterward he established himself in Chicago, and had for his first sitter for a portrait bust his distinguished patron, of whom a year afterward he made a life-size statue in marble, which was destroyed in the great fire of 1871. In 1860 he made a portrait bust of Abraham Lincoln in marble, which was destroyed in the same fire. He spent 1868-'69 and 1871-'72 in study in Italy. He was elected an academician of the Chicago Academy of Design in 1867, and was its president for eight years. Among his many works are the Douglas monument in Chicago, the life-size statues of Douglas and Lincoln in the Illinois State Capitol, portrait busts of Henry Clay, Zachariah Chandler, Elihu B. Washburne, and Gen. James Shields, and the statuary for the Henry Keep mausoleum at Watertown, N. Y.

**Waddell, John Newton**, educator, born in Willington, S. C., April 2, 1812; died in Birmingham, Ala., Jan. 9, 1895. He was a son of the Rev. Moses Waddell, D. D., President of the University of Georgia, and was graduated at that institution in 1829. In 1841 he entered the ministry of the Presbyterian Church; in 1848-'57 was Professor of Latin and Greek in the University of Mississippi; and in 1857-'60 held a similar chair in La Grange College, Tennessee. He was then elected president of the last institution, which in 1862 was closed, and he became general superintendent of Presbyterian missions in the Western Confederate army. During 1865-'75 he was Chancellor of the University of Mississippi, and in 1879-'88 he held the same post in the Southwestern Presbyterian University, Clarksville, Tenn. Dr. Waddell was largely instrumental in founding the asylum for orphans of Confederate soldiers in Tuskegee, Ala.; was secretary of the Board of Ministerial Education of the Southern Presbyterian Church from



1874; and received the degrees of D. D. from the University of Nashville in 1851 and of LL. D. from the University of Georgia in 1873.

**Wainwright, William Pratt**, military officer, born in New York city in 1818; died there Oct. 17, 1895. He was graduated at the University of the City of New York; and spent much time in the study of military matters, chiefly in Germany. At the beginning of the civil war he was commissioned major of the 29th New York Regiment, which was composed principally of Germans, with officers educated in German institutions. He distinguished himself at the second Bull Run in August, 1862; prevented the Confederates from turning the right flank of the National army at Turner's Gap, Sept. 14, 1862; and after the battle of Chancellorsville was commissioned colonel of the 76th New York Regiment, with which he served till failing health, from wounds received at Turner's Gap, forced him to resign. On his retirement he was brevetted brigadier general.

**Walker, Charles L.**, historian, born in Otsego County, New York, in 1844; died in Flint, Mich., Feb. 11, 1895. He became a teacher in 1830, removed to Grand Rapids, Mich., in 1836, was secretary of the Territorial Convention, and was elected to the State Legislature in 1840. In 1841 he removed to Springfield, Mass., where he was admitted to the bar; in 1844 settled in Brattleboro, Vt.; and in 1851 made his home in Detroit. He became a professor in the law department of the University of Michigan in 1857, and a judge of the Wayne Circuit in 1867. He published a "Life of Cadillac"; "Michigan from 1796-1805"; "The Civil Administration of General Hull"; and "The Northwest Territory during the Revolution."

**Walsh, Robert F.**, author, born in Kinsale, County Cork, Ireland, in 1858; died in New York city Dec. 28, 1895. He made a specialty of ichthyology, and, besides several books and essays on that subject, published articles relating to the cultivation of fish. By both the British and United States Fish Commissions he was considered an expert in all matters relating to fish culture, and a member of the British commission declared that Mr. Walsh had given many valuable suggestions concerning the development of the mackerel and herring fisheries on the west coast of Ireland. Mr. Walsh had also written a life of Charles Stewart Parnell, was the author of the song "Plain Molly, O," and left an unpublished novel. He received the degree of D. Sci. from Trinity College, Dublin.

**Watts, James W.**, steel engraver, born in Boston, Mass., March 19, 1830; died in Medford, Mass., March 13, 1895. He was one of the last survivors of the old school of line engravers, and for many years was in the employ of the American Bank Note Company. Besides portraits of Longfellow, Whittier, Holmes, Blaine, and Cleveland, he engraved on steel a number of notable paintings, including "The Stag at Bay," "The Sanctuary," and Landseer's "Challenge."

**Wayman, Alexander Washington**, clergyman, born in Caroline county, Maryland, Sept. 21, 1821; died in Baltimore, Md., Nov. 30, 1895. He was one of 12 colored children, 4 of whom were slaves, and 8 born free, and educated himself by means of borrowed books. In 1840 he was licensed to preach, and three years afterward he joined the Philadelphia Conference of the African Methodist Episcopal Church. He was pastor of several churches, secretary of several general conventions, and was elected bishop in 1864. In 1866 he organized the Florida, Georgia, and North Carolina conferences, and as bishop he had supervision over the conferences of Ohio, Pittsburg, Kentucky, Tennessee, and West Tennessee. He received the degree of D. D. from Howard University in 1877, and at the time of his death was the senior bishop of his Church. He published "My Recollections," "Cyclopedia of African Methodism," a work on "Discipline," and other books.

**Webb, Frances Isabel Currie**, author, born in Springfield, N. J., in 1857; died in New York city Dec. 20, 1895. She was the daughter of Judge John L. Cur-

rie, and wife of William Vassar Webb. She began her literary career in early childhood, and became a contributor to juvenile papers and magazines when fifteen years old. In 1873, having become familiar with the Spanish language, she was engaged on the editorial staff of "El Atencio," a Spanish art journal published in New York city, and soon afterward she became known as a writer of short stories and poems and of essays on reform topics. Her best-known publications are "A Tiff with the Tiffins," "Gala-Day Books," and "A Breath of Suspicion."

**Weld, Theodore Dwight**, reformer, born in Hampton, Conn., Nov. 23, 1803; died in Hyde Park, Mass., Feb. 3, 1895. He was educated at Phillips Andover Academy, became general agent of the Society for the Promotion of Manual Labor in Literary Institutions in 1830; studied in Lane Theological Seminary, Cincinnati, Ohio, but withdrew on the suppression of the antislavery society of that institution by the trustees in 1833, and then engaged in delivering antislavery lectures till 1836, when he lost his voice. Soon afterward he was appointed editor of its publications by the American Antislavery Society. In 1841-'43 he was engaged in the antislavery cause in Washington, D. C.; in 1854 established a school in Eagleswood, N. J., where he received pupils irrespective of sex and color; and from 1864 resided in Hyde Park, near Boston, where he taught as long as his strength would permit. He published numerous pamphlets, including "The Power of Congress over the District of Columbia" (1837); "The Bible against Slavery" (1837); "American Slavery as it is; or, The Testimony of a Thousand Witnesses," which is said to have led Mrs. Stowe to write "Uncle Tom's Cabin" (1839); and "Slavery and the Internal Slave Trade in the United States" (London, 1841).

**Wellington, Arthur Mellen**, civil engineer, born in Waltham, Mass., Dec. 20, 1847; died in New York city May 16, 1895. He was educated at the Boston Latin School, and at the age of sixteen began, in the office of John B. Henck, the study of civil and mechanical engineering. He passed an examination for assistant engineer in the navy, but the close of the war and some difficulty with his eyes prevented his following that branch of his profession. His first engagement was in the engineering corps of the Brooklyn Park Department, under Frederick Law Olmsted. In 1868 he began railway work on the Blue Ridge Railroad in South Carolina, serving later as an assistant engineer on the Dutchess and Columbia Railroad in New York. In 1870 he was placed in charge of a division on the Buffalo, New York and Philadelphia Railroad, and was soon made principal assistant. Two years and a half later he became locating engineer of the Michigan Midland Railroad, and later engineer in charge, of the Toledo, Canada Southern and Detroit Railroad. From 1874 to 1878, the active practice of his profession being interrupted by the long financial depression, he devoted himself assiduously to study and to literary work connected with his professional interests. In 1874 he published "The Computation of Earthwork from Diagrams," which met with such success that in the following year he began his principal work, "The Economic Theory of the Location of Railways." This was afterward expanded into a series of articles on "The Justifiable Expenditure for improving the Alignment of Railways," and published in the "Railroad Gazette." Still later these were published in book form, and at once attracted the attention of engineers and railway men. In 1878 he became principal assistant to Charles Latimer, chief engineer of the New York, Pennsylvania and Ohio Railway, and through the courtesy of Mr. Paine, of the Lake Shore and Michigan Southern Railway, he was enabled to make experiments on the resistance of rolling stock, which suggested a paper read before the American Society of Civil Engineers, Jan. 15, 1879. These experiments were influential in establishing formulas for train-resistance at low velocities; and in 1884, in another paper before the same society, he gave the results of



a series of tests on journal friction at low velocities. In 1881, after spending three years on the "Nypano," he became engineer in charge of location and surveys on the Mexican National Railway, and he described his work there in a paper read before the society in July, 1886. The latter part of the three years spent in Mexico he was assistant general manager and chief engineer in charge of location of the Mexican Central Railway. On his return to the United States he turned his attention to technical journalism, and became one of the editors of the "Railroad Gazette." While upon their staff he edited the revised edition of the "Car-builders' Dictionary," in addition to his regular work, and prepared another edition of his "Railway Location" (1887). This second edition was almost a new book, embodying a vast amount of labor. In January, 1887, he became one of the editors in chief and part owner of "The Engineering News," and within two years its subscription list was more than doubled. His originality and the swiftness with which his brain worked were most wonderfully supplemented by infinite care as to statistics and patience in investigating and proving his theories and conceptions. In addition to his editorial work, he often served as a consulting engineer, being called upon for his advice in such important matters as the elimination of grade crossings at Buffalo, the improvement of railway terminals at Toronto, and the foundations of the Board of Trade Building in that city. He was a member of the Board of Engineers that examined and approved the estimates of the Nicaragua Canal in 1890. In 1893 he was called before the Massachusetts Legislature, and at his suggestion the Tremont Street subway, now being built in Boston, was accepted as the best plan for a desired improvement. His last work as consulting engineer was in regard to railway lines in the island of Jamaica. His plans for increasing the facilities of the Brooklyn bridge were unanimously approved by the experts as not only the best offered, but in every way admirable. The trustees feared, however, a greater expense than they wished to incur, though the results predicted by Mr. Wellington from other plans have since followed. He was greatly interested in the study of thermodynamics, and invented an entirely new type of thermodynamic engine, designed to convert heat into mechanical power with a much smaller percentage of loss than the best existing steam engines. His intense devotion to this problem undermined his health, but he finished his experiments and left the matter for practical and commercial development, although he did not live to see it brought to the notice of the world. The daring brilliancy of his imagination was fully equalled by a respect for exact science that made him heedful of every ground for objection, and his great service to the world came from a rare combination of literary ability with scientific knowledge.

**Westbrook, Benjamin Frank**, physician, born in St. Louis, Mo., Feb. 4, 1851; died in Brooklyn, N. Y., April 12, 1895. He was graduated at Long Island College Hospital in 1874, the youngest and first in a class of 57, and became Professor of Surgical Pathology at that hospital and Adjunct Professor of Anatomy and visiting physician to the Methodist Episcopal and St. Mary's Hospitals. Dr. Westbrook was known for his success in the operation of drawing blood from the right lung in cases of pneumonia when it was believed that this was the last chance to save life. He contributed largely to medical literature, his last work being the elaboration of a system of therapeutics.

**Weston, James A.**, engineer, born in Manchester, N. H., Aug. 27, 1827; died there May 8, 1895. When nineteen years old he was appointed assistant engineer on the Concord Railroad, and in 1849 he was promoted to chief engineer. For a series of years he held the office of roadmaster and master of transportation of the Concord and the Manchester and Lawrence roads. As chief engineer of the Concord and Portsmouth Railroad he superintended the construction of the greater part of that line, and subsequently

built the Suncook Valley road and was engineer and builder of Concord's system of waterworks. In 1862 he was elected Mayor of Manchester as a Democrat. In 1871 he was a candidate for Governor of the State against the Rev. James Pike. The election resulted in no choice by the people, but Mr. Weston led the poll and a Democratic Legislature elected him. In 1872 and 1873 he was an unsuccessful candidate for reelection, and in 1874, when the choice of his party the fourth time, he received more votes than his Republican opponent, Luther M. Cutching; but the scattering vote prevented a choice, and the Legislature again chose him for Governor.

**Wheatleigh, Charles**, actor, born in London, England, about 1823; died in New York city Feb. 14, 1895. He was the son of an actor and appeared in a juvenile part with his father. In 1849 he came to the United States and played his first important engagement in support of Charlotte Cushman. Subsequently he played leading parts with Booth, Laura Keane, Joseph Jefferson, John McCullough, Charles Fechter, and others. He was a member of Laura Keane's company in the late fifties. Mr. Wheatleigh made several professional trips to California and Australia and also visited India and New Zealand, and at one time was lessee of the Lyceum Theater in New York city. For about eight years prior to his death he was connected with Augustin Daly's company, and the day of his death he attended a rehearsal of "The Two Gentlemen of Verona" at Daly's Theater. He was the original Danny Man in "The Colleen Bawn."

**Wickliffe, Robert Charles**, lawyer, born in Bardstown, Ky., Jan. 6, 1820; died in Shelbyville, Ky., April 18, 1895. He was the son of Gov. Charles A. Wickliffe. He was educated in St. Joseph's, Augusta, and Center Colleges in Kentucky, studied law, and removed to West Feliciana Parish, Louisiana, in 1846. He was elected State Senator for three terms, became President of that body on the death of Lieut.-Gov. Farnier, and was elected Governor of Louisiana in 1855, serving for four years. At the close of his term he resumed law practice to a limited extent and sought recuperation from ill health in cotton planting. In 1866 he was elected to Congress as a Democrat, but was refused his seat because he would not take the oath required under the reconstruction laws.

**Wilcox, James M.**, inventor, born in Ivy Mills, Pa., Nov. 20, 1824; died in Haverford, Pa., Oct. 23, 1895. In early life he was apprenticed to the paper-making trade, which he followed till 1880, when he engaged in the manufacture of Portland cement. For many years he manufactured the paper used by the United States Treasury Department for its bank notes. He gave special attention to making this paper by machinery and to rendering it difficult to counterfeit, conceiving and producing the localized fiber paper. The chemical paper used by the Treasury Department for its stamps and checks, known as "chameleon" paper because of its sensitiveness when handled, was invented by him, and resulted in preventing the counterfeiting and reuse of internal-revenue stamps. Under an agreement between him and the United States and German governments a mill was established near Berlin for the manufacture of the German currency paper under his patents in 1878.

**Willet, William Marinus**, author, born in New York city Jan. 3, 1803; died in Jersey City, N. J., Dec. 8, 1895. He was a son of Col. Marinus Willet, was ordained a minister of the Methodist Episcopal Church in 1823, was instructor in Hebrew at Wesleyan University in 1838-'41, became a professor in the last year, and founded the Biblical Institute at Newburg, Vt., in 1843, of which he was president till 1848. He edited the "Newburg Biblical Magazine" in 1843-'44, and the "New Bible Magazine" in 1882; and among other works published "Scenes in the Wilderness: Labors and Sufferings of the Moravian Missionaries among the North American Indians" (1842); "A New Life of Summerfield" (1857); "The Life and Times of Herod the Great" (1860); "Herod Antipas; with Passages from the Life of Jesus" (New York,



1866); "The Messiah" (1874); and "The Restitution of All Things" (1880).

**Williams, Charles Frederic**, editor, born in Charlestown, Mass., Oct. 31, 1842; died in Boston, Mass., Dec. 20, 1895. He studied at Harvard Law School, and was editor of the last 8 volumes of the "American and English Encyclopædia of Law." He published, among other works: "The Tariff Laws of the United States, with Explanatory Notes and Citations from the Decisions of the Courts and the Treasury Department (1883); "Index of Cases overruled, distinguished, etc." (1887); and "Digest of Decisions of the Massachusetts Supreme Court" (Vols. CXLII-CLII of the Massachusetts "Reports," 1881). He also was engaged in the preparation of the "Federal Digest" (1886); was a collaborator of the "Annual Digest" and of Jacobs's "Complete Digest."

**Williams, Henry Willard**, physician, born in Boston, Mass., Dec. 11, 1821; died there June 13, 1895. He was educated at the Boston Latin School and at Harvard Medical School, being graduated at the last in 1849. He then spent three years in European hospitals. He was ophthalmic surgeon to the Boston City Hospital from 1864 till 1891; was lecturer in Harvard Medical School in 1869-'71; and was Professor of Ophthalmology there in 1871-'91, when, on retiring, he endowed the chair. He was the founder and first President of the American Ophthalmological Society. He gained the Boylston prize for his essay on "Recent Advances in Ophthalmic Science," and published a "Practical Guide to the Study of Diseases of the Eye" (1862); "Recent Advances in Ophthalmic Science" (1866); "Optical Defects in School Children" (1868); "Our Eyes, and how to take care of them" (1871); and "A Diagnosis and Treatment of Diseases of the Eye" (1886).

**Wilson, James F.**, lawyer, born in Newark, Ohio, Oct. 19, 1828; died in Fairfield, Iowa, April 22, 1895. He was apprenticed to a harness maker, and worked at his trade till 1851, but studied law, and was admitted to the bar in 1852. In 1853 he removed to Fairfield, Iowa. In 1856 he was elected to the State Constitutional Convention; in 1857 to the Legislature, in which he was made chairman of the Committee on Ways and Means; and in 1859 to the State Senate, where he served on the Judiciary Committee, and was chosen presiding officer in 1861. In the last year he was elected to Congress to fill a vacancy, and he was three times re-elected. During the civil war and reconstruction periods he was chairman of the Judiciary Committee; in 1868 was one of the managers of the impeachment trial of President Johnson; and in 1869 was appointed a commissioner for the Pacific Railroad. He was elected to the United States Senate as a Republican, taking his seat Dec. 4, 1883; was re-elected in 1888; and retired on March 3, 1895. In 1861 he introduced a resolution in Congress instructing the Committee on Military Affairs to report an additional article of war prohibiting the use of United States forces to return fugitive slaves and providing for the dismissal from the army or navy of any officer who used troops for such a purpose. The committee acted according to this resolution, and the article was adopted. He also reported the first bill ever reported in Congress for the enfranchisement of the slaves of the District of Columbia; presented the first notice ever given in Congress of an amendment to the Constitution abolishing slavery; reported and carried through the House a bill giving freedom to the wives and children of colored soldiers, and reported the Civil Rights bill. Throughout his official life he was known as the "Friend of the Slave."

**Winter, Herman**, shipbuilder, born in Prussia in 1828; died in Brooklyn, N. Y., Sept. 4, 1895. He was brought to the United States when two years old, and on leaving school entered the Morgan Iron Works, of which he became manager. In this place he had charge of the work of adapting the improvements and new ideas in marine architecture, and under his management propellers were substituted for side wheels in ocean steamships. He spent several years

abroad, setting up heavy engines that had been built in New York and superintending the fleet of steamboats belonging to the Danube Navigation Company, returning to the United States shortly before the civil war. He resumed his studies of marine architecture and made the designs for one of the first ironclad vessels built by the Italian Government. During the war the greater part of the Morgan fleet of steamships was taken by the United States Government for use as transports and cruisers, and Mr. Winter superintended the equipment of several large plants required for the construction of war vessels. The first twin-screw steamship launched in the United States was designed by him. From the close of the war till his retirement he was chief engineer of the Morgan line of steamships, and he held the same place with the Metropolitan line. Mr. Winter invented a rotary cut-off for beam engines, a patent wharf drop, and other devices which were never patented, but are in use in the steamships that he designed.

**Wright, Edward**, military officer, born in Salem, Ohio, June 27, 1824; died in Des Moines, Iowa, Dec. 6, 1895. He removed to Iowa in 1852, and was elected to the Legislature in 1855, 1857, and 1859. Early in 1862 he was commissioned major of the 24th Iowa Infantry, and at the close of the war, during which he was twice wounded, was brevetted brigadier-general of volunteers. He was returned to the Legislature, and was elected Speaker in 1865 and Secretary of State in the following year, serving for three terms. On retiring, in January, 1870, he was appointed secretary of the Capitol Commission.

**Wright, Henry**, father of professional baseball, born in Sheffield, England, Jan. 10, 1835; died in Atlantic City, N. J., Oct. 3, 1895. He came to the United States when an infant and learned the jeweler's trade in New York city. In 1859 he became a professional player in the St. George Cricket Club; and on the organization of the Knickerbocker Baseball Club, a pioneer in that sport, he joined it, and for six years played in the principal games of both clubs. He joined the Union Cricket Club of Cincinnati in 1865, and in the following year became captain of the famous Red Stocking Baseball Club of that city, for which he played center field till 1870. From 1871 till 1882 he was manager, captain, and secretary of the Boston Baseball Club, and during this engagement he took the Boston and Athletic Clubs' nines to England for a series of games. In 1882 he was engaged by the Providence (R. I.) club, and in 1884 by the Philadelphia club, remaining with the last till 1893, when failing eyesight obliged him to resign. His sight partially returned in 1895, and he was appointed chief of umpires of the National League.

**Wylie, Theophilus Adam**, educator, born in Philadelphia, Pa., Oct. 8, 1810; died in Bloomington, Ill., June 11, 1895. He was a son of Samuel Brown Wylie, D. D.; was graduated at the University of Pennsylvania in 1830, and was appointed an instructor there. In 1837-'52 he was Professor of Natural Philosophy and Chemistry in the University of Indiana; in 1852-'55 was Professor of Mathematics in Miami University, and in 1855-'64 held his former chair in the University of Indiana, also acting as president in 1859. From 1864 till his retirement, in 1886, he served the university as Professor of Ancient Languages, and on retiring was made professor emeritus. He was pastor of the Reformed Presbyterian Church in Bloomington, Ill., in 1838-'52 and 1855-'69. He published a "History of the University of Indiana."

**Yost, George W. N.**, inventor, born in New York in 1831; died in New York city Sept. 26, 1895. He was brought up on a farm, developed a fondness for mechanics, and was apprenticed in an agricultural-implement manufactory. After serving his time he was employed for many years in the manufacture of Acme mowers and reapers, for which he suggested many valuable improvements. Subsequently he became interested in writing machines, and invented the typewriter bearing his name. For a description of it, see "Annual Cyclopædia" for 1890, page 817.



About two years before his death he organized the Union Typewriter Company for the manufacture and control of writing machines. He was deeply interested in spiritualism for several years before his death, and claimed to be able to make spirits of the dead communicate with the living by means of a typewriter.

# OBITUARIES, FOREIGN, FOR 1895.

**Aberdare, Henry Austin Bruce**, Baron, an English politician, born in Duffryn, Wales, April 16, 1815; died in London, Feb. 25, 1895. His father's name was originally Knight, but he changed it to Bruce, and afterward to Bruce-Pryce. The family resided in France till the son was twelve years old. He studied at Lincoln's Inn—in the chambers of his uncle, who became Lord-Justice Knight Bruce—and was called to the bar in 1837; practiced a few years; became a police magistrate in Wales in 1847; and in 1852 was elected to Parliament for Merthyr Tydvil in the Liberal interest, retaining the seat until he was displaced, in 1868, by an earnest advocate of disestablishment. He was Under Secretary of State for the Home Department in 1862, and Vice-President of the Council in 1864. Having made himself familiar with the working of the education acts, he aided Mr. Forster in elaborating a new system of elementary education. He was a charity commissioner and one of the commissioners of Church estates. After Mr. Gladstone's return to office in 1868, Mr. Bruce, although he had lost his seat, was appointed Home Secretary, and was elected member for Renfrewshire. He introduced in 1871 a licensing bill for the control of the drink traffic that proposed the sale at auction of all licenses that were to be renewed. This raised such an outcry that the obnoxious clause was withdrawn, and the measure failed to pass. In 1872 he was more successful with the mines regulation act. When the Cabinet was reconstructed in 1873 Mr. Bruce gave up his place as Home Secretary to Robert Lowe, and on being raised to the peerage as Lord Aberdare succeeded Lord Ripon as President of the Council. His Radical licensing bill was the principal cause of the defeat of the Liberals at the polls in the following year and of his own permanent retirement from office. He occupied himself thenceforth with social reforms and educational questions and became interested in geographical exploration. He presided over the Social Science Congress in 1875, and in 1883 he was elected President of the Royal Geographical Society. He published a life of his father-in-law, Sir William Napier (1864).

**Albrecht, Friedrich Rudolf**, Austrian archduke and general, born in Vienna, August 13, 1817; died there Feb. 18, 1895. He was the son of the Archduke Karl, a great uncle of the Emperor Franz Josef. Entering the army when twenty years old, he served two years with a cavalry regiment in Hungary, and in 1840 was placed in command of a brigade. He studied faithfully the art of war with the Italian army of Marshal Radetzky, and when he was made lieutenant field marshal in 1843 and placed in command of the forces in Moravia and Silesia he put into practice the peace manœuvres originated by that officer. Subsequently, under his supervision, this method of training was extended to the whole Austro-Hungarian army. In March, 1848, when he was commander-in-chief at the capital, he ordered the troops to fire upon the mob and thus provoked the revolution. Resigning his command, he shortly afterward joined Marshal Radetzky's army in Italy and fought against the King of Sardinia, distinguishing himself as a volunteer in the battle of Santa Lucia. When Carlo Alberto renewed the war, in 1849, he returned to Italy, and, as commander of a division in the advanced guard, he took a prominent part in the battles of Mortara and Novara. From 1851 to 1860 the Archduke Albrecht was commander in chief of the 3d Army Corps and civil and military Governor of Hungary. He assumed command of the 8th Army Corps at Vicenza in October, 1860. In April, 1863, he was promoted to be a field marshal, and, having been made commander-in-chief of the broken and disheartened Aus-

trian army, he achieved, on June 24, 1866, a brilliant victory at Custozza over greatly superior forces. Returning to Austria with his victorious troops, he raised a new army of 200,000 men to repel the Prussian invasion of Bohemia. To him is due a great part of the credit for the honorable terms secured from Prussia in the peace of 1866. From 1869 the archduke was inspector general of the army, in which he introduced many reforms. He published works on military subjects.

**Alcester, Frederick Beauchamp Paget Seymour**, Lord, an English naval officer, born April 12, 1821; died in London, March 3, 1895. He entered the navy as midshipman in 1834, and was commissioned a lieutenant in 1842 and commander in 1847. As a volunteer in the Burmese war in 1853 he led the storming party that captured the pagoda at Pegu. In the Crimean War he commanded a steamer that went to the White Sea. He commanded the Mediterranean squadron in 1880, when he compelled the Turks to evacuate Dulcigno, on July 11, 1882, he bombarded Alexandria. He was commander on land as well as on sea of the subsequent operations in Egypt until the arrival of Gen. Wolseley. For his services in this campaign he was made Baron Alcester and was voted a grant of £25,000. From 1883 to 1885 he served at the Admiralty as second naval lord, and in 1886 he was retired.

**Alexander, Mrs. Cecil Frances (Humphrey)**, an Irish poet, born in County Wicklow in 1818; died in Londonderry, Oct. 12, 1895. In 1847 she married the Rev. William Alexander, who became Bishop of Derry and Raphoe in 1867. She was very active in religious and charitable works. Of some of her hymns Gounod declared they seemed to set themselves to music. Among the most noted are "The Roseate Hue of Early Dawn," "All things Bright and Beautiful," and "There is a Green Hill far away." Her most famous poem is "The Burial of Moses." Mrs. Alexander's published volumes include: "Verses for Holy Seasons" (London, 1846); "Narrative Hymns" (London, 1853); "Legend of the Golden Prayer" (1859); "Verses from Holy Scripture"; "Hymns, Descriptive and Devotional"; "Hymns for Little Children"; "Poems on Old Testament Subjects" (1857); "Moral Songs"; "The Baron's Little Daughter and other Tales in Prose and Verse"; "The Lord of the Forest and his Vassals"; and "Sunday Book of Poetry" (edited).

**Arndt, Wilhelm**, a German historian, born in Kulm, West Prussia, in 1839; died in Leipzig, Jan. 10, 1895. He studied history at Göttingen under Prof. Waitz, and devoted himself to original research. In 1862 he became a collaborator on the "Monumenta Germaniæ Historica," for which he edited the writings of Gregor of Tours, Ranoul of Salerno, and Gislbert of Hainault. In 1874 he published "Kleine Denkmäler aus der Merwinger Zeit" and the first part of "Schrifttafeln zum Gebrauch bei Vorlesungen," of which the second series was published in 1878. In 1875 he became privat docent at Leipzig University, and in the following year he was appointed Professor *Extraordinarius* of History. He became later conjoint director of the historical seminary, and in that capacity he published palæographical works. In 1894 he was made Ordinary Professor of History and Allied Sciences. Prof. Arndt edited Goethe's letters to the Gräfin von Stolberg, and also his poem of "Ieri und Bätely" in its original form.

**Bell, John**, an English sculptor, born at Hopton, Suffolk, in 1811; died in March, 1895. He studied in the Royal Academy schools, and exhibited works at Somerset House as early as 1832. By 1837, when his still popular bust of "Psyche" was exhibited at the British Institution, his position as a sculptor was generally recognized. The list of his productions is long and creditable, but his abilities were rather those that appeal to popular sentimentality than to a severe taste. "Jane Shore" and "The Eagle-Slayer" are two of his most popular works. Many of his statues have been cast in bronze and adorn public



buildings and squares in London. He was the author of "Ivan: A Tragedy," "Primary Sensations of the Mind," and manuals of drawing and design.

**Benavides y Navarrete, Francisco de Paola**, a Spanish prelate, born in Baeza, Jaen, May 14, 1810; died in Saragossa, March 30, 1895. He was a learned and eloquent priest and an ardent defender of the Catholic faith, and in 1857 was created Bishop of Sigüenza. After the accession of Alfonso XII he was selected to the office of Patriarch of the Indies, and at the same time was created a cardinal, March 12, 1877. In 1881 he was appointed Archbishop of Saragossa.

**Bennett, William Cox**, an English poet, born in Greenwich, Oct. 14, 1820; died in Blackheath, March 4, 1895. He was active in educational and other reforms, and as a song writer enjoyed considerable popularity. After the death of Longfellow he suggested that the bust of the American poet should be placed in Westminster Abbey, and he formed a committee of 500 to effect it, headed by the Prince of Wales. He published the following works: "Poems" (London, 1850); "The Trial for Salamis" (Greenwich, 1850); "Endowed Parish Schools and High Church Vicars" (Greenwich, 1853); "Queen Eleanor's Vengeance, and Other Poems" (1856); "War Songs" (1857); "Songs by a Song Writer" (1858); "Baby May, and Other Poems" (1859); "The Worn Wedding Ring, and Other Poems" (1860); "Our Glory Roll, and Other National Poems" (London, 1867); "Contributions to a Ballad History of England, etc." (London, 1869); "School Book of Poetry" (London, 1870); "Songs for Sailors" (London, 1872); "Narrative Poems and Ballads" (London, 1879); "Songs of a Song Writer" (London, 1876); "Sea Songs" (London, 1878). His work shows facility of execution and considerable range of feeling.

**Blackie, John Stuart**, a Scottish author, born in Glasgow in July, 1809; died in Edinburgh, March 2, 1895. He studied at Marischal College, Aberdeen, and afterward at the University of Edinburgh, but he would not give enough attention to mathematics to win his degree, and in 1829 was sent to complete his studies in Göttingen, Berlin, and Rome. When he returned he wrote articles on German literature and education, and in 1834 published a translation of "Faust." He was admitted to the bar in that year, but gave his attention rather to literature. In 1841 he was appointed professor in Marischal College, and became known as an enthusiastic and inspiring teacher. In 1852 he was called to the chair of Greek in Edinburgh University. He had begun an agitation for the elevation and broadening of university education in Scotland, which, with the help of others, he carried on henceforth with great vigor until he succeeded in having the universities act passed in 1858. He retired from his professorship in 1882, but continued to write and lecture till the end of his life. As a teacher of Greek, he aimed to inspire his students with a love for Greek life and thought rather than the aims of exact scholarship, in which he was no adept, and he was one of those who regard Greek as a living language and the modern Greeks as heirs and exemplars of the intellectual qualities of the ancients. Besides his philological writings, Prof. Blackie published popular books on ethical, religious, æsthetic, and literary subjects, and read popular lectures on many subjects, especially on the social and national life of his native land, on which he took advanced grounds, not as a politician, but as an ardent patriot. He was interested in the preservation of the Gaelic language, and by his individual efforts raised the money to endow a Celtic chair at Edinburgh University. His principal published works are a translation of *Æschylus* (1850); "On Beauty" (1858); *Homer translated into ballad verse* (1866); "Lays of the Highlands and Islands" (1872); "Horræ Hellenicæ" (1874); "Self-culture" (1874); "Language and Literature of the Scottish Highlands" (1875); "Natural History of Atheism" (1877); "Lay Sermons" (1881); "Altavona" (1882); "Wisdom of Goethe" (1883); "Life of Burns" (1888); "Scottish Song" (1888); "Songs of

Heroes" (1889); and "Essays on Subjects of Moral and Social Interest" (1890).

**Bogran, Luis**, ex-President of Honduras, born in Santa Barbara, June 3, 1849; died in Guatemala city, July 10, 1895. He was educated in his native town and at a college in Comayagua, and studied law. In 1873 he joined the Guatemalans in the war against Salvador and served as chief of staff in his native province, of which he was made governor at the termination of the war. He retired in 1876, but in 1877 was again appointed governor, served as commissioner for Honduras to the Paris Exposition in 1878, and in 1879 was elected President of Honduras by an almost unanimous vote. He was again elected in 1883. He organized and directed a movement for the union of the Central American States into a single republic, in which Nicaragua should not have too great a preponderance.

**Bonaparte, Lucien Napoléon**, an Italian prelate, born in Rome, Nov. 15, 1828; died there Nov. 19, 1895. He was a son of Lucien Bonaparte, Prince of Canino. Entering the Church at an early age, he filled with zeal and intelligence various posts in the Roman Curia, and was created a cardinal on March 13, 1868.

**Bonghi, Ruggiero**, an Italian scholar and politician, born in Naples, March 20, 1828; died in Torre del Greco in October, 1895. He began the study of philosophy, and at eighteen published a partial translation of "Plotinus on the Beautiful." A year later he put forth a translation of Plato's "Philebus," with critical notes. During the revolutionary excitements of 1848 Signor Bonghi founded the journal "Il Nazionale," and subsequently he was banished from the Kingdom of Naples. In 1859 he became Professor of Philosophy at the new Academy of Milan, and in 1864 of Greek Literature at Turin. He was subsequently called to the University of Rome as Professor of Ancient History, and at various times held other similar posts. He was also connected with the management of newspapers at Naples and elsewhere. He was a strong advocate of secular education, and from 1874 to 1876 was Minister of Public Education. He supported the second ministry of Signor Crispi, although he had formerly been opposed to him, and almost his last public utterances were in behalf of the present Italian Government. The more important of his many works are: "Storia della Finanza Italiana"; "La Vila e i Tempi di Valentino Basini" (1869); "Frati, Papi e Re, discussioni tre" (Naples, 1873); "Pie IX ed il Papa Futuro" (Milan, 1877); "Cavour, Bismarck, Thiers"; "Bibliografia Storica di Roma Antica" (Rome, 1879); "Roma Pagana" (1886).

**Brock, Edgar Philip Loftus**, an English architect, died in London, Nov. 2, 1896. He studied at the Royal Academy schools and entered the offices of the Messrs. Habershon, architects, in 1851. Some years later he became a member of the firm of E. Habershon & Brock, and on the retirement of Mr. Habershon, in 1879, Mr. Brock conducted the entire practice of the firm. He designed a great number of rural and other churches as well as secular buildings, while his restorations of ancient edifices were accomplished in a spirit of intelligent conservatism. He developed a mode of timber construction in thirteenth-century Gothic for mission churches that was notably effective. In those buildings the exterior walls were of brick or masonry, and the pillars, arcade, and clearstory were of timber.

**Brot, Charles Alphonse**, a French novelist, born in 1809; died in Paris, Jan. 4, 1895. He began to publish verses when he was twenty-one years old, but soon he turned to the historical romance. From 1848 till 1872, he had the direction of the printing and publishing department of the Ministry of the Interior. He was one of the founders of the Société des Gens de Lettres, and of the Société des Auteurs Dramatiques. He was the author of 4 plays and many novels. Some of the earlier ones are: "Ainsi soit il," "Histoire du Cœur," "Le Tour de Londres," and "Jane Grey." "Les Espions" was published in 1874, and "Décès Raison" in 1881.



**Browne, Robert William**, an English clergyman, born in Kennington, Surrey, Nov. 12, 1809; died in Wells, Somerset, Dec. 12, 1895. He was educated at St. John's College, Oxford, and became Prebendary of St. Paul's, London, in 1845. In 1860 he was made Archdeacon of Bath and rector of Weston-super-Mare, resigning the rectory in 1876, on becoming honorary fellow of King's College, London. He was the author of a "History of Greek and Roman Classical Literature" (1851-'53); the "History of Greece" and "History of Rome" in "Gleig's School Series"; and "History of Rome to the Death of Domitian," and translated the "Ethics" of Aristotle.

**Buchanan, Sir George**, an English sanitarian, born in London in 1831; died there May 5, 1895. He was educated at University College, where he won honors and prizes, was graduated in medicine at the London University in 1856, assisted his father, a metropolitan surgeon, in his practice, and made himself noticeable by his interest in sanitary affairs, having been nominated medical officer to St. Giles in 1856, when public health officers began to be appointed. He originated new methods of sanitary investigation, studied the effects of overcrowding and other insanitary conditions on the spread of disease, worked at the prevention of smallpox and cholera epidemics, and invented a system for collection of statistical information regarding the health of his district, in which the results of his labors soon became apparent in the improved condition of the public health. His inquiries into the working of the vaccination acts, begun at the request of the Privy Council, led to the amendment of those acts in 1867. He began in 1862 an inquiry into the prevalence of typhus fever in the north of England during the cotton famine, and devised methods of prevention. In 1865 he reported upon the improved health in the manufacturing towns resulting from the adoption of better methods of drainage, the removal of filth, and water supply. His report established the conclusion that even the mortality from consumption depends largely on drainage. He was appointed a medical inspector under the Privy Council in 1869, and in 1871 he was transferred to the Local Government Board as assistant medical officer, becoming head of the department ten years later. He organized the system of defense against the invasion of cholera, and perfected various other sanitary precautions that have reduced mortality in the United Kingdom. He retired in 1892, and was knighted. As a member of the council of University College and of the senate of the university, he took a great interest in educational matters, especially university education for women.

**Bucknall, Benjamin**, an English architect; died in Algiers at an advanced age, Nov. 16, 1895. He went to Algeria about 1873, and practiced his profession there with much success. He very skillfully adapted Moorish art to modern requirements, and built or reconstructed many fine villas near Algiers for French and English residents as well as for native owners. He was the friend of Viollet-le-Duc, and was the guest of that famous architect when the latter was building the chateau of Pierrefonds for Napoleon III. He translated into English "Painted Tapestry," by J. Godon (1879), and the following works by his friend Viollet-le-Duc: "How to build a House" (1874); "Annals of a Fortress" (1875); "Habitations of Man in All Ages" (1876); "Lectures on Architecture" (1877); "Mont Blanc" (1877).

**Bunge, Nicholas Christianovich**, a Russian statesman, born in Kieff in 1823; died in St. Petersburg, June 15, 1895. He gained distinction as a Professor of Political Science, Economy, and Statistics, and published valuable treatises on the bases of political economy, on the system of public accounts in England, on the theory of credit, on the restoration of a metallic currency, etc. In 1881 he was appointed Minister of Finance. His financial policy was severely criticised by Katkoff and others, as being too theoretical and unsuited for the needs of the country, and in 1886 he was replaced by Vishnogradsky.

**Canrobert, François**, a French soldier, born in Brittany in 1809; died in Paris, Jan. 28, 1895. He entered the military school of St. Cyr in 1826, was graduated with distinction, and served as a private soldier till he won a commission in the infantry as sub-lieutenant. Becoming a lieutenant in 1832, he was ordered in 1835 to Africa, where he took part in the expedition to Mascara, gained a captaincy by meritorious service in Oran, was wounded in the storming of Constantine, and was made a lieutenant colonel in 1846 and colonel in 1847. He led an expedition against Ahmed Seghir in 1848, and, being transferred to the command of a zouave regiment, won a victory over the Kabyles. In 1849 he commanded the zouaves and led one of the columns in the attack upon Zaatcha, winning the grand cross of the Legion of Honor and promotion to the rank of brigadier general. In 1850 he surrounded the Arabs in Narah and destroyed their stronghold. He returned to France in that year and identified himself with the cause of the Prince President, who made him one of his aides-de-camp. He held a command at Paris, and by his energetic suppression of the popular uprising insured the success of the *coup d'état*. In January, 1852, he was commissioned to visit the prisons and select among the political prisoners subjects for imperial clemency. When the Russian war broke out, in the spring of 1854, he was placed in command of the 1st Division of the Army of the East, and took a prominent part in the battle of the Alma, where he was wounded by the bursting of a shell. When, after a few days, St. Arnaud resigned, Gen. Canrobert succeeded to the chief command. He marched upon Sebastopol and, after finding it impossible to reduce the place by bombardment in front, carried out the operations for a complete investment in the face of great obstacles. He was wounded at the battle of Inkermann while leading a charge of the zouaves. He and Lord Raglan fell out on the question of the best method of attack, and in May, 1855, he resigned the chief command to Marshal Pélissier on the plea of failing health and returned to France. Napoleon III sent him to Denmark on a diplomatic mission. The Italian war of 1859 gave him another opportunity to display his talents as a commander in the field. At the head of the 3d Corps of the Army of the Alps he showed his usual fearlessness of personal danger in the battle of Magenta, and at Solferino he came to the aid of Marshal Neil and saved the day by an able movement. At the end of the war he was made a marshal of France. He commanded the camp at Châlons in 1862, and subsequently the army of Paris. When the war with Prussia broke out in 1870 Marshal Canrobert took command of the camp at Châlons and attempted to organize the reserves, but was so hateful to the detachments from Paris that he was unable to establish order and discipline, consequently he gave up the task and was placed in command of the 6th Corps at Lyons. After the defeat at Forbach he served under Bazaine in and around Metz, exhibiting in all the engagements the utmost intrepidity under fire. At Vionville and at Gravelotte he displayed ability as well as gallantry. On the capitulation of Metz he was taken as a prisoner to Germany, whence he returned after the signature of the preliminaries of peace. Thiers received him courteously, but would not give him a command. He was appointed a member of the Supreme Council of War in 1872, and soon afterward resigned in dudgeon, but was induced by Marshal MacMahon to withdraw his resignation. When his name was proposed in 1873 for the command of the Army of Versailles the Council of Ministers rejected the proposition. In 1876 he was elected as a Bonapartist to the Senate, and he sat till 1879, speaking only twice. He failed to be re-elected from the Lot Department, but was returned later from the Department of the Charente, and was re-elected in 1885. Canrobert was the last surviving marshal of France. The German Kaiser telegraphed condolences to the family of the "heroic defender of



St. Privat," but the extreme Republicans in the French Chamber refused to vote to give the honor of a national funeral to "the accomplice of the *coup d'état*" of Dec. 2, 1851.

**Cantri, Cesare**, an Italian historian, born in Brivio, near Milan, Dec. 2, 1805; died March 11, 1895. At seventeen he became Professor of Literature in the College of Sondrio. He afterward went to Milan, became an ardent Liberal, and on account of the sentiments expressed in his "Reflections on the History of Lombardy in the Seventeenth Century" was imprisoned for three years by the Austrian Government. During his captivity he published a popular historical romance, "Margherita Pusterla" (1835). His "Storia Universale" (1837) has been translated into English, French, Danish, and German. Among his other works are: "Storia degli Italiani" (1854); "History of Italian Literature" (1851); "History of the Last Hundred Years" (1852); "Milano, Storia de Popolo e pel Popolo" (1871); "Cronistoria della Indipendenza Italiana" (1873); "Commento Storico ai Promessi Sposi, o la Lombardia nel Secolo XVII" (1874); "Donato ed Ercole Silva Conti di Biandrate," with C. Rorida (1876); "Caratteri Storici" (1881); "Beccaria, et le droit pénal" (1885).

**Carrière, Moritz**, a German philosopher, born in Griedel, Hesse, March 5, 1817; died in Munich, Jan. 19, 1895. He studied in Giessen, Göttingen, and Berlin, and spent some years in Italy, where he devoted himself to æsthetics amid the master works of art. Returning to Germany, he became a privat docent at the University of Giessen, and in 1849 was made professor. In 1853 he went to Munich, and lectured on æsthetics in the university, and later also in the Academy of Arts on the history of art. He acquired fame as a philosopher, starting as a Hegelian, of original views, and diverging more and more from his master. His first essays in this field were "Vom Geistlichen" and "Die Religion in Ihrem Begriff," both published in 1841. In 1843 appeared "Der Kölner Dom als freie deutsche Kirche." His translation of the letters of Abélard and Héloïse passed through several editions. Carrière's system of philosophy sought to reconcile pantheistic conceptions of the world with deism. His chief works are "Die philosophische Weltanschauungen der Reformationszeit"; "Religiöse Reden und Betrachtungen für das deutsche Volk"; "Das Wesen und die Formen der Poesie"; "Ästhetik"; "Die Kunst im Zusammenhang der Kulturentwicklung und die Ideale der Menschheit"; "Erbauungsbuch für Denkende"; and "Die sittliche Weltordnung." He also wrote an historical poem, "Die letzte Nacht der Girondisten," an essay on Cromwell, and "Deutsche Geisteshelden im Elsass."

**Cates, William Leist Readwin**, an English writer, born in 1821; died in Hayes, Middlesex, Dec. 9, 1895. Mr. Cates was a well-known scholar whose "Dictionary of General Biography" (1867) passed through four editions, the latest, revised and enlarged, appearing in 1881. He was also the author of "The Pocket Date Book" (1863); "A History of England from the Death of Edward the Confessor to the Death of King John" (1874); and, with B. B. Woodward, of an "Encyclopædia of Chronology" (1872). His translation of D'Aubigné's "History of the Reformation" was issued in 1863.

**Cayley, Arthur**, an English mathematician, born in Richmond, Surrey, Aug. 16, 1821; died in Cambridge, Jan. 26, 1895. He was graduated at Trinity College, Cambridge, as senior wrangler, was soon called to the bar, and for fourteen years was a conveyancer at Lincoln's Inn. When the Sadlerian professorship of Mathematics was established at Cambridge, in 1863, Cayley was appointed to the new chair, which he held until his death. As a mathematician he was one of the foremost men in his profession, and his abilities were everywhere recognized and testified to by degrees conferred and medals received from many learned societies in various countries. His talents ranged over a wide field, and he was learned in many

sciences besides his own. A collected edition of his works is in process of publication at the University Press. Among separate publications are "An Elementary Treatise on Elliptic Functions" (1876); "Addition to Memoirs on the Transformation of Elliptic Functions" (1879); "Tenth Memoir on Quantics" (1879); and "Single and Double Theta Functions" (1881).

**Chesney, Sir George Tomkyns**, an English general, born in 1830; died in London, March 31, 1895. He was educated at Woolwich, and joined the Bengal Engineers in 1848. He was made lieutenant general in 1885, and from 1870 to 1880 was President of the Royal Indian Engineering College. He was the author of "Indian Polity: A View of the System of Administration in India" (1868); "The Battle of Dorking: Reminiscences of a Volunteer" (1871); and the novels "A True Reformer" (1873); "The New Ordeal" (1871); "The Private Secretary" (1881); and "The Lesters." "The Battle of Dorking" was published anonymously first in "Blackwood's Magazine," which it sent into a fifth edition, and afterward in a pamphlet which is said to have sold to the number of 100,000 copies.

**Christian, Ewan**, an English architect, born Sept. 20, 1814; died in Hampstead, London, Feb. 21, 1895. He was educated at Christ's Hospital, and in 1830 was articled to the architect, Habershon, for whose work on "Half-timbered Houses" he made sketches. In 1837 he traveled on the Continent, and on his return he established himself in business. His first building was the parish church of Hildenborough, near Tunbridge, and his first important church restoration, a department in which he became eminent, was St. Mary's at Scarborough. He restored the cathedrals of Carlisle and Southwell as well as several of the London City churches. His most important work, the National Portrait Gallery, adjoining the National Gallery in London, he did not live to see completed. From 1850 he held the post of consulting architect to the Ecclesiastical Commissioners and several similar appointments. He was President of the Institute of British Architects from 1884 to 1886, and received the Institute gold medal in 1887.

**Churchill, Randolph Henry Spencer**, an English statesman, born in Blenheim Palace, Feb. 13, 1849; died in London, Jan. 24, 1895. He was the third son of the seventh Duke of Marlborough and of a daughter of the Marquis of Londonderry, who was a grand-niece of Lord Castlereagh. Lord Randolph Churchill was educated at Eton School and at Merton College, Oxford. At Eton, where he was a contemporary of Arthur Balfour and Lord Rosebery, he manifested his energy and ingenuity in frolicsome pranks, and at the university he set out on a gay and reckless career, but applied himself to study in order to get his degree in 1871, and even took honors in modern history and jurisprudence. He traveled through Europe, spending much time in Austria. He wavered between a military or a diplomatic career, and seeing no opportunity in either for the exercise of his restless energies, embraced the chance that was presented by the dissolution of Parliament early in 1874 to go into politics. He was elected to represent the petty constituency of Woodstock. As it was a family borough, he was not called upon to unfold his political principles, nor did he profess any except antagonism to Gladstone. Though his father held a high





office in the Conservative Government, Lord Randolph was not trained or minded to earn the rewards of public life by docile submission to party discipline. He was too much of an English aristocrat, however, to rebel against forms and precedents, and in this Parliament he kept quiet, studying attentively the men and the procedure and treasuring for future use his observations of political arts and ruses and the thrusts and wards of parliamentary debate. He made only one effort to gain the attention of the House, when, as became the member for Woodstock, he made a spirited plea for the preservation of small boroughs. His constituency elected him with a diminished majority in 1878. Though his father was Lord Lieutenant of Ireland, Lord Randolph Churchill, seeing the prestige of the Conservative party waning, was not content to sit behind ministers whose lack of originality and force made him impatient. Going over to the front bench below the gangway, he made a slashing onslaught on the President of the Local Government Board, Selater-Booth, denouncing his county government bill as a most radical, democratic measure. He had not yet evolved the principles of Tory Democracy, but he was never devoted to political principles and consistency any more than his prototype, Disraeli. When the Liberals came in with an enormous majority in 1880, when the tried leaders of the Conservative party, the "old gang," who antagonized the democratic masses and were unable to adapt themselves to the methods and measures that were necessary to captivate the new electorate, were stunned by their unexpected defeat and spellbound by Gladstone's overpowering ascendancy, the Fourth party arose to show that there was vitality left in the Conservative party. The small group that soon came to acknowledge Lord Randolph Churchill as its leader was composed of young men who all had the brilliant career of Lord Beaconsfield before their minds, and who had caught the spirit of the assimilative genius and philosophic imagination that enabled him to infuse the new life of the age into the stagnant party, to lift it above selfish class interests and arrogant prejudice, and draw it almost unwittingly and unwillingly into the historic movement. The chief members of the group that was nicknamed "the Fourth party" were Lord Randolph Churchill, Arthur J. Balfour, Sir Henry Drummond Wolff, and Mr. Gorst. When Sir Stafford Northcote, the leader of the Opposition, refrained from challenging Mr. Gladstone on the side issue of the seating of Mr. Bradlaugh, Mr. Gorst, Sir Henry Wolff, and Lord Randolph Churchill saw an opportunity to place both leaders in an awkward predicament by a theatrical stroke that would give a sensational prominence to themselves. Lord Randolph Churchill took the lead of the group. After appealing to Mr. Gladstone to exclude the atheist and disloyal person, he carried a motion that Mr. Bradlaugh should not be allowed to take his seat, and in 1881 a similar motion. Casting about for subjects for a serious programme, he allied himself at first with the Protectionists and propounded a scheme for taxing the products of foreign skilled labor and applying the £20,000,000 thus raised to the relief of the distressed agriculturists. Two years later he denounced the impending extension of the franchise as an attempt of impostors to cover up their failure to fulfill their promises. In the House of Commons he derided Sir Stafford Northcote and attacked Mr. Gladstone, often in such reckless style as to damage only his own reputation, but, on the whole, with telling effect upon the country. On the stump, too, before audiences of workingmen, he showed up the temporizing weakness of the shifting policy of the Liberals and the hollowness of the Gladstonian pretensions to exalted wisdom and virtue. The closure, the Parnellite alliance, the occupation of Egypt, the abandonment of the Soudan, and the sacrifice of Gen. Gordon, the timorous policy toward Russia, the alienation of the colonies, the agricultural distress, the agitation against the House of Lords, the shortcomings of the budget—every act

and omission of the Government was made the basis of a new indictment against "an administration of make-believes, whose every act is a fraud or a sham." In regard to Egypt, Lord Randolph Churchill proposed to scale down the debt and place Arabi Pasha and the National party in power, under the control of united Europe. After resisting the extension of the franchise and of local self-government, he veered round to the position of the Tory Democracy and was willing, like Disraeli, to outbid the Liberals, and after denouncing as iniquitous the coalition of the Liberals and the Parnellites he secretly negotiated with the Irish leaders, but could not induce the chiefs of his party to surrender their principles. When contesting Birmingham against John Bright he assailed the reputation of that old reformer with the same savage vehemence that he was wont to expend on Gladstone, and in unveiling the hypocrisies of Liberalism he further unfolded the ideas of the Tory Democracy. The followers of Sir Stafford Northcote fought hard to oust him from the chairmanship of the Central Union Conservative Associations. To show his power, he resigned, and his enemies thenceforth had to bow to his claims. When the Gladstone ministry was upset in June, 1885, the credit of the victory was given to the Fourth party, but its leader was not to have a very prominent place in the counsels of the men he had belittled, at least not before he had proved his fitness for office. He was taken into the Cabinet of Lord Salisbury as Secretary of State for India, and soon showed his capability, mastering the business of the office and ably advocating in the House the views of the permanent officials. The contest of Upper Burma signalized his short tenure of the office. In the following year, to become Chancellor of the Exchequer and leader of the House of Commons in the purely Conservative Cabinet that conducted the general election of July, 1886, Lord Randolph Churchill and Sir John Gorst endeavored to consummate an alliance between their party and the Parnellites. They had allowed the crimes act to lapse, and they promised an investigation of Lord Spencer's administration. Lord Randolph was beaten by Mr. Bright in the central division of Birmingham, but he was returned for South Paddington as well as for Woodstock. Changing his attitude toward the Irish, he denounced home rule as a mixture of imbecility and political hysterics, and charged the Gladstonians with trying to shatter the Constitution simply to gratify the ambition of "an old man in a hurry." The Unionist policy, as he explained it, was so advanced that the Radicals accused him of stealing their programme. His ideas were not accepted, however, by the older chiefs of his party. As Chancellor of the Exchequer he opposed a policy by imperial expansion and military adventure, and thus came into direct conflict with the majority of the Cabinet. In December he surprised everybody by resigning his office, on the ground that he could not assent to the demands of the War Department and the Admiralty upon the treasury. His budget, that never saw the light, is believed to have been a work of genius. Few thought that the Cabinet could sustain his loss, but the Liberal Unionists lent Mr. Goschen to the Conservatives to fill the gap, and after a moment of consternation the party recovered its spirits and it grew to be as strong as before, when Arthur Balfour developed into a skillful leader of the House. Randolph Churchill's attitude toward his old friends, while it was independent and critical, especially in regard to Mr. Goschen's magnificent naval programme, was not at all factious or embarrassing. He sometimes spoke contemptuously of the Liberal Unionists, and he had a bitter quarrel with Joseph Chamberlain over the central division of Birmingham, which he regarded as his by right after the death of John Bright. He finally agreed to refer the matter to arbitrators, who accorded the seat to the Liberal Unionists. He endeavored as an independent member to play a part in social legislation, introducing a licensing bill for the restriction of the drink traf-



fie, which provided compensation for retailers and was hostile to the brewers. On the labor question he took advanced views, promising to support an eight-hour bill, and thus became more than ever the idol of the working classes. General paresis crept upon him and sapped his mental vigor. Toward the last his speeches in Parliament were rambling and incoherent. In 1891 he went to South Africa for his health and to earn money with letters to the London "Graphic." His physicians sent him on a tour round the world. In Egypt, where he was sinking fast, he begged his wife to take him home to die. Lady Randolph Churchill, a daughter of Leonard Jerome, of New York, was her husband's efficient helper in all his electoral contests. Lord Randolph Churchill was the originator of the Primrose League.

**Clarke, Hyde**, an English philologist, born in London in 1815; died there March 1, 1895. In his early manhood he was employed in the British diplomatic service. He became an expert engineer and a railroad promoter, was the founder of the London and County bank, organized the Council of Foreign Bondholders in 1868, and long took an active part in Oriental finance and politics. Though actively engaged in affairs, he acquired a knowledge of a great number and variety of languages, and wrote speculative books on philology and ethnology. Among his published works are: "Pre-Hellenic Inhabitants of Asia Minor," "The Connection of the Languages of India and Africa," "Prehistoric Comparative Philology," "The Khita and Khita-Peruvian Epoch," "Serpent and Siva Worship and Mythology," "The Earliest English," and "Early History of the Mediterranean Populations."

**Collett, Mrs. Jacobine Camilla Wergeland**, a Norwegian novelist, born in Christiansand, Jan. 23, 1813; died in Christiania, March 7, 1895. She was the sister of the poet Henrik Wergeland. She was educated at the Herrnhut Institute in Christiansfeld, and from 1834 to 1837 traveled in France and Germany, studying literature. In 1841 she married Prof. J. P. Collett, and at his death, in 1851, she left Norway, and lived in several European cities successively, returning to Norway ten years before her death. In 1855 appeared her most remarkable book, "Amt Mandens Døttre" (The Sheriff's Daughters), which was very popular in Norway and has often been translated. "Ide Large Naetor" (In the Long Nights) was published in 1863, and "Sid ste Blade" (Last Leaves) in 1868. She was an advocate of the rights of women, and wrote much on that topic.

**Craik, Georgiana**, see **MAY**.

**Cundall, Joseph**, an English author, born in Norwich in 1818; died in London, Jan. 10, 1895. He learned the printer's trade in Ipswich, went to London, and originated illustrated children's books of a better class than had before been printed, himself writing "Tales of the Kings of England," for which John Gilbert drew the pictures, established a publishing business of his own, and with Henry Cole (Felix Summerly) brought out the "Home Treasury," illustrated by artists like Redgrave, Cope, and Webster. This was followed by "Gammer Gurton's Story Books," and many other picture books. He was the author of "Annals of the Life of Shakespeare," "Life of Holbein," "History of Bookbinding," and "A Brief History of Wood Engraving."

**Doncet, Camille**, a French dramatist, born in 1812; died in Paris, April 1, 1895. For more than fifty years he produced plays, some of which, such as "Fruit Defendu," and "Les Ennemies de la Maison," have an enduring place in the repertory of the French theater. He also devoted himself to dramatic criticism. He was a grand officer of the Legion of Honor. For some years he was the administrator of the imperial theaters. For the last twenty years of his life he was secretary of the French Academy.

**Duff, Sir Robert William**, a Scottish politician, born in Fetteresso in 1835; died in Sydney, New South Wales, March 15, 1895. At the age of thirteen he entered the navy, in which he served seventeen years,

attaining the rank of commander. After succeeding to the estate of his uncle at Fetteresso, he was elected in 1861 to Parliament to represent Banffshire, which returned him six successive times without a contest. He became a recognized authority on naval affairs, was a Liberal whip, and was a junior lord of the Admiralty from 1882 to 1885, and was made a civil lord in 1886. In February, 1893, he was appointed Governor of New South Wales. He was knighted in 1894.

**Dumas, Alexandre**, a French novelist, born in Paris, July 28, 1824; died there Nov. 27, 1895. He was the son of Alexandre Dumas, the elder, and grandson of the famous mulatto general of the army of Napoleon. He was educated at the school of Goubaix and the Collège Bourbon, where he was known as an intelligent, but not brilliant student. Shortly after leaving college at the age of seventeen he published "Les Péchés de la Jeunesse," a collection of indifferent poems. He had no great success with his first novel, "Adventures of Four Women and a Parrot," published in 1846, after he returned from a tour in Spain and Africa with his father. "La Dame aux Camélias," published in 1858, created a tremendous sensation, which never has died out, owing to the pathetic power of his style and to the representation of the principal character on the stage by great actresses and the reproduction of the theme in Verdi's opera of "Traviata." It was based on the life history of a woman of his acquaintance, one Marie Duplessis. Dumas, the younger, while not so prolific an author as his father, wrote many novels and plays, most of which made an impression, while some had a permanent success. He sometimes took some moral problem of the day and treated it in a novel or a play strong in dramatic action and realistic character drawing, but having a didactic philosophical motive. He was elected a member of the French Academy in January, 1874, and was made a grand officer of the Legion of Honor in 1894. His greatest successes in the drama were "Le Fils Naturel" (1858); "L'Ami des Femmes" (1864); "Les Idées de Mme. Aubray" (1867); "La Princesse Georges" (1871); "La Femme de Claude," a dramatization of his novel "L'Affaire Clémenceau" (1873); "Monsieur Alphonse" (1873); "L'Étrangère" (1877); "La Princesse de Bagdad" (1881); "Dénise" (1885); and "Francillon" (1887).

**Durnford, Richard**, an English prelate, born in Sandleford, Berkshire, Nov. 3, 1802; died in Basle, Switzerland, Oct. 14, 1895. He was the eldest son of the rector of Goodworth Chatford, Hampshire, and was educated at Eton and at Magdalen College, Oxford. He was rector of Middleton, Lancashire, from 1835 to 1875, having taken priest's orders in 1831. While rector of Middleton he was honorary Canon of Manchester in 1854-'56, and was preferred to the archdeaconry of Manchester in 1867, becoming Canon of Manchester the year following. In 1870 he was made Bishop of Chichester. Although then in his sixty-eighth year, he entered upon his duties with great vigor, and for the quarter century that he administered the affairs of the diocese was noted as one of the most active prelates in the Establishment. Even after he had passed his ninetieth birthday he performed all his episcopal engagements as regularly as ever, and not many weeks before his death he was known to walk several miles after holding a service and preaching. He devoted himself with great earnestness to the furtherance of temperance, middle-





class education, and other movements of the day. Bishop Durnford was a High-churchman of an unaggressive type, and, though he held very decided opinions, never antagonized those of other people. During his episcopate nearly every church within the diocese was enlarged, repaired, or restored.

**Elisyeff, Dr.**, a Russian explorer, died in St. Petersburg, June 3, 1895. He was a physician, and as a medical officer in the army he visited all parts of the Russian Empire. He also made many explorations in Asia, of which he published accounts. In 1893 he made an attempt to penetrate the country of the Mahdi, and barely escaped. In making another attempt in 1894 he was prostrated by a sunstroke; but he recovered and was able to join Leontieff's expedition to Abyssinia.

**Engels, Friedrich**, a German Socialist leader, born in 1820; died in London, Aug. 5, 1895. When he was twenty-two years of age he went to Manchester as agent for his father, who was a cotton manufacturer in Germany. On his journey homeward, two years later, he fell in with Karl Marx in Paris, and thenceforward he was the most zealous and efficient of that agitator's lieutenants and his intimate friend and literary associate. Together they issued the Communist manifesto in 1847. He returned to business in Manchester in 1850, and became a partner in the firm in 1864, retiring in 1869 to join Marx in London. Together they wrote the "Deutsch-Französische Jahrbücher," and afterward worked on the "Neue Rheinische Zeitung." In 1870 Engels became corresponding secretary to the International Society for Belgium, Italy, and Spain. He studied with Marx the English bluebooks on labor, and produced independently a learned work on "The Condition of the Working Classes in England" and a philosophical book on "The Origin of the Family." The rise and propagation of Socialist doctrines in England was largely due to his influence and teachings. He left unfinished a large work, parts of which have been published under the title "Socialism, Scientific and Utopian."

**Everett-Green, Mrs. Mary Anne (Wood)** an English historical writer, born in Sheffield in 1818, died in London, Nov. 1, 1895. She removed with her parents to London in 1841, and in 1845 became the wife of Mr. G. P. Everett-Green, an artist, whom she survived. Mrs. Green was for almost forty years employed in the Record Office as one of the editors of the Rolls Series of State Paper Calendars, and accomplished a vast amount of work in this department. She edited 41 volumes of Calendars, of 600 to 800 pages each, the latest from her hand comprising 886 pages. The list of works edited by her includes "Letters of Royal and Illustrious Ladies of Great Britain" (1846); "Diary of John Rous" (1856); "Letters of Henrietta Maria" (1857); "Life of William Whittingham" (1870). Mrs. Green's only original work was one in 6 volumes entitled "Lives of the Princesses of England, from the Norman Conquest" (1850-55).

**Faithfull, Emily**, an English author, born in Ileadley, Surrey, in 1835; died in Manchester, May 31, 1895. Her father was rector of the parish in which she grew up, and she began early to take a keen interest in the condition of women. She determined to aid practically in enlarging the field of employment for women. In 1860 she founded a printing establishment in London in which female compositors were employed. It was called the Victoria Press, and it turned out such fine specimens of book work, such as the "Victoria Regia," that the Queen appointed Miss Faithfull her printer and publisher in ordinary. In 1863 Emily Faithfull began to publish the "Victoria Magazine," in which for eighteen years she advocated the claims of women to remunerative employment in branches of business monopolized by men. She published in 1868 a novel, "Change upon Change," which had the same thesis for its moral, and lectured on the subject. In 1872-73 she gave her lectures in the United States and repeated the

tour twice in the next ten years. In 1883 she published "Three Visits to America," in which she described the conditions of feminine life and labor in the United States.

**Fitzpatrick, William John**, an Irish author, born in Ireland, Aug. 31, 1830; died in Dublin, Dec. 24, 1895. He was educated at the Roman Catholic college of Clongowes Wood and held several offices of trust. He was a member of the Irish Royal Academy and Professor of History of the Royal Hibernian Society. He published "The Life, Times, and Contemporaries of Lord Cloncurry" (1855); "Who wrote the Waverley Novels?" (1856); "The Friends, Foes, and Adventures of Lady Morgan" (1859); "Lady Morgan: Her Career, Literary and Personal" (1860); "Life and Times and Correspondence of Bishop Doyle" (1861); "Anecdotal Memoirs of Archbishop Richard Whately" (1864); "The Sham Squire and the Informers of 1798" (1865); "Curious Family Histories" (1867); "Irish Wits and Worthies" (1873); "Life of Charles Lever" (1879); "Correspondence and Life and Times of Daniel O'Connell" (1888); "Secret Service under Pitt" (1892); "Memories of Father Henly" (1895). The last-named work appeared anonymously the week of his death.

**Fonblanque, Edward Barrington, de**, an English author, born in 1821; died in Bourne End, June 14, 1895. He was educated at Bonn, Germany, and held several posts of importance in the army, being at one time commissary general. He was an extensive traveler and a close observer of men and things. His published works include: "Money or Merit: The Army Purchase System considered" (1857); "The Administration of the British Army" (1858); "Nippon and Pecheli" (1862); "Political and Military Episodes in the Latter Half of the Eighteenth Century" (1876); "A New System of Elementary Teaching" (1877); "Cluck-Cluck: A Christmas Story" (1877); "Lives of the Lords Strangford" (1877); "Lives of the Dukes of Northumberland"; "Annals of the House of Percy" (1888).

**Freytag, Gustav**, a German novelist, born in Kreuzberg, Silesia, in 1816; died in Wiesbaden, April 30, 1895. He studied at Breslau and Berlin, became a privat docent at Breslau University in 1839, and remained there eight years in that capacity, meanwhile publishing a volume of poems. His father, a wealthy physician, provided him with ample means to follow his bent. A Berlin theater having offered a prize for the best play on a German historical subject, he wrote "Die Brautfahrt" in 1844 and won the prize, though the piece was not a success on the stage. He was not more fortunate with a tragedy, but in 1846 he produced a successful play, "Die Valentine." Soon afterward he acquired an interest in "Die Grenzboten," a weekly paper, and thenceforth he divided his attention between journalism and dramatic composition. He had wished to deliver at the university a course of lectures on the history of civilization, but the professors would not permit it because they feared that his democratic ideas would offend the authorities. His polished and trenchant articles soon made his review the oracle of Liberal sentiment throughout Germany. "Graf Waldemar," a domestic drama, was not accepted by the theatrical managers. He wrote a series of historical sketches called "Bilder aus der deutschen Vergangenheit," which proved popular and was afterward revised and enlarged. "Die Journalisten," a modern play, appeared in 1853 and was immediately successful. It is still one of the staple acting plays. Next he wrote "Soll und Haben," a realistic novel of mercantile life, of which nearly 40 editions have been printed since its appearance in 1855. The English translation is entitled "Debit and Credit." Freytag's next venture, a tragedy in verse called "Die Fabier," was a failure. He wrote more of his picturesque studies of old German life and events and a little book on the technique of the drama. "Die Verlorene Handschrift" was an ambitious novel that fell far short of his masterpiece. "Die Ahnen" was a series of 6 connected novels in



which he attempted to trace the history of a German family from the time of Tacitus to the present day. Freytag was elected to the North German Diet as a National Liberal in 1867, but he soon withdrew from political life. When the French war broke out he left the "*Grenzboten*" because he disagreed with the editorial management. He went to the war and was attached to the headquarters of the Crown Prince as historiographer. He saw the battles of Weissenburg, Wörth, and Sedan; but he was dismissed at last because in his letters to the journals at home he described too truthfully some of the barbarities that he witnessed.

Gallenga, Antonio Carlo Napoleone, an Italian publicist, born in Parma, Italy, Nov. 4, 1810; died in Llandogo, Wales, Dec. 17, 1895. He was educated at the University of Parma, and, becoming involved in revolutionary political events, left Italy in 1831 and spent several years in various countries, residing in Boston, Mass., from 1836 to 1838. In 1839 he went to England, and in 1846 became a naturalized British subject. He was connected with the London "*Times*" from 1859 to 1883 as special correspondent, and again as its leading editorial writer on foreign affairs. He was a voluminous writer in English and Italian, the following English works of his appearing under the pseudonym L. Mariotti: "*Italy Past and Present*" (1841); "*The Black Gown Papers*" (1846); "*Italy: Its Present State and Prospects*" (1848); "*Scenes from Italian Life*" (1850); "*Italy in 1848*" (1851); "*Practical Grammar of the Italian Language*" (1851); "*First Italian Reading Book*" (1852); "*Historical Memoir of Frà Dolcino and his Times*" (London, 1853). "*Castellamente: An Autobiographical Sketch*" (1855) appeared anonymously. His later works, published under his own name, include: "*History of Piedmont*" (1855); "*Country Life in Piedmont*" (1858); "*The Invasion of Denmark in 1864*" (1864); "*The Pearl of the Antilles*" (London, 1873); "*Italy revisited*" (1875); "*Two Years of the Eastern Question*" (1877); "*The Pope and the King*" (1879); "*South America*" (1880); "*A Summer Tour in Russia*" (1882); "*Democracy across the Channel*" (1883); "*Iberian Reminiscences*" (1883); "*Episodes of my Second Life*" (London, 1884); "*Jenny Jennett: A Tale without a Murder*" (1886); "*Italy Present and Future*" (1887). Among his Italian works are "*Oltremen te ed Oltremare*," "*La Nistra Prima Caravona*," "*Manuale dell' Ellettore*," and "*A che ne siamo*." He was a forcible, picturesque writer, and his work shows keen observation and wide knowledge. The early portion of his career after first leaving Italy was a period of privation and discouragement. He earned a precarious living as a teacher in the United States and in other foreign countries, but after he went to England his situation was bettered. In 1848 his sympathy with the Italian insurgents led him to cast in his lot with them, and for a time he vibrated between Italy and his adopted country, being elected in 1854 a deputy to the Italian Parliament. In 1859 the war between France and Austria brought him into notice again as the "*Times*" foreign correspondent. To his influence is directly traceable the larger part of the friendly feeling at present entertained for Italy by Englishmen.

Gama, Saldanha da, a Brazilian naval officer, died in Rio Grande do Sul, June 25, 1895. He was the head of the naval school when Admiral Custodio de Mello began the bombardment of Rio de Janeiro in September, 1893. At first Admiral da Gama, who had a higher reputation for ability and honesty than any other officer in the navy, remained neutral, but eventually he cast his lot with the insurgents, and when Mello sailed for the south he took command of the rebel fleet and kept up the attack with vigor until his resources were exhausted and Mello's efforts to raise re-enforcements had failed. He surrendered unconditionally in March, 1894, and was taken on board a Portuguese ship of war, to be conveyed to Lisbon. But at Buenos Ayres he was permitted to escape with some of his officers and men. He then joined the

rebels in Rio Grande do Sul, and endeavored to keep up the struggle against the Government, though with little success. When his force of 700 men was cut to pieces at Cuareim, he took his own life.

Geffroy, Mathieu Auguste, a French historian, born in Paris, April 21, 1820; died there Aug. 15, 1895. He was educated at the Normal School, and was instructor in history at the Lycée Louis le Grand when he was called to the chair of History at Bordeaux in 1852. He made researches in Scandinavian history, and in 1854 he was sent on a mission to Sweden. In 1872 he became Professor of Ancient History at Paris, and three years later he was appointed director of the French school at Rome, where he remained until a short time before his death. He was formerly a frequent writer for the "*Revue des Deux Mondes*." His principal published works were "*Histoire des Scandinaves*" (1851); "*Lettres de Charles XII*" (1852); "*Gustave III et la Cour de France*" (1867); "*Marie Antoinette: Correspondance Secrète*" (1874); "*Rome et les Barbares*" (1875); and "*Mme. de Maintenon*" (1887).

Giers, Nikolai Karlovich de, a Russian statesman, born May 9, 1820; died in St. Petersburg, Jan. 26, 1895. He was sprung from a family of Swedish origin, long settled in Finland, and received his education in the imperial lyceum of Tsarskoe Selo. In 1838 he entered the Asiatic department of the Ministry of Foreign Affairs. In 1842 he was appointed secretary to the consulate at Jassy, and after that he was often intrusted with minor diplomatic missions. In 1848 and 1849 he was attached as diplomatic agent to the Russian army that invaded Transylvania to suppress the Hungarian rebellion. In 1850 he was appointed first secretary of legation at Constantinople. During the Crimean War he was chief of the chancery of the imperial commissioner in the Danubian principalities, and when these were evacuated by the Russian forces he was recalled and appointed in 1858 consul general to Egypt. In 1860 he was sent back to Moldavia-Wallachia as consul general at Bucharest. From this post he was promoted in 1863 to be minister to Persia. He remained in Teheran till 1869, when he was appointed minister at Bern, whence he was transferred, in 1872, to Stockholm. In 1875 Prince Gortchakoff, whose niece, the Princess Cantacuzene, was his wife, recalled him to St. Petersburg to fill the post of assistant to the Minister of Foreign Affairs. He was intrusted with the reorganization of the Russian consular service, and also took charge of the Asiatic department. The aged minister chose him in preference to more brilliant and ambitious diplomatists, as one of these might supplant him. M. de Giers exerted what influence he had to avert the Turkish war, and after it was over his prudent counsels had more weight with the Czar than those of the rash Panславists, who would have defied Europe and defended the San Stefano treaty against a military combination that Russia could not successfully oppose. Prince Gortchakoff was so frequently ill that his assistant was acting minister for long periods. In the negotiations with England about Afghanistan in 1878, and about Merv in 1881, M. de Giers was not dismayed by threats and bluster, but with imperturbable tenacity preserved all the advantages of the situation. He arranged the treaty with China that provided for the evacuation of Kuldja. After the Congress of Berlin he was practically the Minister of Foreign Affairs. He saw that the treaty of Berlin was faithfully carried out. On April 9, 1882, he was appointed Minister of Foreign Affairs, Prince Gortchakoff having at last resigned. He endeavored to establish more friendly relations with Germany and Austria, but at no time did he possess the authority and initiative of his predecessor, for Alexander III endeavored to direct the foreign policy and sought advice in various quarters. In the settlement of the new quarrel with England over Afghanistan in 1885, and the negotiations for the delimitation of boundaries in the Pamirs, he gained all the points for which he contended. While he was ever fearful of a con-



flict in Europe, knowing all the dangers of the Eastern question better than any man, his diplomacy won one advantage after another in Asia, and extended the influence and prestige of Russia in China, Afghanistan, and Persia. The Franco-Russian *entente* is believed to have been brought about without his active co-operation and in spite of his misgivings. When the late Czar died, M. de Giers, who was then an invalid, desired to retire, but Nicholas II would not dispense with his services, Prince Lobanof, his destined successor, being needed at Berlin.

**Glogau, Gustav**, a German philosopher, born in Laukischken in 1844; died in Greece, March 17, 1895. He studied in Berlin, at first medicine, then history, philology, and philosophy, and after serving as a soldier through the Franco-German War became a teacher. He went to Zurich in 1878, and four years later he was appointed professor at the Polytechnicum. In 1883 he went to Halle as extraordinary professor, and in 1874 became Professor of Philosophy at the Kiel University. His chief work was "Abriss der philosophischen Grundwissenschaften" (1880-'88).

**Graef, Gustav**, a German painter, born in Königsberg, Dec. 14, 1821; died in Berlin, Jan. 6, 1895. He studied in Düsseldorf, and in 1846 exhibited a picture of a scene in the "Nibelungenlied." Afterward he continued his studies in Antwerp, Paris, Munich, and Rome, and in 1852 he settled in Berlin, where he carried out a design of Kaulbach's in the painting of Charlemagne and Wittekind in the new museum. In the old museum he painted pictures in the portico depicting the adventures of Theseus and Hercules. Several paintings of scenes in German wars hang in the National Gallery. Since 1862 he had devoted himself chiefly to portrait painting. He painted large frescoes of Demosthenes, Phidias, and Solon for the Königsberg University, and exhibited two studies from the nude entitled "Felicia" (1879) and "Märchen" (1880).

**Grant, Sir Patrick**, an English soldier, born in Auchterblair, Scotland, in 1804; died in Chelsea, March 28, 1894. He served with distinguished gallantry through the Mahratta war under Lord Gough, whose daughter he married, and returned to England as aid-de-camp to the Queen in 1851, after taking part in the expedition to Kohat. He served in India through the Sepoy mutiny, winning the grand cross of the Order of the Bath. He was commander in chief of the Madras army, and for two months held the same office in Bengal. From 1867 till 1872 he was Governor of Malta, where his administration was popular and successful. Not long after his return he was appointed governor of the Royal Military Hospital at Chelsea, and the rest of his life he passed in this post. He was a field marshal from 1883.

**Hake, Thomas Gordon**, an English poet and physician, born in Leeds in 1809; died in London, Jan. 11, 1895. He was educated at Christ's Hospital, and took his medical degree at the University of Glasgow in 1831. His earliest published work was entitled "Poetic Lucubrations" (1828). Later works of his include: "A Treatise on Varicose Capillaries, etc." (1839); "Vates: A Prose Epic" (1839), afterward expanded into another work called "Valdarno"; "Madeline, with other Poems and Parables" (1871); "Parables and Tales" (1873); "New Symbols," verse (1875); "The Pironides"; "Legends of the Morrow," verse (1878); "Maiden Ecstasy," verse (1880); "The Serpent Play: A Divine Pastoral" (1883); "The New Days"; and "Memoirs of Eighty Years" (1892). For several years he practiced his profession in East Anglia, and later, becoming the physician and friend of Dante Rossetti, was introduced to the literary circle of which Rossetti was a prominent member. None of his work contains the elements of popularity, and throughout his life he remained as an author practically unknown to all save the few English poets and artists among whom he moved. His poetry is thoroughly original and wholly intellectual. It is both quaint and vague in manner, subtly philosophical as to theme, but always justifying its right to be classed

as poetry as opposed to verse, and valuable as indicating new possibilities for his art. He left three sons, two of whom are known to literature.

**Hallé, Sir Charles**, a German musician, born near Elberfeld, Germany, April 11, 1819; died in Manchester, England, Oct. 25, 1895. When quite young he went to Paris and became well known as a pianist. At the time of the French Revolution of 1848 he went to England and presently became director of the Musical Institution, in Manchester. His fame as a conductor dates from 1857, when he began the annual series of 20 orchestral and choral concerts that have been given uninterruptedly since then. He ranked first among classical pianists in England, and was the author of musical compositions of high grade. He was knighted in 1888, and in the same year married his second wife, the noted violinist Madame Norman-Néruda. His son, C. E. Hallé, is an artist, and his daughter a sculptor.

**Hind, John Russell**, an English astronomer, born in Nottingham, May 12, 1823; died in Twickenham, Dec. 22, 1896. In 1843 he became a fellow of the Astronomical Society, and in 1847 discovered his first asteroid, Iris, for which he received a gold medal from the King of Denmark. Later he discovered 9 more. For his discovery of 4 in a single year he received for the third time the Lalande medal from the Academy of Sciences at Paris and a prize of 300 francs. He contributed to English and foreign scientific journals, and was for a long time superintendent of the Nautical Almanac Office. The most important of his published works are: "The Solar System (1846); "Astronomical Vocabulary" (1852); "Comets" (1852); "Illustrated London Astronomy" (1853).

**Ismail, Pasha**, ex-Khedive of Egypt, born in Cairo, Dec. 31, 1830; died in Constantinople, March 1, 1895. He was the second son of Ibrahim Pasha and a grandson of Mehemet Ali. Both were dead before he grew up, and his cousin Abbas came to the throne, after whom, in the order of succession, under the *hatti shereef* of 1841, whereby the valiship passed to the eldest descendant of the founder of the dynasty, were his uncle Said and his brother Achmet. Ismail was one of the leaders of the Princes' party that opposed Abbas. Ismail was educated in Paris, and when his uncle became Vali he was sent abroad on missions to the Emperor of the French, the Pope, and other European rulers. He escaped a suspicious railroad accident by which his elder brother lost his life, and he returned safe from a military expedition to the Sudan and succeeded Said on Jan. 18, 1863. Ismail found himself in possession of financial resources that appeared to be boundless, for the American civil war had raised the price of cotton from 12 cents to 60 cents a pound, adding \$100,000,000 a year to the national income. His ambition was to become the independent ruler of a powerful and prosperous nation. He set out boldly and energetically to accomplish his objects with the help of politicians, diplomats, and financiers, European and Oriental, and he was deceived and defrauded on every hand. He bought, by increasing the annual tribute from 376,000 to 720,000 liras, an accession of dignity and power from the Sublime Porte, having the title of Vali changed to Khedive, and the order of direct descent from father to son established in place of the Mohammedan law of succession; but his wife managed to have primogeniture decreed, whereas he expected to choose his heir and shut out his eldest son, whom he disliked. He intrusted Nubar Pasha with the negotiations for the curtailment of the extraterritorial consular jurisdiction, under which foreigners were exempt from the laws of the lands and from all taxation. The result was the system of international tribunals that insidiously introduced European control and eventually deprived him of his sovereign rights and cost him his throne, for the new tribunals had jurisdiction over the Khedive's Government and his estates. By taking over the incumbered and impoverished farms of the *fellahin* the Khedive gradually became owner of a great part of the land of Egypt, and the enor-



mous estates thus amassed were brought to a high state of cultivation. The railroads of Egypt were greatly extended, the cultivation of sugar was introduced on the Khedive's estates at enormous expense, and the canals were improved and multiplied. Ports were made at Alexandria and Suez. Ismail also built many sumptuous palaces, maintained a superb opera and ballet, and feasted and entertained every person that visited Egypt. Every European speculator that started an enterprise in Egypt could rely on the financial aid of the Khedive if he found himself pecuniarily embarrassed. When Ismail ascended the throne he found that Ferdinand de Lesseps had secured concessions that were embarrassing and dangerous to the state. To rectify his predecessor's mistake he was willing to pay heavily, and he generously referred the question of compensation to Napoleon III, who fixed the award at 100,000,000 francs. The Khedive foresaw the political danger that the building of the Suez Canal involved. If he could have done so safely, he would have canceled the concession; but since he could not withdraw, he worked zealously to make the canal a success, relying on the friendship of the French to avert evil consequences, and this friendship he endeavored always to retain, at the cost of heavy pecuniary sacrifices. Ismail Pasha, after obtaining in 1866 the title of Khedevî-Misr, a recognition of sovereignty, increased his army and acquired a fleet. But this excited the jealousy of the Porte, which, in 1870, with the support of the great powers, required him to deliver up the armor-clads. In 1868, when Ismail was received as a fellow-sovereign at the European courts, and afterward entertained, with regal pomp and splendor, the French Empress and the Prussian Crown Prince at the opening of the Suez Canal, he reached the zenith of his glory, but not the summit of his ambition. In 1873 he distributed an immense sum in bribes among the dignitaries of Stamboul, to obtain a new firman, which transformed Egypt into a practically independent tributary state, requiring only an acknowledgment of the suzerainty of the Sultan and military aid in case of war. He then set about the subjugation of the Soudan, conquering Darfur in 1874, but failing in a campaign against Abyssinia. Ismail and Egypt were already embarrassed in their finances. From the first the international money lenders had him in their power. With railroads, harbors, irrigation works, sugar mills, armaments, and palaces half finished, and innumerable industrial enterprises under way, for which he had made himself responsible, he could only keep things going by submitting to extortionate terms, issuing bonds for which he received only a fraction of their face value, and renewing loans with others of longer term, with 25 per cent. compound interest added. The productive and taxpaying powers of the country increased with remarkable rapidity, owing to his improvements, but did not keep pace with the debts that were thus multiplied on paper without any equivalent consideration being given. In 1875 the Khedive was compelled to sell to the British Government for £4,000,000, with which to meet immediate obligations, his 177,000 shares in the Suez Canal. In 1876 default was made in the debt of the Daira Sanieh estate. Ismail appealed to his creditors to save the national resources from wreck, and was willing to sacrifice his individual interests. Gosehen and Joubert went to Egypt as representatives of the English and French bondholders, and worked out a plan of financial reform to which the Khedive agreed. Another English financial expert, Rivers Wilson, having induced Ismail to convey to the state all his private estates, assumed charge of the Ministry of Finance with Nubar Pasha, while M. de Blignières took hold of the Public Works Department. In consequence of this a military revolt broke out Feb. 18, 1879, and Ismail, who was suspected of complicity in the insurrection, carried out a *coup d'état* in April by summoning a Chamber of Notables, before which he laid a scheme of reform that would have entailed the dismissal of the European

ministers while preserving the dual control. The great powers thereupon, through their consul generals, demanded the abdication of Ismail Pasha. He refused to resign at their bidding, but submitted to be formally deposed by his suzerain, when the Porte, under pressure from England and France, was induced to issue the decree. On June 26, 1879, Ismail Pasha formally abdicated in favor of his son 'Tewfik, and on July 1 he left his country forever. He sailed for Constantinople, but was forbidden to land there. He lived in Naples until politicians raised an outcry against his being allowed to keep a harem, and remained in Rome also a short time, and went in 1888 to Constantinople, where he spent most of the remainder of his life without holding any intercourse with the Sultan, and really interned by the Ottoman Government.

**Krestowsky, M.**, a Russian novelist, born in the government of Kieff in 1820; died in Warsaw in February, 1895. He served in the Russian army as an officer of Uhlans, first in the line and afterward in the guard. During the Russo-Turkish War he was attached to the general staff as historiographer. Among the most esteemed novels, many of which have been translated into French, are: "Une Créature dévoyée, mens chère"; "The Sphinx"; "En voyage"; "Le Troupeau de Panurge"; "Sous les Châtaigniers"; "Le Diablotin"; "My Uncle Bujanoff"; and "Mme. Ridnieff."

**Lauth, Franz Josef**, a German Egyptologist, born in 1822; died in Munich, Feb. 11, 1895. From 1869 he was a professor in the University of Munich and conservator of the Egyptian collections. His most important published work was "Manetho und der Turiner Königspapyrus." He also wrote "Die Geburt der Minerva auf der Cospiarischen Schale"; "Das Germanische Runen-Fudark"; "Das Universal-Alphabet auf der Grundlage des hebraischen Systems"; "Les Zodiaques de Denderah"; "Moses der Ebräer, aus zwei Papyrusurkunden"; "The Historical Results of Egyptology"; "Aegyptische Chronologie"; "Homer und Aegypten"; "Aus Aegyptens Vorzeit"; "Moses-Hosarsyphos-Salichus"; and "Die Pianchi-Stele."

**Locker-Lampson, Frederick**, an English poet, born in Greenwich in 1821; died in Rowfant, Sussex, May, 30, 1895. He was a son of Edward Hawke Locker, who founded the Naval Gallery at Greenwich Hospital, and was for some years *précis* writer in the Admiralty. Among writers of *vers de société* he ranks among the first, standing in much the same relation to his own generation that Mackworth Praed stood to his. His touch is the lightest possible, and his humor never becomes flippant. Among his best poems are "A Nice Correspondent," "At Her Window," "A Hunian Skull," "Little Dinkey," and "The Housemaid." It has been well said of him that "he has set small talk to music, and so adroitly that he never checks the flow of conversation." His first wife was a sister of the late Earl of Elgin, and his second wife a daughter of Sir Curtis Lampson. After the death of his father-in-law Mr. Locker added the name Lampson to his own. His published works include "London Lyrics" (1857; new edition, 1870); "Lyra Elegantiarum" (edited, 1867); "Patchwork" (1879).

**Loven, Sven**, a Swedish naturalist, born in Stockholm in 1809; died there Sept. 4, 1895. He was a son of the Mayor of Stockholm, and after taking his degree at Lund he went to Berlin and attended lectures on natural history. Returning to Sweden, he devoted himself to studying the maritime fauna of the coasts of countries bordering on the North Sea and the Baltic. He became a professor and conservator of the Museum of Natural History at Stockholm in 1841. Among his numerous scientific memoirs are the following: "O Evadne" (1835); "Campanularia and Syneoryne" (1836); "Evertibrate Animals" (1840-49); "Development of Lamellibranchiata" (1848); "Glacial Marine Crustacea" (1862); "Portalesia" (1873); "Echinoidea" (1874);



"Species of Echinoidea described by Linnæus" (1887); and "Echinoconidae" (1888).

**Ludwig, Karl**, a German physiologist, born in Wittenhausen in 1816; died in Leipzig, April 25, 1895. He was graduated as doctor in 1839, and became a privat docent in the University of Marburg in 1842. He was a professor at Zürich from 1849 till 1855, and then became professor in the Vienna Academy of Military Surgery. For the last thirty years he was Professor of Physiology at Leipzig. He brushed aside the transcendental theories that beclouded his science, and soon attracted students from all corners of the globe. His first published work was "Mechanism of Urine Secretion," explaining the formation of urine in the kidneys on purely mechanical principles. Prof. Ludwig invented the kymograph and other instruments for the graphic recording of physiological processes. He made important researches on the circulation of the blood, observing how this was influenced by respiration and acted upon by the medulla oblongata. He noted also the action of the nervous system as affecting glandular secretions. Important discoveries in pathology are due to him.

**Lumby, Joseph Rawson**, an English clergyman, born in Stanningly, Yorkshire; died in Grantechester, England, Nov. 21, 1895. He was one of the revisers of the Old Testament, and at the time of his death was Professor of Divinity at Cambridge. He was the author of "Early Dissent, Modern Dissent, and the Church of England" (1870); "A History of the Creeds" (1873); "A Popular Introduction of the New Testament" (1883); and "Greek Learning in the Western Church during the Seventh and Eighth Centuries."

**Macduff, John Ross**, a Scottish divine, born in Bonhard, Perthshire, in 1818; died in Chislehurst, April 30, 1895. He was educated at the University in Edinburgh, and was ordained as minister of a parish in Forfarshire in 1843, whence he passed to a Perthshire parish in 1849, which he left to take charge of a new church in Glasgow. He preached there fifteen years, and then went to live in Kent and give himself up entirely to literary work. His best-known books are: "The Prophet of Fire"; "Memories of Bethany"; "Memories of Gennesaret"; "The Shepherd and His Flock"; "Sunset on the Hebrew Mountains"; "Comfort Ye"; "The Golden Gospel"; "Morning and Night Watches"; "The Bow in the Cloud"; "The Story of a Dewdrop"; and "The Story of a Shell."

**Malagola, Amilcare**, an Italian prelate, born in Modena, Dec. 24, 1840; died in Fermo, June 22, 1895. He entered the priesthood at an early age, became widely known for his eloquence and learning, rose to be Archbishop of Fermo, and was created a cardinal, Jan. 13, 1893.

**Martha, Benjamin Constant**, a French historian, born in Strasburg, June 4, 1820; died in Paris, May 28, 1895. He studied in the École Normale, and became a professor at Strasburg in 1843, and in 1854 went to Douai as Professor of Ancient Literature, whence he was transferred to Paris, and became Professor of Latin Eloquence at the Sorbonne in 1865. He was chosen a member of the Academy of Moral Sciences in 1872. His most famous works were "Les Moralistes sous l'Empire Romain" and "Le Poème de Lucrèce," which were crowned by the Academy.

**May, Mrs. Georgiana Marion Craik**, an English novelist, born in London in 1831; died in Saint Leonard's, Nov. 1, 1895. She was the second daughter of George Lillie Craik, the well-known author, and married A. W. May nine years before her death, but continued to be known in the literary world as Georgiana Craik. Her first novel, "Riverston," appeared in 1857, and after that date she published a book nearly every year. Her work was all well done, showing skill in character drawing and in construction of plot, and her books were deservedly popular. They include: "Lost and Won" (1859); "My First Journal: A Book for the Young" (1860); "Play-room Stories" (1862); "Winifred's Wooing" (1862); "Faith Unwin's Or-

deal" (1865); "Leslie Tyrrell" (1867); "Cousin Trix" (1867); "Mildred" (1868); "Esther Hill's Secret" (1870); "Hero Trevelyan" (1871); "The Cousin from India" (1871); "Without Kith or Kin" (1872); "Miss Moore" (1873); "Only a Butterfly" (1873); "Theresa" (1874); "Sylvia's Choice" (1874); "Anne Warwick" (1876); "Janet Mason's Trouble" (1877); "Dorcas" (1879); "Two Women" (1880); "Hilary's Love Story" (1880); "Mark Denison's Charge" (1880); "Sydney" (1881); "Fortune's Marriage" (1882); "Godfrey Helstone" (1884); "Mrs. Holver" (1885); "Twelve Old Friends" (1885); "A Daughter of the People" (1887); "Patience Holt" (1891).

**Melchers, Paul**, a German prelate, born in Münster, Jan. 6, 1813; died in Rome, Dec. 14, 1895. He was Archbishop of Cologne when the May laws were enacted. He was the first of the German bishops to raise a protest against them, and the first also to defy the Government and pay the penalty for disobedience by being sent to prison on March 31, 1874. When his term of imprisonment had expired the Government demanded his resignation, and on his refusal suspended him from his archiepiscopal functions, and finally dismissed him on June 28, 1876. He continued, nevertheless, to administer his diocese from his place of exile in Holland. When Leo XIII came to the pontifical throne and Prince Bismarck made overtures for peace with the Church, the Pope gave the deposed Archbishop of Cologne the satisfaction of addressing his communication to the Prussian Government to him, but Bismarck would never consent to his reinstatement. The Pope did not insist, but consoled him by conferring upon him a cardinal's hat, July 27, 1885.

**Meredith, Mrs. Louisa Anne (Twamley)**, an English author and artist, born in Birmingham, July 20, 1812; died Oct. 21, 1895. She began early to write and draw, and in 1833 published a volume of "Poems" with etchings made by herself from original drawings. This was followed by "The Romance of Nature"; "Autumn Rambles on the Wye" (1838); and "Our Wild Flowers familiarly described" (1839). On Aug. 12, 1839, Miss Twamley married her cousin, Mr. Charles Meredith, and emigrated with him to Australia. After living five years at Sydney, they removed to Tasmania, in which colony Mr. Meredith served for some time as Colonial Treasurer. He died in 1880, and in consideration of Mrs. Meredith's literary services a pension of £100 a year was granted to her. For her botanical drawings she was awarded medals at the World's Exhibition in London, 1862, and at others in Melbourne in 1866 and 1881, at Sydney in 1870 and 1875, and at Calcutta in 1884. No woman in the colony was better known than Mrs. Meredith, who was often lovingly called "The Grand Old Lady of Tasmania." In 1891 she visited England, for the first time since leaving it in 1839, and remained in London two years, seeing through the press her "Last Series of Bush Friends in Tasmania," the illustrations of which show no failure of power or skill in spite of her having done them at an advanced age after the sight of one eye had been lost. Her works include: "Notes and Sketches of New South Wales" (1844); "My Home in Tasmania" (1852); "Native Flowers, Fruits, and Insects drawn from Nature: Described and Illustrated in Verse"; "Grandmamma's Verse Book for Young Australians" (Hobart Town); "Some of our Bush Friends in Tasmania" (1859); "Loved and Lost" (1860); "Ebba: A Novel"; "Over the Straits" (1861); "The Lace-makers: Sketches of Irish Character" (1865); "Our Island Home: A Tasmanian Sketch-book" (Hobart Town, 1879); and "Tasmanian Friends and Foes, Feathered, Furred, etc." (1880).

**Metternich, Prince Richard**, an Austrian diplomatist, born in Vienna, Jan. 7, 1829; died there March 1, 1895. He was the eldest son of the great Austrian Chancellor. At the age of twenty-two he entered the diplomatic service as an *attaché* in Paris, and in 1859 he was appointed Austrian ambassador there. At the imperial court he and his wife, Princess Pau-



line Metternich, who was an intimate friend of the Empress Eugénie, were prominent figures. He arranged the meeting between Napoleon III and Frauz Josef at Salzburg. After Sedan he aided in the escape of the Empress. He was recalled on the fall of the empire, and thenceforth took no part in public affairs except to vote with the Moderate Conservatives in the Austrian Chamber of Peers. He was devoted to music, and produced several compositions.

**Meyer, Hans Wilhelm**, a Danish surgeon, born in 1824; died in Venice, June 3, 1895. He practiced his profession in Copenhagen. In 1867 he discovered in the enlargement of the glands between the nose and the throat not only the most common source of deafness, but a very frequent cause of arrested physical and mental development in children.

**Meyer, Julius Lothar von**, a German chemist, born in Varel, Oldenburg, in 1830; died in Göttingen, April 14, 1895. He became director of the chemical laboratory at Breslau in 1859, and in 1868 went to Karlsruhe as Professor of Chemistry. He was called thence to Tübingen in 1876, and in 1885 he accepted the chemical chair at the University of Göttingen. His most celebrated works are: "Die Gase des Blutes," "Die Modernen Theorien der Chemie," and "Die Atomgewichte der Elemente."

**Moncrieff, Lord James Wellwood**, a Scottish jurist, born in Edinburgh in 1811; died there April 27, 1895. He was educated at the University of Edinburgh, was admitted to the bar in 1833, and after a brilliant career as an advocate, rose to be Solicitor-General in 1850, and Lord Advocate in 1857. This post he held in all the Liberal ministries, sitting for Leith, Edinburgh, and the Universities of Glasgow and Aberdeen in the House of Commons, until he was raised to the bench in 1869 as Lord Justice Clerk. In Parliament he labored to establish a national system of education in Scotland, and he carried several measures modernizing the old educational institutions. He was elected rector of Edinburgh University in 1868. He was made a baronet in 1871, and in 1874 was raised to the peerage as Baron Moncrieff of Tulliebole. In 1888 he retired. Lord Moncrieff wrote much for the "Edinburgh Review," and to "Fraser's Magazine" he contributed a novel entitled "A Visit to my Discontented Cousin."

**Moore, Henry**, an English artist, born in York in 1831; died in Margate, June 23, 1895. He was a son of William Moore, a portrait and landscape painter, and brother of Albert Moore, the decorative painter. Henry won a high reputation as a painter of English scenery in broad style on small canvases before he devoted himself to the study of the open sea, and developed a rare art of catching the play of the wind and light upon its surface, and all the forms of waves. His pieces, mostly showing a plain expanse of water, studied in the English Channel, unrelieved by rock or shore or sail, were exhibited and admired in Paris long before they were appreciated by English critics and amateurs. He was made an associate by the Royal Academy in 1885, and an academician in 1893.

**Morisot, Berthe**, a French painter, born in 1840; died in Paris about March 1, 1895. She was the wife of Eugène Maquet, a brother of the painter Édouard Manet, under whose tuition she developed a style of painting that was feminine and subtle, with strong individual characteristics, especially the luminosity that she gave to all her works, whether portraits, interiors, or landscapes. She was particularly happy in catching the bashful grace and the transparent complexion of young girls. In open-air pieces, as in a small painting of the outer harbor of Marseilles, she showed a remarkable power in distinguishing the variations of light. Her "Jeune Femme au Bal" hangs in the Luxembourg.

**Murray, Sir Charles Augustus**, an English diplomat, born Nov. 22, 1806; died June 3, 1895. He was the second son of the fifth Earl of Dunmore, and was educated at Eton and Oxford. He was master of the royal household in the early years of Queen Victoria's reign; secretary of legation at Naples in 1844;

cousul general in Egypt in 1844; British minister in Switzerland in 1853; envoy to Tcheran in 1854; British minister in Saxony in 1859; envoy to Denmark in 1866; envoy to Portugal in 1867. In 1866 he was made K. C. B. He was a man of varied experiences and many gifts, and as a writer of popular books was noted for good humor and fair-mindedness. He published "Travels in North America during the years 1833-'36" (1839); "The Prairie Bird: A Tale" (1844); "Hassan, or the Child of the Pyramid" (1857); and "Noureddin, or the Light of the Faith" (1883).

**Noailles, Jules, Duc de**, a French economist, born in Paris, Oct. 12, 1826; died there March 6, 1895. He devoted himself to economical studies, visited England and the United States to study their economic conditions, and published works on the subject. While his brother was a professional diplomat, long the French minister to the United States, he took no active part in public affairs, but was one of the leading supporters of the Comte de Paris until the pretender entered into the alliance with Boulanger. Till he succeeded his father, in 1885, he was known as the Duc d'Ayen. His works include "De la Décentralisation en Angleterre," "Revenu, Capital et Travail," "Recherches sur l'estimation de la Richesse nationale et privée en France et en Angleterre," and "Cent ans de République aux États-Unis."

**O'Neill, John**, an English philologist, died in Selling, Kent, in January, 1895. He was a clerk in the British War Office for many years, and afterward was sent to Cyprus as accountant general when the British administration was first established there by Sir Garnet Wolseley. In that capacity he adjusted to the new system the complicated and irregular fiscal arrangements bequeathed by the Ottoman rulers and fixed the exchange values of the many sorts of currency used in the island. He devoted his mind to the mastering of languages and was a frequent contributor to the philological journals of London and Paris. He was author of a philosophical work on comparative religion entitled "The Night of the Gods."

**Opel, Julius**, a German historian, born in Loitschütz, July 17, 1829; died in Halle, Feb. 18, 1895. He studied history and philology at the University of Halle and became a collaborator at the Francke Institute in 1854, and subsequently director of the Halle Gymnasium. He was a hard-working member of the historical commission of the province of Saxony, and for many years president of the Thuringio-Saxon Historical Society. Some of his numerous works are: "Der Niedersächsische Krieg, 1621-'23"; "Der dänische Krieg von 1624 bis 1626"; "Der dänische Krieg von 1627 bis zum Frieden von Lübeck (1894); and a memoir entitled "Denkwürdigkeiten des Rathmeisters Spittendorf" (1894).

**Ormsby, John**, an Irish scholar, born in Gartner Abbey, Mayo, April 25, 1829; died in Ramsgate, England, Oct. 30, 1895. He was educated at Trinity College, Dublin, contributed frequently to periodicals, and was the author of "Autumn Rambles in North Africa" (1864) and "Stray Papers" (1876). He was best known as a Spanish scholar. He translated "The Poem of the Cid," with introduction and notes (1879), and also "Don Quixote," with introduction and notes (1884). His version of the Cid is the only complete one in English, and comes as near as possible to the spirit of the original.

**Palmer, Edwin**, an English clergyman, born in Mixbury, Oxfordshire, July 18, 1824; died in Oxford, Oct. 17, 1895. He was the youngest brother of Lord Selborne. He was educated at Oxford, and was a fellow of Balliol from 1848 to 1867. He became Professor of Latin in the university, in 1870, resigning that office in 1878 on being appointed Archdeacon of Oxford. He was a ripe scholar, deeply versed in the literature of Greece and Rome, and as tutor and professor at Oxford filled, as has been well said of him, "an eminent place among eminent colleagues." He was one of the revisers of the New Testament and edited the revised Greek text.



**Palmer, Sir Roundell**, an English jurist, born in Mixbury, Oxfordshire, Nov. 27, 1812; died in Petersfield, Hampshire, May 4, 1895. He was educated at Rugby and Oxford. He was always a High-churchman, and at Oxford his especial friends were Claughton, afterward Bishop of St. Albans, Wordsworth, afterward Bishop of St. Andrews, and Faber. Among his friends in later life was Tennyson, who dedicated "Becket" to him. He was called to the bar at Lincoln's Inn in 1837, and very soon rose to eminence in his profession. He was returned to the House of Commons in 1847 as member for Plymouth, and afterward sat for Richmond. He was knighted in 1861, and from 1863 to 1866 was Attorney-General in Lord John Russell's second administration. He strongly opposed the disestablishment of the Irish Church, declining the offer of the chancellorship and a peerage rather than support that measure. In 1872 he became Lord Chancellor and was elevated to the peerage as Baron Selborne. As counsel for Great Britain in the international court of arbitration which met at Geneva to decide the "Alabama" dispute, he showed signal tact and ability, and the same qualities were conspicuous in his two years on the woolsack at this period and from 1880 to 1885, when he was Chancellor for the second time. When Mr. Gladstone's third administration was formed, in 1886, Baron Selborne declined to enter the Cabinet on account of his opposition to the Premier's home-rule views. For the rest of his life he remained a Liberal Unionist. He spoke against the home-rule bill in the House of Lords in 1893, and actively opposed Lord Rosebery's proposition to disestablish the Welsh Church. He published in 1862 a hymnal entitled "The Book of Praise," much valued for its able editing, and contributed the article on "Hymns" in the ninth edition of the "Encyclopædia Britannica." He was also the author of "A Defense of the Church of England against Disestablishment" (1886) and "Ancient Facts and Fictions concerning Churches and Tithes" (1888).

**Payne-Smith, Robert**, an English clergyman, born in Chipping Campden, Gloucestershire, Nov. 7, 1819; died in Canterbury, March 31, 1895. After leaving Oxford he took orders, and was successively curate at Crendon, Long Winchenden, and Thanet. In 1853 he became head master of the Kensington Proprietary School, and in 1859 sublibrarian of the Bodleian Library. He published in Syriac and English the commentary of Cyril of Alexandria on St. Luke (1859); a translation of the third part of the "Ecclesiastical History of Johannes Ephesus" (1860); a "Catalogue of the Syriac Manuscripts in the Bodleian Library" (1865); and "The Authenticity and Messianic Interpretation of the Prophecies of Isaiah" (1862). In 1865 he was made Professor of Divinity at Oxford, and he was Bampton lecturer for 1869, the subject being "Prophecy a Preparation for Christ." In 1870 he accepted the deanery of Canterbury, and in this office his moderate views made him popular not only with the various schools of thought in the Church, but with the nonconformists as well. His great work as an Oriental scholar was the "Thesaurus Syriacus," on which he was engaged for the last thirty-six years of his life. He was for fifteen years a member of the Old Testament Revision Committee (1870 to 1885). His later publications include an "Exposition of the Historical Portion of Daniel" (1886) and several commentaries.

**Peel, Sir Robert**, an English politician, born in London, May 4, 1822; died there May 9, 1895. He was the eldest son of Sir Robert Peel, the statesman, and succeeded to the baronetcy at his father's death, in 1850. He entered the House of Commons that year and was ranked among the Liberals for many years, but afterward allied himself with the Conservatives, and when he was defeated in 1889 as a Conservative candidate his political career came to an end.

**Peixoto, Floriano**, ex-President of Brazil, born in 1842; died in Rio de Janeiro, June 29, 1895. He entered the Brazilian army, and served through the war with Paraguay in 1865-'70, after which he resigned

to oversee his estate. After the liberation of the slaves had reduced him almost to poverty he joined the army again. On the overthrow of the empire he at once gave his adhesion to the republic, and was nominated a Senator. He was elected Vice-President of the republic in 1891. He sided with the Congressional party and the navy in their resistance to the dictatorship of President Fonseca, but when the latter retired, transferring the supreme power to him, he stood firmly by the Constitution and conducted the civil war that followed with energy and tenacity, finally overcoming Admiral de Mello. He successfully completed his term of office as Acting President in November, 1894, and then peacefully resigned his powers to his elected successor, Prudente de Moraes, and withdrew from politics.

**Persio, Ignazio**, an Italian prelate, born in Naples, Jan. 30, 1823; died in Rome, Dec. 7, 1895. He was created a cardinal on Jan. 16, 1893, and was prefect of the Congregation of Indulgences and Holy Relics.

**Poole, Reginald Stuart**, an English Egyptologist, born in London, Feb. 27, 1832; died there Feb. 8, 1895. He was taken to Egypt when ten years of age by his uncle, Edward Lane, and during the years that he spent there, while his uncle was compiling the "Arabic Lexicon," he became so deeply engrossed in Egyptology that at the age of seventeen he wrote the papers on Egyptian chronology that were afterward published under the title "Horæ Egyptiacæ" (1851). In 1852 he obtained a place in the department of antiquities in the British Museum. He lectured on Egyptology and numismatics. In 1866 he was appointed assistant keeper of coins in the museum, and in 1870 he succeeded his chief, Mr. Vaux. He was one of the earliest and most ingenious students of the lessons in art and history to be read in coins. During the twenty-two years that he was keeper of coins he edited 35 volumes of the catalogues of Greek, Roman, Anglo-Saxon, Persian, Arabic, Indian, and Chinese coins. He published "Cities of Egypt" (1882). In 1885 he became Professor of Archaeology at University College.

**Portaels, Jean**, a Belgian painter, born in Vilvorde in 1818; died in Brussels, Feb. 9, 1895. He won the Roman prize at the Paris Art School in 1843, and after completing his studies in Rome went to Egypt, where he painted a portrait of Mehemet Ali and made many sketches that were exhibited at the Paris Exposition of 1855. From a second sojourn in the Orient he brought back many new studies. He spent also considerable time in Hungary. In 1857 he was appointed director of the Art Academy in Ghent, and in 1863 he went to Brussels as a professor in the academy, of which he became director in 1877. While his earlier works reflected the strictly classic method, he gradually emancipated himself from classic traditions. His "Loge de l'Opera de Pesth" hangs in the Brussels Museum. He established in 1860 a free *atelier*, in which were trained Emile Wauters, Cormon, Impens, and other eminent artists.

**Rawlinson, Sir Henry Creswicke**, an English Orientalist, born in Oxford, April 11, 1810; died in London, March 5, 1895. He went to Bombay in 1827 as a military cadet of the East India Company. He had already begun the study of Oriental languages, and he became so proficient in Persian and Mahrattæ that in less than a year he was made interpreter, and after another year paymaster of his regiment. In 1833 the Governor General sent him, with other officers, to Persia, in connection with the scheme of giving military aid to that country. During the six years that he remained there he filled various posts, from paymaster to *chargé d'affaires*. He traveled through parts of the country that had never been visited by Europeans, and discovered archæological remains, to the study of which he gave much attention. He and his brother officers were recalled when war was declared against Persia in consequence of the Shah's attack upon Herat. He was sent to Cabul as assistant to the British envoy, and was soon appointed political agent at Candahar. After the murder of the envoy



at Cabul Rawlinson turned all the Afghans out of the city and prepared for the siege that followed. His disposition of the artillery saved the city from being taken by assault when the Afghans burned one of the gates. In the battle of May 29, 1842, he saved the day with a band of Persian cavalry that he had trained. Major Rawlinson finally retired with the garrison. He obtained the appointment of resident for the East India Company and British consul at Bagdad, where he remained from 1843 till 1856. Then he returned to England, was elected to Parliament in 1857, advocated the transfer of India to the Crown, and when the bill was passed in 1858 was made a member of the new India Council. In 1859 he was sent to Persia as minister plenipotentiary, remaining a year. After his return he sat in Parliament and raised the cry of warning against the Russian advance in Asia. He was made a life member of the India Council in 1868. After the Russians annexed Khiva he published "England and Russia in the East" (1875). His earliest archæological notes are found in a narrative of a tour through Susiana and Elimaïs in 1837, which he supplemented with a description of Eebatana that earned for him the gold medal of the Geographical Society. He began to copy the cuneiform inscriptions at Behistun in 1835. On his appointment to the Bagdad consulate he studied the remains excavated by Botta at Khorsabad, and through his familiarity with the old Persian characters on the rock tablets at Behistun he was able to decipher, in 1844-'45, the ancient Persian translations in which the Assyrian legends and history were preserved. In 1846 he published his first work on the cuneiform inscriptions. In 1847 he obtained complete copies of all the inscriptions, the most important of which were found in a dizzy location on a precipitous rock. These copies he took to England in 1849. He read during his visit the famous paper on the cuneiform inscriptions of Assyria and Babylonia containing a translation of the inscription of the black obelisk. He deciphered an inscription brought home by Layard containing a chronicle of the war between Hezekiah and Sennacherib. In 1851 the British Museum granted £3,000 for excavations in Mesopotamia, for which Sir Henry Rawlinson employed Hormuzd Rassam. He was knighted on his return from Bagdad in 1856, and made a baronet in 1891.

**Reeve, Henry**, an English historian, born in Norwich in 1813; died in Christ Church, Hampshire, Oct. 21, 1895. He was educated at the Academy of Geneva, Switzerland. From 1837 to 1887 he was Registrar of the Privy Council, and in 1855 he became editor of the "Edinburgh Review." In 1835 he published a translation of De Tocqueville's "Democracy in America," which passed through many editions, and in 1856 a translation of De Tocqueville's "France before the Revolution of 1789." He was also the author of a translation of Guizot's "Washington" (1840). His original works include "Graphidæ; or, Characteristics of Painters" (183 ); "Royal and Republican France" (1872); and "Petrarch," in the series of "Foreign Classics" (1878).

**Ruffo-Scilla, Luigi**, an Italian prelate, born in Palermo, April 16, 1840; died in Rome, May 29, 1895. He was distinguished for refined wit and artistic taste, and on account of these qualities Leo XIII made him major-domo of the Vatican palace. He suggested and oversaw the restoration of the Sistine Chapel and of the Borgia apartments. He was created a cardinal on Dec. 14, 1891.

**Sainsbury, William Noel**, an English author, born in London, July 7, 1825; died there March 9, 1895. He was appointed to a post in the Public Record Office, and remained there until his retirement in 1892. He published: "Original Unpublished Papers relating to Sir Peter Paul Rubens as an Artist and Diplomat" (1859); "Colonial Calendar of State Papers: America and West Indies, 1574 to 1668" (1860-'80); "Colonial Calendar of State Papers: East Indies, China, and Japan, 1517 to 1629" (1862-'83); and "Hearts of Oak: Stories of Early English Adventure" (1870).

**Saint-Hilaire, Jules Barthélemy de**, a French statesman, born in Paris, Aug. 19, 1805; died there Nov. 22, 1895. He held a post in the Ministry of Finance when Charles X was king, and became a friend of Thiers and a contributor to the "Globe" and other journals. He signed the protest against the ordinances of Polignac with which the revolution of 1830 was inaugurated. When the Orleans Government was established he found that his ideas of government differed radically from those of Thiers and the organizers of the constitutional monarchy. He protested vigorously against the new order of things in newspaper articles, then withdrew from politics and devoted himself to translating Aristotle (1838). He was then called from the assistant professorship of French Literature in the Polytechnic School to the chair of Greek and Latin Philosophy in the Collège de France, and in the following year was rewarded with a seat in the Academy of Moral and Political Sciences. Cousin made him his first assistant in the Ministry of Public Education, but he soon retired to immerse himself for eight years in his work on Aristotle's complete writings and in the study of Sanskrit literature. When the revolution of 1848 was accomplished he was elected to the Assembly, and for a short time was honorary secretary to the Provisional Government. After the election of Louis Napoleon as President he voted for certain repressive laws, but he refused to recognize the *coup d'état* or to take the oath of allegiance to the Emperor. Nevertheless he was requested to retain his professorship in the Collège de France. He declined and went to Egypt with Lesseps when the latter was working out his Suez Canal project, and wrote a series of letters to a Paris newspaper. On his return he produced further installments of the translation of Aristotle, and treatises on Buddhism, the Vedas, the Koran, and Mohammed. He resumed his intimacy with Thiers, who made him secretary general of his Cabinet in 1871. This post he filled till 1873. In 1880 he succeeded Freycinet as Minister of Foreign Affairs in the Cabinet of Jules Ferry. He was a Conservative Republican and an advocate of conciliation, having no sympathy with the aggressive radicalism that prevailed in the Chamber. The remainder of his life was passed quietly in literary occupations and attending to his duties in the Senate, of which he was a life member. He published a "Life of Cousin."

**Sala, George Augustus Henry**, an English journalist, born in London in 1828; died in Brighton, Dec. 8, 1895. His father, an Italian, married a popular English singer, and the son was brought up with the expectation that he would become an artist. Young Sala, however, early became a contributor to "Household Words," as well as a close copyist of the style of Mr. Dickens. He founded the "Temple Bar Magazine," of which he was the first editor, and in the earlier portion of his career wrote much for periodicals. In 1863 he visited the United States as a correspondent of the London "Daily Telegraph," and in 1864 visited Algeria in the same capacity. During the Franco-Prussian War Mr. Sala was the war correspondent to the "Daily Telegraph," and he was dispatched by that journal to various parts of the world on other important occasions. For several years he conducted a weekly paper entitled "Sala's Journal," and having published in its columns in 1892 an attack on a labor organization known as the "Domestic Servants' Union" was subsequently mobbed in Hyde Park. He made large sums in journalism, but was recklessly extravagant and finally became bankrupt. The close of his life was embittered by failing health and broken fortunes, although the "Daily Telegraph" granted him a pension of \$5,000 a year. A month before his death he became a Roman Catholic. He was brilliant and versatile, but his work was all ephemeral, and much of it is already forgotten. His many writings include: "La Belle Alliance" (1856); "A Journey due North" (1858); "Twice Round the Clock" (1859); "Lady Chesterfield's Letters to her Daughters" (1860); "Dutch



Pictures" (1861); "The Two Prima Donnas" (1862); Accepted Addresses" (1862); "Breakfast in Bed" (1863); "Quite Alone" (1864); "My Diary in America in the Midst of War" (1865); "Trip to Barbary by a Roundabout Route" (1865); "From Waterloo to the Peninsula" (1866); "William Hogarth: Essays" (1866); "Charles Dickens" (1870); "America revisited" (1882); "Living London" (1883); "A Journey due South" (1885); "Famous People I have met" (1892); "My Life and Adventures" (1895).

**Saunders, John**, an English novelist, born in Barnstaple in August, 1811; died in Richmond, March 29, 1895. His earliest book was a volume of poems, and in 1845 he published an excellent little work called "Cabinet Pictures of English Life from Chaucer." "The People's Journal," the earliest of illustrated magazines, was founded by him in 1846. Besides a drama, "Love's Martyrdom," he was the author of the novels: "The Shadow in the House" (1860); "Abel Drake's Wife" (1862); "Martin Pole" (1863); "One against the World" (1865); "Bound to the Wheel" (1866); "Hirell" (1869); "Israel Mort. Overman" (1876); "The Shipowner's Daughter" (1876); "The Lion in the Path" (1876); "Jasper Deane" (1877); "The Sherlock" (1879); "The Tempter Behind" (1880); "The Two Dreamers" (1880); "Victor or Victim" (1883); "A Noble Wife" (1884); and "Miss Vandeleur" (1884). "Abel Drake's Wife," which he dramatized, was the best of his novels. His daughter, Mrs. Katherine Saunders Cooper, was author of "Gideon's Rock" and other novels.

**Savory, Sir William Scovell**, an English surgeon, born in 1826; died in London, March 4, 1895. He was connected throughout his professional life with St. Bartholomew's Hospital. He entered the College of Surgeons in 1847, gained the medical scholarship of London University in 1848, became a fellow of the College of Surgeons in 1852, and devoted himself to surgery. For some time he was Professor of Comparative Anatomy and Physiology, and for several successive years he was President of the College of Surgeons. His skill in surgical manipulation was famous. He was made a baronet in 1890. He wrote a book called "Life and Death."

**Scharf, Sir George**, an English artist, born in London in 1820; died there April 19, 1895. He was the son of a Bavarian artist settled in London, and after going through the University College school studied art at the Royal Academy and began to illustrate books. He went to Lycia with Sir Charles Fellows to draw the illustrations for his book, made a success in 1847 with his designs for Macaulay's "Lays," and produced fine drawings for Milman's edition of Horace (1849) and for Smith's "Dictionary of Antiquities." He lectured at the Royal Institution on ancient art, and was made director of the National Portrait Gallery, established in 1857. That great collection was made by him, and when he retired in 1894 he was knighted.

**Schenck, Karl Emanuel**, ex-President of the Swiss Confederation, born in Bern in 1823; died there July 18, 1895. He was educated as a Protestant minister, was chaplain to the Bern Battalion in 1847 during the campaign against the Sonderbund, and afterward pastor of a church at Scherpfen. Having won a high reputation as a Radical orator in the agitation against the Jesuits, he was in 1855 elected a member of the Government by the Great Council of Bern, and from that time took a prominent part in Swiss public affairs. He represented the canton of Bern in the Council of State from 1857 till 1865, was Vice-President of the Federal Council in 1862, and was President of the Confederation in 1865, 1871, 1874, 1878, 1885, and 1893. At the time of his death, which resulted from a carriage accident, he was chief of the Department of the Interior.

**Sécrétan, Charles**, a French philosopher, born in Lausanne in January, 1815; died there Jan. 22, 1895. He became Professor of Philosophy at the University of Lausanne in 1838, and left it in 1840 to teach in the academy of Neuchâtel, but returned to his old post

in 1866. In his philosophical works he endeavored to harmonize reason and religion, accepting the moral conscience as intuitive. He wrote on social ethics and politics, with strong sympathy for the common people, showing a tendency toward socialism. The Darwinian theory he accepted, and reconciled it with theology. His philosophy was expounded in "Philosophie de la Liberté," "Recherches de la Méthode," and "La Raison et le Christianisme." A later work is "La Civilisation et les Croyances." He wrote also an exposition of the philosophy of Leibnitz, a critical disquisition on Cousin's philosophical method, and a work entitled "L'Idée, L'Histoire."

**Seebohm, Henry**, an English naturalist, born in Bradford, Yorkshire, about 1835; died in London, Nov. 26, 1895. He was educated at the Friends' School in York, and became a steel manufacturer in Sheffield. He was an enthusiastic student of ornithology, and his "History of British Birds and their Eggs" is an authority. His other works include 2 volumes of travels, "Siberia in Europe" (1880) and "Siberia in Asia" (1882); "The Geographical Distribution of the Charadriidæ" (1888); and "The Birds of the Japanese Empire" (1890).

**Seeley, Sir John Robert**, an English historian, born in London in 1834; died Jan. 13, 1895. His father was a London publisher, and the son was educated at the City of London School and at Cambridge, where he was graduated in 1857. In 1869 he became Professor of History at Cambridge University, being at that time widely known as the author of "Ecce Homo," a book that he never definitely acknowledged as his own. This famous work appeared in 1865 and was fiercely attacked by the evangelical party. It reduced to order the opinions of serious thinkers compelled to revise their conceptions of Christ by the progress of events, and was a stimulus to the thought of that time. He had previously published "Classical Studies: An Introductory Lecture" (1863), and after the appearance of "Ecce Homo" his works in their order include "Roman Imperialism" (1869); "The Life and Reign of Edward I., a recasting of an earlier work entitled "The Greatest of all the Plantagenets" (1872); "Lectures and Essays" (1870); "Life and Times of Steen" (1878); "Natural Religion" (1882); "Horace Walpole and his World" (edited, 1883); "The Expansion of England" (1883); "A Short History of Napoleon the First" (1886); "Our Colonial Expansion: Extracts from the Expansion of England" (1887); and "Goethe renewed after Sixty Years" (1894). His style is clear and colorless, and he aims to be exact, impartial, and judicious rather than brilliant or picturesque. In this respect he is the exact opposite of his contemporary Froude. There are indications here and there that this avoidance of ornament and picturesqueness was not the result of a lack of power in that direction, but came from his earnest desire to preserve the truth of history. The influence he exerted as a theologian was far reaching, and is shown in much of the breadth and tolerance of the Church of England now.

**Sharpe, John**, an English clergyman, born in 1840; died at Elmley Lovett, Droitwich, Worcestershire, Dec. 7, 1895. He was graduated at Cambridge in 1869, ordained in 1871, and for ten years held the living of Gissing in Norfolk. In 1883 he became rector of Elmley Lovett. He published "Micah: A New Translation with Notes" (1876); "Notes and Dissertations on the Prophecy of Hosea" (1884); and "The Tree of Life." He was a biblical scholar of conservative views, and was very strongly opposed to the modern school of higher criticism.

**Sime, James**, a Scottish writer, died in London, March 11, 1895. He was for many years the literary adviser of the Messrs. Macmillan, and was the author of "A History of Germany" (1874); "Lessing" (1877); "Deuteronomy, the People's Book: Its Origin and Nature" (1877); "Schiller" (1882); "The Kingdom of All Israel: Its History, Literature, and Worship" (1883); and "Life of Goethe" (1888).



**Smith, George**, an English reformer, born in Tunstall, Staffordshire, in February, 1831; died near Rugby, June 21, 1895. He was the son of a brickmaker, and was put to work in the brickyards at the age of seven. Two years later he was working thirteen hours daily, carrying heavy weights on his head almost continuously. He secured an education with difficulty, and before he was thirty spoke and wrote in regard to the urgent necessity for legislation in behalf of the brickmakers. As the direct result of his efforts, an act of Parliament was passed in 1871 providing for Government inspection of brickyards and regulation of labor in them. He next turned his attention to the deplorable condition of life on the canals, and stated in the "Fortnightly Review," in 1873, that of 100,000 men, women, and children employed on the rivers and canals of the kingdom, 95 per cent. could neither read nor write, and 90 per cent. were drunkards. After several years of persistent agitation the canal-bills act was by his influence introduced into Parliament in 1877 and became a law Jan. 1, 1878. The last sixteen years of his life were spent in the endeavor to bring gypsy children within the scope of the education acts. Mr. Smith was the author of "The Cry of the Children from the Brickyards of England," "Our Canal Population," "Canal Adventures by Moonlight," "Gypsy Life," and "I've been A-gypsying."

**Spender, Mrs. Lillian (Hendland)**, an English novelist, born in London in 1838; died in Bath, Somerset, May 4, 1895. She was the daughter of Edward Hendland, a London physician, and at twenty married John Kent Spender, a physician of Bath. She began to contribute to periodicals before her marriage, and throughout her life was active in promoting the movement for a wider range of work for women. Her first novel, "Brothers-in-law," was published in 1869. Later ones were: "Her Own Fault" (1871); "Parted Lives" (1873); "Jocelyn's Mistake" (1874); "Mark Eymer's Revenge" (1876); "Both in the Wrong" (1878); "Till Death do us Part" (1881); "Mr. Nobody" (1884); "Recollections of a Country Doctor" (1885); "Kept Secret" (1888); "Awakening" (1892); and "No Humdrum Life for me" (1893). She was the mother of 8 children, and her 4 sons were educated at Oxford and Cambridge on the receipts from their mother's books.

**Stambuloff, Stefan**, a Bulgarian statesman, born in Tirnova in 1855; died in Sofia, July 18, 1895. When several Bulgarian youth were selected to be educated in Russia at the expense of the Russian Govern-

ment he was one of those chosen, and was placed at the age of seventeen in the theological seminary at Odessa, where he imbibed more of nihilism and republicanism than of theology. He was a bright, but not a plodding student, nor was he amenable to discipline, and at length he was expelled. Then Krivtsoff, the agent of the Slav Society, who looked after the Bulgarian students, took him into his law office as a clerk, but

he finally discharged the refractory youth, who left for Giurgevo, where he found employment for a time with a soap merchant, and then went back to his native town and worked in a brewery. When the insurrection in Bosnia and Herzegovina broke out young Stambuloff, who in the ancient capital of the Bulgarian Czars conceived ardent hopes of a free Bulgaria, was one of the foremost organizers of the revolutionary party. When the Russo-Turkish War

began he enlisted in the Russian army. When Bulgarian independence was at length established, he opened a law office in Rustchuk, and obtained a little practice. As one of the chiefs of the party that drew up the democratic Constitution of Tirnova, he was elected to represent that Radical stronghold in the Sobranje. Prince Alexander, neglecting the Liberals, who represented the sentiments of the nation, selected his ministry from the small Conservative party, and dissolved the Sobranje when it passed a vote of censure against the ministers. Stambuloff attached himself to Zankoff, but deserted that politician on account of his intrigues with the Russians, and became himself the chief of the Radical wing of the Liberal party. His influence in the country was strengthened by his remarkable disinclination to accept office. In the summer of 1884 he used his influence to effect the overthrow of Zankoff, and he was chosen president of the Sobranje that was elected to sustain the second Karaveloff Cabinet. The revolution of Philippopolis, which brought about the union of Bulgaria and Eastern Roumelia, was accomplished at Stambuloff's instigation by his intimate friend Stoyanoff. When Prince Alexander was abducted, in August, 1886, Stambuloff, as president of the Sobranje, issued a proclamation from Tirnova denouncing as traitors the members of Zankoff's Provisional Government, and appointing Col. Mutkuroff, his brother-in-law, commander in chief of the Bulgarian army. His partisans throughout the country seized the telegraph stations, and the loyal part of the army acted promptly on his suggestions, with the result that the Provisional Government collapsed in three days, and he appointed, in the Prince's name, a Cabinet of which Radoslavoff was the head. He welcomed the Prince at Rustchuk, but acquiesced in his final abdication, being impelled to give up the Prince by a threatening telegram from the Czar. When Alexander departed he committed the powers of the throne to a council of regents, of which Stambuloff was the head and Karaveloff and Mutkuroff the other members. The first regent soon concentrated all power in his own hands by discarding Karaveloff, who was replaced by Jivkoff, an intimate friend of Stambuloff. The Czar, who had promised not to interfere except in case of anarchy, did not think it possible for Bulgaria to exist under an anti-Russian régime, and it was long before he appreciated the strength of the spirit of independence and the amazing energy and resourcefulness of Stambuloff, who, with the support of England and the sympathy of Europe, foiled every effort of the Russians to overturn him. When he procured the election of Prince Ferdinand by the Grod Sobranje, July 4, 1887, he did not lay down his powers, but as Prime Minister imposed his will upon the new Prince. Stambuloff suppressed the plot of Major Panitza and other attempted risings with cruel severity, and made many mortal enemies; but his tyrannical rule was not resented by the people, who were not overtaxed and who prospered under the conditions of quiet and order enforced by Stambuloff. After some of the leaders of the Opposition had been shot, imprisoned, or driven into exile, the rest were so terrified that few candidates appeared to contest the election of 1890 against the Government. Not only the British and the Austrian governments, but Austria's partners in the triple alliance were won over by Stambuloff's success in preserving order. In 1891 the Prime Minister narrowly escaped assassination, the Minister of Finance being struck down in mistake. His acts of vengeance against all rivals and antagonists so multiplied his enemies that he began to grow unpopular. He sacrificed in a measure his reputation for patriotism by changing the Constitution so as to allow the heir to the throne to be baptized as a Roman Catholic. On seeing his position weakened, the ungrateful Prince turned upon him and began to rebel against the dictation of his autocratic Prime Minister. Ferdinand hoped that if Stambuloff would step aside he could become reconciled to the Czar and reelected





as the legitimate Prince. On May 29, 1894, Stambuloff astonished the world by voluntarily resigning his office. The Prince publicly professed gratitude to the retiring president of the Council, but before long he was counted among the enemies of the fallen dictator, who were now bold and fierce enough. Stambuloff had friends, too, many and influential, but the authorities would not protect him, and he knew that he would be assassinated. When his request to be allowed to go to a foreign watering place was denied, he saw that he was doomed. He even knew who were to be his murderers, yet with his wonted fortitude he quietly awaited his fate. At last, when returning in the evening from his club, he was set upon and mortally stabbed and shot by 4 men, whose escape the police facilitated, while they arrested Stambuloff's friends and servants. Even at his grave a demonstration of hatred was made by some army officers. His slayers were the avengers of persons whom Stambuloff had doomed to death by judicial process.

**Stepniak, Sergius Michael Dragomanoff**, a Russian author and revolutionist, born in Hajatsch, in the Ukraine, in 1841; died in London, England, Dec. 23, 1895. He was descended from a family of Cossack origin belonging to the minor nobility in the government of Poltowa. While a student at Kieff, between 1859 and 1863, he published books in the Little Russian dialect, the circulation of which was prohibited by the Russian Government in 1862 on account of their political tendency. He became a tutor of ancient history in the University of Kieff in 1865, and a professor in 1870, but was removed from his chair in 1873, and in 1876, in consequence of strictures on the methods of justice permitted under Count Tolstoi, the Minister of Justice, he was compelled to flee to escape deportation. Settling in Geneva, he produced works in the Little Russian dialect that made a stir in Russia, and in 1877 began a series of reviews under the title "Hromada." While not accepting socialism, he assailed the autocratic system and advocated equal rights for all Russians. Removing to England, he wrote newspaper and magazine articles and books in the English language. His principal works are: "The Turks within and without"; "Tyrannicide in Russia," "Past European Peoples," "Little Russian Internationalism," "The Propaganda of Socialism," and "Historical Poland and the Muscovite Democracy," besides his monographs on the ethnography, history, and literature of Little Russia. With M. Antonovich he collected and edited Little Russian folk songs.

**Stevenson, Joseph**, an English historian, born in Berwick-on-Tweed, Nov. 27, 1806; died in London, Feb. 8, 1895. He was the son of a surgeon, and was educated at Glasgow and Durham Universities; worked in the British Museum on the Arundel manuscripts; arranged the chapter records of Durham Cathedral; received the degree of M. A. for this work; and was ordained by the bishop, though he had previously contemplated entering the Presbyterian ministry. He continued his literary work, however, editing Boucher's "Glossary of Archaic and Provincial Words"; "Latin Hymns of the Anglo-Saxon Church"; "The Lindisfarne and Rushworth Gospels"; "Chronicles of Melrose and Lanercost," and other volumes for the Bannatyne, the Maitland, and the Roxburghe Clubs and the English Historical Society. From 1849 till 1862 he was Vicar of Leighton Buzzard, in Bedfordshire, and during this period he published "Church Historians of England" (1853); "Chronicon Monasterii de Abington"; "Letters and Papers illustrative of the Wars of the English in France, temp. Henry VI"; and "Narratives of the Expulsion of the English from Normandy." In 1863 he joined the Roman Catholic Church. He obtained a post in the Record Office and issued a "Calendar of State Papers of the Reign of Elizabeth," followed by "Documents illustrative of the History of Scotland, 1286-1306." At the age of sixty-three, on his wife's death, he entered St. Mary's College, Ascot, as a student and a lecturer, and at the same time was

employed by the Historical Manuscripts Commission to examine collections of manuscripts owned by corporations and private families. He was ordained a Roman Catholic priest in 1872, and was sent to Rome by the English Government to examine the archives of the Vatican in search of documents illustrative of British history. On his return to England, in 1877, he entered the novitiate of the Society of Jesus at Roehampton, and when his period of probation was ended he engaged in missionary labor and resumed his literary activity. He contributed to the "Month" and other periodicals, edited Nau's "History of Mary Stuart" (1883), and published "The Truth about John Wyclif" (1885) and "The First Years of the Life of Mary Stuart" (1886).

**Suppé, Franz von**, an Austrian musical composer, born in Spalato, Dalmatia, April 20, 1820; died in Vienna, May 21, 1895. His family, originally from Belgium, had for two generations been settled in Cremona, Italy. His early proficiency with the flute and other instruments, his intercourse with Donizetti, who was his uncle, and his strong love of music impelled him to adopt a musical career. He had received some training at the Vienna Conservatory and had begun to compose operettas, symphonies, quartettes, etc., at the age of fourteen, and at fifteen produced a mass of his own in the church at Zara. After a thorough course at the musical academy, and after receiving valuable instruction from Donizetti, he was appointed, at the age of twenty-one, Professor of Harmony in the academy and engaged as conductor of the orchestra of the Josephstadt Theater. He was afterward conductor at Presburg, but went back to Vienna in 1844. He composed the music for 2 grand operas and for 165 musical farces and vaudevilles, besides requiems, symphonies, overtures, and other concert pieces, of which the most successful was the overture to "Poet and Peasant." He had no striking success until he produced the operetta "Fatinitza" in 1876, which was followed in 1879 by "Boccaccio." His other best-known works are: "Zehn Mädchen und kein Mann"; "Flotte Bursehe"; "Die Schöne Galathea"; "Leichte Kavalierie"; "Donna Juanita"; and "Bellmann."

**Sybel, Heinrich von**, a German historian, born in Düsseldorf, Dec. 2, 1817; died in Marburg, Aug. 1, 1895. He was the oldest son of a Prussian jurist, who was ennobled in 1831. After a successful course at the gymnasium of his native city, where he showed his preference for history, especially for Niebuhr's classical Roman history and Edmund Burke's works, he went to the University of Berlin as a pupil of Leopold von Ranke and of Savigny, with whom he studied history and law from 1834 to 1838. Ranke had just founded the first of those historical seminaries which are the pride of the German universities as temples of original research. In 1838 Sybel was graduated as a doctor with the thesis "De fontibus libri Jordanis de origine actaque gestarum," a sagacious investigation of the sources of the great historian of the Goths. In 1840 he became a private tutor at the University of Bonn, and one year later he published his "Geschichte der ersten Kreuzzuges" (Düsseldorf, second edition, 1881), in which he destroyed the legend of Peter the Hermit as the originator, and Godfrey of Bouillon as the leader of the first crusade. He was appointed professor extraordinary in 1844, and published "Entstehung des deutschen Königtums" (second edition, 1881), the conclusions of which were strongly attacked by Georg Waitz and Felix Dahn, the two greatest authorities on that subject. In the same year Sybel wrote, with the Orientalist Gildemeister, "Die Unechtheit des heiligen Rockes in Trier," a polemic against the clerical party and the pilgrimages to the holy coat in Treves. The next year he was called to a full professorship in Marburg and elected to the Diet of the Hessian Electorate, and in 1850 also to the imperial Diet at Erfurt. By a special effort of King Maximilian of Bavaria, he was called to the University of Munich, where he soon became a member of the Acad-



emy of Sciences. He founded the first historical seminary in Munich; organized with Ranke the Historical Commission of the Bavarian Academy, whose first secretary he became and later its president; caused the publication of the German records of the diets; and founded in 1859 the "Historische Zeitschrift." But political differences induced him to resign in 1861 and return to Bonn as Dahlmann's successor. He became a member of the Prussian House of Representatives at the time of the constitutional conflict between the Government and the Parliament on the question of the reorganization of the Prussian army, for which the House declined to make appropriations. Sybel joined the anti-Bismarckian party; but, fortunately for his future, he was obliged, on account of an eye disease, to leave the House in 1864. Meanwhile he published "Die deutsche Nation und das Kaiserreich" (Düsseldorf, 1862), sharply criticising the nebulous policy of the empire during the Middle Ages. During his Bonn career he also published "Kleine hist. Schriften" (3 volumes, Munich, 1863-'69); "Vorträge u. Aufsätze" (Berlin, 1874); "Klerikale Politik im 19. Jahrhundert" (Bonn, 1874). But the work that established his world-wide fame is the "Geschichte der Revolutionszeit von 1789-1800," in 5 volumes, which he had begun during the storm and stress period of 1848 (1853-'80). In this work he has shown that the great revolution was one single process of disintegration in the destruction of Capetian France and the degenerate holy Roman Empire and the partition of Poland. The entire work was based upon the hidden sources collected in the archives of the principal capitals of Europe. In the spring of 1887 he was elected a member of the Constitutional Diet of the North German Confederation, and joined the Moderate National-Liberal party. After his resignation he founded in Bonn the "Deutscher Verein der Rheinprovinz," the principal instrument against the Ultramontane party. In 1874 he was elected a representative for Magdeburg, and in 1876 and 1879 was re-elected. The year 1875 marks the most important epoch in his life, when he was called by Emperor William I to be director of the Prussian state archives and the Berlin secret archives as well as of the "Acta Borussica," the chief source of the history of Prussian administration in the eighteenth century. In this capacity, and as a member of the Berlin Academy of Sciences, he began the publication of the archive documents in 1878, and 62 volumes of the most unique and valuable historical matter have appeared. At the same time he began by order of the academy, together with Max Duncker, an edition of the political correspondence of Frederick the Great. He was also a member of the Central Commission of the "Monumenta Germaniæ historica." In 1881 Prince Bismarck authorized Sybel to use the Prussian archives in preparing the newest history of Prussia and Germany. As the fruit of these researches arose Sybel's monumental work, "Begründung des deutschen Reiches durch Wilhelm I.," the first volume of which appeared in 1889, and Vols. VI and VII, comprising the history of the North German Confederation and the origin of the war of 1870, at the close of 1894. It is unsurpassed in the art of relating diplomatic negotiations, and is thoroughly German, and yet it shows rare moderation and justice in judging enemies. With this work, which was to be concluded with the eighth volume, Sybel's life was ended. June 13 he traveled to Marburg, where his son Ludwig is Professor of the History of Arts at the university. While writing a letter to a French publicist concerning the causes of the Franco-Prussian War he was seized with paralysis of the lungs, and he died the next day. Sybel was the most excellent representative of that brilliant epoch of German historiography which, beginning in the forties of this century, received its peculiar character under the pressure of the political and national revolutions in Germany and strongly contributed toward the establishment of the modern German Empire. Prince Bismarck seven years ago thanked him "for his long

co-operation in the common patriotic work of founding the empire."

**Taafe, Graf Eduard**, an Austrian statesman, born in Vienna, Feb. 24, 1833; died in Ellischau, Nov. 29, 1895. In his childhood he was the companion of the Archduke Franz Josef, who became Emperor. He entered the public service in 1852, and rose rapidly, becoming Governor of Salzburg in 1863 and Stadthalter of Upper Austria in 1867. In the same year he entered the Austrian ministry under Graf Beust as Minister of the Interior. When the *Bürgerministerium* was formed, Dec. 30, 1867, he received the portfolio of National Defense, and when Prince Auerperg retired he took provisionally the presidency of the Council. When the Hohenwart ministry came in, Taafe was appointed Governor of the Tyrol, and after filling that office for eight years he was called into the Stremayr Cabinet as Minister of the Interior in February, 1879, and in the following August he formed a new Cabinet, in which, in addition to the presidency, he took the portfolio of the Interior. The Taafe régime was characterized by the disappearance of the constitutional theories and the growth of federalism. He was originally an adherent of the Constitutional group, but was gradually alienated from the German Liberals. He had finally to rely upon the support of the Clerical Feudalists, the Czechs, and the Poles, in carrying out his policy of conciliation. The rise of the young Czechs and their extreme demands, which imperiled the Constitution, led him to seek a new alliance with the German Liberals; but they rejected his overtures, and voted with the Feudalists and the Poles against his bill for the extension of the franchise, upon the rejection of which he resigned, Nov. 23, 1893.

**Tauchnitz, Baron Christian Bernhard**, a German publisher, born in Schleinitz, near Naumburg, in 1816; died in Leipzig, Aug. 14, 1895. He was trained in the establishment of his uncle, the publisher of cheap editions of the classics, and in 1837 set up a printing establishment of his own, printed books for other publishers, and did the public printing for the Saxon Government. He began in 1841 the collection of British authors, which finally embraced 3,000 volumes, and subsequently issued books for the young, French classics, collections of German authors, editions of the Greek and Roman classics, handbooks of logarithms, legal and theological works, editions of the Bible, and dictionaries and manuals of conversation. In 1843 Bernhard Tauchnitz began to enter into arrangements with English authors, whereby he paid them an honorarium and obtained the exclusive authorization to print their books on the Continent, but agreed not to import his editions into England or her colonies, nor to hinder the sale of original English editions on the Continent. After the first international copyright treaty was made between England and the Prussian and Saxon governments, in 1846, his editions were protected by law. He was ennobled by the Duke of Coburg in 1877, and was a member of the Upper Chamber of the Saxon Diet.

**Thomson, Joseph**, a Scottish traveler, born in Penpont, Dumfriesshire, Feb. 2, 1858; died in York Gate, Aug. 2, 1895. He studied geology at Edinburgh under Sir Archibald Geikie, and at twenty joined Keith Johnson's African expedition. Owing to the death of its leader, Mr. Thomson became the head of the expedition, and the results of this journey appear in his book "To the Central African Lakes and back" (1881). He was at once ranked among the foremost of African explorers, and in 1888 headed an expedition to Masailand. In 1885 he went to Sokoto in behalf of the Royal Niger Company, and his efforts secured the Central Soudan to Great Britain. In 1888 he explored the region of the Atlas mountains in Morocco, and in 1891 the region between Lakes Nyassa and Bangweolo, from which he returned with shattered health. He was a man of great energy and daring as well as a most entertaining writer, and in his journeys was able to avoid all serious conflict with the natives. He was the author of "Through Masai



Land" (1885); "Ulu: An African Romance," with Miss H. Smith (1888); "Travels in the Atlas and Southern Morocco" (1889); and "Life of Mungo Park" (1890).

**Thornycroft, Mary**, an English artist, born in Thornham, Norfolk, about 1812; died in London, Feb. 1, 1895. She learned sculpture under the instruction of her father, John Francis, married Thomas Thornycroft, a fellow-pupil, and went with him to study in Rome, after exhibiting several works in the Royal Academy. Her most famous work is the "Girl skipping," shown at the Paris Exposition of 1855.

**Thorold, Anthony Wilson**, an English prelate, born in Hougham, Lincolnshire, June 13, 1825; died in Farnham Castle, Surrey, July 2, 1895. He was the younger son of the Rev. Edward Thorold, vicar of Hougham-cum-Marston, and was educated at Oxford. His first important charge was that of St. Giles-in-the-Fields, London, where he remained from 1857 to 1867. In 1868 he was minister of Curzon Chapel, Mayfair, and the next year he became vicar of St. Pancras, London, a vast parish including congregations of the very rich and the very poor. He was made canon residentiary of York in 1874, and in 1877 was appointed Bishop of Rochester. In 1891 he was translated to the see of Winchester, in which he had the oversight of 552 parishes and more than 800 clergy. He fixed his residence at Farnham Castle, Surrey, a great historic pile much out of repair, but which, from his own resources, he did a great deal to restore and adorn. Bishop Thorold was a frequent visitor to the United States. He was a tireless worker, and possessed great powers of endurance. He was a total abstainer from conviction, and wrote and spoke frequently in defense of his position. In his earlier career he was a Low-churchman, and his evangelical habit of thought was never greatly changed. He contributed frequently to periodicals, and his writings in magazines and in book form were very popular. His published volumes include: "On being Ill" (1865); "The Presence of Christ" (1869); "Parochial Missions" (1873); "The Gospel of Christ" (1881); "The Claim of Christ on the Young" (1882); "The Yoke of Christ" (1883); "Questions of Faith" (1892); and "The Tenderness of Christ" (1894).

**Toulmin, Camilla**, an English author, born in 1812; died in Dulwich, Feb. 16, 1895. She began early to write for the magazines, being thrown upon her own resources by the death of her father, who was a solicitor. She was editor of the "Ladies' Companion" and of the "Monthly Magazine" for some years. In 1848 she married Newton Crosland, a London merchant. Most of her subsequent writings pictured the trials and hardships of the poor, and the political and social life of the people. Her books include: "Lays and Legends of English Life"; "Partners for Life"; "Stratagems"; "Lydia: A Woman's Book"; and "Landmarks of a Literary Life" (1894).

**Troilet, Marie**, a Swiss author, born in Vaud in 1831; died near St. Maurice at the end of July, 1895. She was the daughter of a Protestant pastor, and late in life embraced the Roman faith. She wrote under the pen name "Mario," and attained success with a book of "Pictures from Palestine." Of a more enduring reputation are "Un vieux Pays," her "Silhouettes Romandes," and her collection of the folklore of Valais. Her last book was "Edelweiss" (1894).

**Tyrwhitt, Richard St. John**, an English clergyman and author, born about 1828; died in Oxford, Dec. 6, 1895. He was graduated at Oxford in 1849, and ordained two years later. He became vicar of St. Mary Magdalen, Oxford, in 1858, and held that living until 1872, after which he devoted himself to literature and art. His published works include: "Clerical Powers and Duties" (1861); "Schooling of Life" (1864); "Handbook of Pictorial Art" (1868); "Christian Art and Symbolism" (1872); "Our Sketching Club: Letters and Studies on Landscape Art" (1874); "The Art Teaching of the Primitive Church" (1875); "Hugh Heron, Christ Church: An Oxford Novel" (1880); "Greek and Gothic" (1881); "Natural The-

ology of Natural Beauty" (1882); "Christian Ideals and Hopes" (1886); "Free Field Lyrics" (1888).

**Venables, Edmund**, an English archæologist, born in London in 1819; died there March 5, 1895. He was graduated at Cambridge in 1842, and became curate of Hurstmonceux in 1844 and of Bonchurch in 1853. In 1867 he was made canon residentiary and precentor of Lincoln Cathedral. He wrote much on architecture and archæology, and was an authority on the history and architecture of his own cathedral. His "Walks through the Streets of Lincoln" was widely popular. His other published works include: "History of Hurstmonceux Castle" (1851); "History of the Isle of Wight" (1860); "The Church of England: Its Planting, Settlement, Reformation, Renewed Life" (1886); and "Bunyan" (1888). He also edited "The Private Devotions of Lanelet Andrewes" (1883) and Bunyan's "Pilgrim's Progress" and "Grace Abounding," with notes.

**Villers-Stuart, Henry Windsor**, an English author, born in 1827; died in Villierstown, Ireland, Oct. 12, 1895. He was educated at University College, Dublin, and was for a time a clergyman of the Establishment, but presently retired. He was vice-lieutenant for County Waterford, 1873-74, and again from 1880 to 1885. He was the author of "Eve of the Deluge" (1851); "Nile Gleanings" (1879); "The Funeral Tent of an Egyptian Queen" (1882); "Egypt after the War" (1883); and "Adventures amid Equatorial Forests and Rivers."

**Vishnegradsky, Ivan Alexeievich**, a Russian statesman, born Jan. 1, 1832; died in St. Petersburg, April 5, 1895. He was a son of the archpriest of Vishni-Volotchek, and was educated for a teacher in the Pedagogic Institute. After teaching mathematics in the cadet school in 1851, he was sent to Germany to prepare for a higher post by special studies, and on his return he was appointed Professor of Mechanics in the Artillery Academy. In 1875 he was made director of the Technological Institute. He wrote books and delivered popular lectures on subjects connected with technical education, and in conjunction with his work as a teacher became a promoter of large industrial enterprises, such as the establishment of powder factories and waterworks, and played an important part in the development of the railroad system of Russia. Alexander III made him a councillor of state in 1886, and in 1887 appointed him Minister of Finance after the dismissal of Bunge. Vishnegradsky succeeded in producing budgets without deficits and brought about an improvement in the Government finances. He began the conversion of the Russian loans, purchased railroads for the state, and established an efficient control over the financial administration and the tariffs of private railroads, and aided the development of domestic manufactures by the customs tariff of 1891. He retired when entirely broken down by overwork and care in 1892, recommending M. Witte as his successor.

**Vogt, Karl**, a German biologist, born in Giessen in 1817; died in Geneva, May 6, 1895. He won a name as a naturalist by his work as collaborator with Agassiz and Desor in their treatise on fresh-water fishes, and after pursuing his studies in Paris for two years and visiting Italy he returned to Germany to occupy a chair in the university of his native town. Soon the revolution of 1848 broke out, and as an ardent democrat he threw himself into the movement. He was chosen colonel of the Giessen civil guard, and was elected to the National Assembly at Frankfurt, where he distinguished himself as a brilliant and fiery orator and a thoroughgoing Radical. He went with the rump of the Parliament to Stuttgart, and clung to the National party to the last. His political opinions drove him into exile. He resided for a short time at Bern, and then went to Nice and took up again his biological researches. A year later he was called to the chair of Biology in the University of Geneva. He became one of the leaders of the materialistic school of thought, and published many works, scientific and polemical. He also took an active part in the public



affairs of his adopted country, and was elected to the National and to the Federal Council. Of his published works, the one that made the most stir was "Science and Superstition," a fierce polemic against the interposition of religious authority as a criterion of scientific truth. His "Investigations into Animal Communities" is a caustic satire on the political and social defects of modern civilization. Another controversial work was "Man and his Place in the Creation and the History of the Earth." He wrote also a great work on the "Manmifers," and a widely read "Comparative Anatomy."

**Wade, Sir Thomas Francis**, an English scholar, born in 1818; died in Cambridge, July 31, 1895. He was educated at Harrow, and entered the army in 1838. A residence of forty years in China, together with his eminent ability, made him a high authority on Chinese topics, and his services in the negotiation of treaties were of great assistance to the furtherance of English trade in the East. He became minister to China and chief superintendent of British trade in 1871, and retired on a pension in 1883. In 1888 he was appointed first Professor of Chinese at Cambridge.

**Warren, John Byrne Leicester**, Baron de Tabley, an English poet, born at Tabley House, Knutsford, Cheshire, April 25, 1835; died Nov. 22, 1895. He was educated at Eton and Oxford, and succeeded his father as the third Baron de Tabley in 1887. He was one of the most learned of English poets, but was sensitive and diffident. His writings were by no means so widely known as they deserved to be, but the circle of readers to whom his name was familiar esteemed him as a genuine poet. Perhaps his highest attainment is reached in the serious dramas "Orestes" and "Philoctetes," but all his work reveals thorough classical sympathies, a delicate, refined taste and great wealth of imagery. His first book, published under the pseudonym John P. Lancaster, was "Præterita" (1863). His subsequent works include: "Eclogues and Monodramas" (1864); "Studies in Verse" (1865); "Philoctetes" (1866); "Orestes" (1867); "A Screw Loose: A Novel" (1868); "Ropes of Sand: A Novel" (1870); "Rehearsals: A Book of Verse" (1870); "Searching the Net: A Book of Verses" (1873); "The Soldier of Fortune: A Tragedy" (1876); "Study of Book Plates" (1880); "Poems: Dramatic and Lyrical" (2d series, 1895).

**Williamson, William Crawford**, an English naturalist, born in Scarborough, Nov. 24, 1816; died in Clapham, June 23, 1895. His first scientific monograph was published when he was but eighteen. He practiced medicine for many years at Manchester, but during his whole career was constantly engaged in scientific pursuits. Between 1845 and 1847 he published a notable series of papers on the development of fishes' teeth and scales. His most important investigations in later years related to the structure of fossil plants, his "Organization of the Fossil Plants of the Coal Measures" taking high rank as an authority. He became Professor of Natural History and Geology at Owens College in 1851, and held the chair of Botany there until 1892.

**Worth, Charles**, a French dressmaker, born in Bourne, Lincolnshire, England, in 1825; died in Paris, March 11, 1895. His father, a solicitor, who had become impoverished by speculation, apprenticed him at the age of thirteen to a dry-goods firm. When his time expired he went to Paris, at the age of twenty, and for twelve years he was employed by a silk house, to whose business he added the branch of making up garments. Having been refused a partnership, he set up an independent business in the Rue de la Paix, having at first M. Dobergh, a Swede, for his partner. He began by employing 50 persons, but when he got the Princess Metternich's custom, and through her that of the Empress Eugénie, and when the fashionable people of Paris, and eventually the wealth and fashion of all the European capitals and of the United States flocked to him he employed 1,200. He originated many designs that were universally

adopted, such as the walking dress with short skirt and jacket of the same material.

**Zorilla, Manuel Ruiz**, a Spanish politician, born in Madrid in 1834; died in Burgos, June 13, 1895. He studied and practiced law in Madrid, and at the age of twenty-two was elected to the Cortes. Very soon he won reputation as an earnest and eloquent champion of the Liberal cause, but in 1860 he was driven into exile, having taken part in the insurrection against Isabella. When the Bourbon throne was overturned in 1868, he returned and presided over the Parliament that offered the crown to the Duke of Aosta in 1870. When Amadeo mounted the throne he made Zorilla his Prime Minister. The King of Italy conferred upon him the order of the Annunziata, usually reserved for royalty. Zorilla earned the gratitude and admiration of the Spanish people by enlarging their liberties and introducing sweeping political reforms; but the development of his plans was interrupted when Amadeo, after a troubled reign of three years, abdicated and went to Portugal, accompanied by the Prime Minister, who, however, soon returned to Spain and embraced republicanism. He sometimes took a conspicuous part in affairs during the interregnum, and became a thoroughgoing republican and a leader of the advanced section of the party. When the Bourbons were restored in 1875 in the person of Alfonso XII, he was sent into exile a second time. He took up his residence in Paris first, and afterward lived in England and Switzerland, and sometimes in the south of France, whence he could communicate easily with his partisans in Spain. He returned to Spain only a few months before he died, renouncing, on account of failing health, any further participation in politics. While Castelar and others renounced violence or accepted the monarchy Zorilla remained a revolutionary republican and schemed and plotted against the monarchy.

**OHIO**, a Central Western State, admitted to the Union in 1803; population, according to last census (1890), 3,666,719, it being fourth in rank of the States; area, according to the United States Geological Survey, 41,060 square miles, of which 40,760 is land surface and 300 water surface. Capital, Columbus.

**Government.**—The State officers during 1895 were: Governor, William McKinley, Republican; Lieutenant Governor, Andrew L. Harris; Secretary of State, Samuel L. Taylor; Auditor, Ebenezer W. Poe; Treasurer, William T. Cope; Board of Public Works, Frank J. McCulloch, Charles E. Groce, Edwin Lybarger; Commissioner of Common Schools, Oscar T. Corson; Judges of the Supreme Court, Franklin J. Dickman until February 9, Thaddeus A. Minshall, Marshall J. Williams, Jacob F. Burkett, William T. Spear, Joseph P. Bradbury, John A. Shauck from Feb. 9; Clerk of the Supreme Court, Josiah B. Allen; Dairy and Food Commissioner, Frederick B. McNeal.

**Finances.**—The receipts for the fiscal year 1895, including balance from 1894, were \$3,443,383.94, which were used by the following departments and institutions: Board of Public Works, \$105,337.70; Soldiers' and Sailors' Home, from United States, \$92,181.41; Dairy and Food Commissioner, from fines, \$18,403.37; Commissioner of Railroads and Telegraphs, from railroad companies, \$15,355.33; Inspector of Mines, from fines, \$5; total receipts for special purposes, \$231,282.81; grand total for all purposes, including balance, \$4,029,394.60; total disbursements for year ending Nov. 15, 1895, \$3,795,721.22; balance in treasury Nov. 16, 1895, \$233,673.38.



The public funded debt of the State in January, 1892, was \$2,295,665, bearing 3 per cent. interest. The debt on Nov. 15, 1895, was \$1,791,665. This sum includes \$500,000 of a loan by certificate of indebtedness payable July 1, 1896, also bearing 3 per cent. interest, which was authorized by the seventy-first General Assembly. There has been paid on the public debt of the State \$1,000,000 in the past four years. The entire funded debt of the State will be extinguished on July 1, 1900.

**Education.**—The value of the school property of the State is more than \$40,000,000. The school enumeration in 1895 was 1,159,258. The number of teachers employed during the whole of the school year was 17,330. The number of pupils in attendance was 817,490. The average daily attendance was 593,465. The amount paid teachers was \$7,907,860.71. The number of new schoolhouses erected was 275, at a cost of \$1,246,376. During the year the amount received for school purposes from taxation was \$11,422,551.81; from irreducible school fund and other State school property, \$251,569.06; and from other sources, sales of bonds, etc., \$2,058,981.35; making a total of \$13,733,102.22.

**Lynching.**—Two cases of attempted lynching occurred in the State during the year, and in both instances the troops were called out to support the law and protect the prisoners in jail against the mob. In Seneca County 2 men were killed before the troops arrived. In Fayette County the troops were acting under orders of the sheriff when the mob assailed the jail. The troops fired, and several persons were killed. In both cases the prisoners were protected and the lynchers driven off. The colonel in charge of the troops was indicted and tried for the killing, but was acquitted on the ground that he was performing his duty.

**Mining.**—The report of the chief mine inspector, filed in August each year, relates to the year preceding. His report made in 1895 gives the year's production of coal as 11,910,219 tons, a heavy falling off in consequence of labor disputes. Of this amount, 2,555,466 tons were mined by machinery, this method being confined to 9 of the 30 coal-producing counties of the State. The number of persons employed in and about the mines was 31,493, of whom 25,163 were miners. There were 119 new mines opened during the year, 67 remained suspended, and 59 were either exhausted or abandoned. At the close of the fiscal year there were 1,163 mines in the State, of which 1,096 were in operation, which is 39 more than during 1893. Of this number, 411 employ more than 10 men, and 685 fewer. The accidents numbered 257, of which 45 were fatal. There was 1 accident for each 46,343 tons of coal mined; 264,672 tons were mined to each life lost. The iron-ore production was 58,043 tons; fire-clay, 942,913 tons.

**Canal Property.**—A decision by the Supreme Court, handed down in June, conclusively determines that land occupied and used by the State for canal purposes becomes the property of the State absolutely in fee. In November, 1893, the Attorney-General, acting by direction of a resolution of the General Assembly, instituted proceedings to oust the Pennsylvania Company from occupying with its tracks and depots the

portion of what was formerly the Miami and Erie Canal in Cincinnati, between Broadway and the Ohio river. In deciding the case in favor of the State, the court allowed one hundred and twenty days for the railway company to obtain from the State the right to keep its tracks and depots upon the premises in controversy. Before the time expired, a settlement was effected.

**Arbitration.**—The State Board of Arbitration, during the two and a half years of its official existence, has been called to deal with 28 strikes and lockouts, of which 15 have been settled wholly or partly through its agency. The board in its report called attention to an important defect in the law and suggested its amendment. Literally interpreted, the statute now makes no provision for services of the board where a controversy arises between employer and employees of any firm, company, or corporation, operating in different counties, where the several employers act together on the one hand and groups of employees on the other.

**Military-park Monuments.**—The Ohio, Chickamauga, and Chattanooga National Military Park Commission rendered its report to the Governor, showing the completion of its work. It erected 55 monuments to mark the places where Ohio troops fought and died on that historic field. All its liabilities were paid at the time of the report except the cost of publishing the report itself, and without this expenditure there remained a balance in the hands of the treasurer of \$6,434.82.

**Hocking Valley Sufferers.**—The labor disputes in the Hocking Valley coal mines kept the mines idle during the greater part of 1894, causing such distress that, in January, 1895, the miners were forced to appeal for assistance. Gov. McKinley requested certain cities and villages to give supplies and money to relieve their needs. The response was prompt and generous. A large quantity of provisions and clothing and other needed supplies were shipped from time to time to points where destitution existed, and \$4,948.87 in money subscribed, of which about four fifths were expended. There were 2,722 families assisted. The total value of the supplies, including provisions and clothing, was estimated at \$31,785.

**No Legislative Session.**—For the second time in the history of the State there was no legislative session during the year. The first Constitution of Ohio, adopted Nov. 29, 1802, provided that the General Assembly should "meet on the first Monday of December in every year." The present Constitution provides that "all regular sessions of the General Assembly shall commence on the first Monday of January biennially." This constitutional provision has been only twice observed.

**Limited Woman Suffrage.**—The law passed in 1894, granting women the right to vote for school officers and to sit on school boards, was decided to be constitutional by the circuit court of Franklin County, and subsequently by the Supreme Court, on the ground that the whole subject of the public schools is delegated to the General Assembly. Women registered and voted in considerable numbers in some municipalities, and some were elected to school boards.

**Political.**—The Republican State Convention was held in Zanesville May 28 and 29. There was a sharp contest over the nomination for Governor, 8 candidates being voted for. On the sixth ballot Asa S. Bushnell, of Springfield, a wealthy manufacturer of agricultural implements, was nominated. The significance of the nomination lay in the fact that Mr. Bushnell was the avowed choice of the friends of ex-Gov. Foraker, and was opposed by the friends of Gov. McKinley. The contest between the two factions also affected the choice for the other offices. The nominations following that for Governor were made on the second day, and were as follows: For Lieutenant Governor, Asahel W. Jones; Auditor, A. D. Guilbert; Judge of the Supreme Court, Thaddeus A. Minshall; Clerk of the Supreme Court, Josiah B. Allen; Attorney-General, Frank S. Monett; Treasurer, Samuel B. Campbell; Member of the Board of Public Works, E. L. Lybarger. The platform included these declarations:

We reaffirm our adherence to the principles of the Republican party as defined by the national convention in 1892, chief among which are: A protective tariff, reciprocity, fair elections, and honest money, consisting of gold, silver, and paper, every dollar as good as any other dollar, and all backed by the national faith and honor. We favor bimetallism and demand the use of both gold and silver as standard money, either in accordance with a ratio to be fixed by an international agreement or under such restrictions and provisions as will secure the maintenance of the parity of values of the two metals.

We denounce the present Democratic Administration, whose vicious and vacillating course has brought us distress at home and humiliation abroad. It has inaugurated a policy looking toward ultimate free trade, which has deranged business, crippled our industries, distressed our homes, and dealt labor a serious blow. With deplorable incompetency it has failed to raise revenue enough to run the Government, and has had to borrow in less than two years \$162,000,000, mainly to pay ordinary running expenses, selling in secret to favor foreign syndicates the bonds of the Government at prices far below their actual value. We denounce the present administration of the Pension Bureau for its betrayal of the interests of the Union soldiers.

We indorse the able, honest, and business-like administration of Gov. William McKinley.

The election of a Republican Legislature in this State next November will enable Ohio to send to the United States Senate a Republican colleague to that grand old statesman John Sherman, who has so long and ably sustained the honor of Ohio as her representative in that august body.

The Prohibition Convention was held in Springfield, June 12, and the following ticket was nominated: For Governor, Seth H. Ellis; Lieutenant Governor, J. W. Sharp; Attorney-General, W. C. Bates; Auditor, A. S. Caton; Treasurer, J. H. Hawkins; Judge of the Supreme Court, John T. Moore; Clerk of the Supreme Court, D. F. Spicer; Member of the Board of Public Works, James Benjamin. A choice for United States Senator was expressed for R. S. Thompson. The platform advocated

Suppression of the liquor traffic; woman suffrage; that natural monopolies, such as telegraph and railroads, should be owned by the Government; no monopoly on land; amendment of the Constitution to allow national revenues to be raised by equitable adjustment of taxation on the property and incomes of the people, until which time import duties should

be levied upon luxuries rather than necessities, opposing any appropriations of public moneys for sectarian purposes, and favoring the public schools; election of the President and other officers as far as practicable by the popular vote; proportional minority representation in State and nation. There was also reported a plank on the money question which was voted down and a substitute adopted, declaring that the money of the country should be of a full legal tender, issued directly to the people on ample security in such quantities as the people may demand and to all at uniform rate of interest. To this end the Government should establish real national banks, as it does post offices, wherever the convenience of the people demands. Until such financial system can be established we favor the free and unlimited coinage of silver and gold at the ratio of 16 to 1 as a temporary relief.

The People's party held their convention in Columbus, Aug. 2, and nominated the following ticket: For Governor, Jacob S. Coxey; Lieutenant Governor, John H. Crofton; Treasurer, George W. Harper; Auditor, Charles Bonsall; Attorney-General, William Baker (Thomas Reed substituted on Baker's withdrawal); Supreme Judge, E. D. Stark; Member of the Board of Public Works, William A. Gloyd; Clerk of the Supreme Court, Thomas N. Hickman. The choice of the party for United States Senator was also expressed, the nominee being George A. Groot. The platform affirmed

The principles of the Omaha platform; favored Coxey's noninterest-bond and good-road bills; favored the coinage out of paper of as many dollars or units as will be sufficient to conduct the business of the country on a cash basis, and demanded that such money be a full legal tender; favored the free and unlimited coinage of gold and silver into dollars or units at the present legal rates without any regard whatever as to what other nations may do; demanded the nationalization of all public monopolies; denounced as treason to the American people the issue of interest-bearing bonds at any time, either in war or peace; denounced as treason to the Constitution of the United States the subversion of the rights of trial by jury as practiced by the courts in the case of E. V. Debs; favored a law that will make unlawful any bond, note, mortgage, or other obligation that is made payable in gold only, and declared that all debts, public and private, should be made payable in any lawful money of the United States at the option of the debtor; favored the immediate abolishment of the national banking system; maintained that Congress should pass the *per diem* service act demanded by the Grand Army of the Republic, and Congress should provide for the payment to the Union soldiers of the war of 1861 to 1865 such sum as will make their pay equal to coin with interest thereon. It also favored direct legislation by the initiative and referendum in national, State, and local government, the imperative mandate and proportionate representation; the election of all offices in the State and nation by direct vote of the people; eight hours' work and the union label; State control of the liquor traffic without profit.

The Democratic State Convention was held in Springfield, Aug. 21, when the following nominations were made: For Governor, James E. Campbell; Lieutenant Governor, John B. Peaslee; Auditor, James A. Knott; Treasurer, William B. Shober; Judge of the Supreme Court, William T. Mooney; Attorney-General, George A. Fairbanks; Member of the Board of Public Works, J. W. Cruikshank (Harry B. Keffer substituted on Cruikshank's withdrawal). The nomination for Governor was made by acclamation,



there being no other candidate named. The platform included the following declarations:

When we consider the fact that the Democratic party received from the Republicans in 1892 a bankrupt Treasury, that it inherited from them the vicious currency and tariff laws which had prepared and finally produced the panic of 1893, we insist that it is entitled to the thanks of the people for the courage with which it has attacked and repealed these laws.

We hold to the use of both gold and silver as the standard money of the country and to coin of both gold and silver, without discriminating against either metal or charge of mintage; but the dollar unit of coinage of both metals must be of equal intrinsic and exchangeable value, or be adjusted by international agreement, or by such safeguards of legislation as shall insure the maintenance of the parity of the two metals and the equal power of every dollar at all times in the payment of debts, and we demand that the paper currency shall be kept at par with and redeemable in such coin.

We call the attention of the people to the methods and practices of bossism by which the Republican party in this State has been managed in the last few years.

We denounce the last Legislature as corrupt and unworthy of the confidence of the people.

A minority report substituted for the money plank a resolution calling for free coinage of silver at the ratio of 16 to 1, and that the United States wait for neither England nor any other nation to enter into an international agreement respecting the coinage of silver. The minority resolution was defeated by 270 yeas to 538 nays. An additional resolution was unanimously adopted, after some confusion, without being referred to the committee. It reads:

We view with alarm the armed invasion by Great Britain of one of the republics of this continent under a claim of right for the collection of a petty debt by force in claiming ownership and exercising jurisdiction over American soil belonging to our sister republic of Venezuela. The British Government has contemptuously disregarded and defied the policy of this Government as announced by President Monroe in 1823, and ever since adhered to, which should create the gravest apprehension in the minds of all patriotic Americans and call for the prompt and emphatic demand on the part of our Government that the Monroe Doctrine must and shall be respected and observed.

The Socialist-Labor party also put a partial ticket in the field, as follows: For Governor, William Watkins; Lieutenant Governor, Wm. E. Krumroy; Auditor, Daniel Wallace; Treasurer, George T. Brewster; Member of the Board of Public Works, John Schuch; Clerk of the Supreme Court, Charles Odendahl.

The election was held Nov. 5, and resulted in a sweeping victory for the Republican candidates, Mr. Bushnell for Governor having a plurality of 92,622 and a majority over all of 16,813. The vote on Governor was: Asa S. Bushnell, Republican, 427,141; James E. Campbell, Democrat, 334,519; Jacob S. Coxey, Populist, 52,675; Seth H. Ellis, Prohibitionist, 21,264; William Watkins, Socialist-Labor, 1,867; scattering, 3. The total vote for Governor was 827,469, and the total vote cast in the State 846,996. The other successful candidates, all Republican, with the pluralities of each, were as follow: Lieutenant Governor, Asahel W. Jones, 94,350; Auditor, Walter D. Guilbert, 98,037; Treasurer, Samuel B. Campbell, 98,-

497; Attorney-General, Frank S. Monett, 98,233; Judge of the Supreme Court, Thaddeus A. Minshall, 98,839; Member of the Board of Public Works, Edwin L. Lybarger, 99,258; Clerk of the Supreme Court, Josiah B. Allen, 99,681. Members elected to the seventy-second General Assembly were: Senate, 31 Republicans, 6 Democrats; House, 88 Republicans, 25 Democrats.

**OKLAHOMA**, a Western Territory of the United States, organized in 1890. Population, according to the Auditor's census of Feb. 1, 1894, 212,635. The increase at the close of the fiscal year June 30, 1895, in account with the Interior Department, was estimated to be 62,365; area, 26,815 square miles, or, according to recommendation of the Dawes Commission for statehood, 41,000 square miles.

**Government.**—The Territorial officers for the year were: Governor, William C. Renfrow, Democrat; Secretary, Thomas J. Lowe; Attorney-General, C. A. Galbraith; Treasurer, J. E. Turner; Auditor, E. D. Cameron; Secretary of the Board of School-land Leases, William Blincoe; Inspector General of Militia, James H. Hewitt; Chief Justice, Francis Dale; Associates, Henry W. Scott, Justice Burford, and Justice Bierer; Secretary of the Pharmaceutical Board, Edwin De Barr; Superintendent of the Board of Health, Dr. C. D. Arnold.

**Finances.**—The Auditor's report for the biennial period gives: Cash on hand, \$7,584.95; collections ending Nov. 30, 1894, \$192,727.84; disbursements, \$185,142.89. The general fund warrant indebtedness was \$86,681.34.

**Assessments.**—The Territorial tax was 4¢ mills on \$1 for the following divisions: General revenue, 3 mills; university, normal school, and interest on outstanding bonds, 0.5 of a mill each; and 0.1 of a mill for the use of the Board of Education. General fund warrants, less cash in the treasury, was \$160,095. The levy of 3 mills on \$1 for general fund gave \$117,825. Taxes were small, on account of time extension allowed by the Legislature from April until the first Monday of August. The amount of taxes due in November was computed to be \$59,373.40. The proceeds from the sale of the outstanding 6-per-cent. school bonds, amounting to \$48,000, were used to erect university, normal-school, and Agricultural and Mechanical College buildings.

The taxable property, as equalized for 1895, shows an increase for the year from \$19,947,922 to \$39,275,189, because patents for claims have brought them under legal valuation.

**Legislative Session.**—The Assembly convened on Jan. 8, 1895, in the university building. The Council was Republican, with the exception of 4 Populists and 1 Democrat, with John H. Pitzer as president. The House was composed of 16 Republicans, 7 Populists, and 3 Democrats, with Cassius M. Barnes as chairman. The Legislature adjourned March 15, after passing 119 bills, of which 6 were not signed by the Governor. The bills that became laws included the following:

Authorizing bond issues by counties, cities, and corporations on warrant indebtedness.

Providing for inspection of oils.

Providing for school township debts.

Amending revenue statute to tax cattle in districts.

For government of land leases.  
 Relating to roads.  
 To establish a fiscal agency in New York.  
 For organization of the militia.  
 Relating to debts fraudulently contracted.  
 Legalizing the Perry Board of Education.  
 Providing for renewal of registered deeds destroyed by fire.

Relating to pharmacy.  
 Providing for assessment of railways and their property.

For bridge over South Canadian river.  
 To protect live stock.  
 Creating a soldiers' home at Fort Supply, subject to Government cession.

Legalizing all incorporated cities.  
 To protect stock raisers.  
 Keeley Cure Institute bill.

For protection of fish and game, permitting the killing of game between Nov. 1 and Feb. 1, and forbidding the shipment of game, or its killing, in cities.  
 Giving the right to prefer creditors.

For memorial to Congress for free homes for strip settlers; and one as to time for first payments in reservations.

Relating to settlers driven from Wichita reservation by Indian agent.

Creating an Historical Society at the university.  
 Requiring registry of births of animals.  
 For grading of high schools.

Repealing the usury law, and providing 7 per cent. as contract interest.

Asking Congress to admit Oklahoma to statehood with New Mexico and Arizona.

Amending the alien law.

Regarding perpetual plan in stocks of building and loan associations.

Providing for a board of commissioners for the promotion of legislative uniformity in laws in the various States of the Union.

Giving preference to old soldiers and sailors in the employment of persons in public service.

Joint memorial to Congress for appropriation of \$50,000 for purchase of seeds for the Cherokee strip.

**The Insane.**—The care of the insane was provided for by the third Assembly, enabling the Governor to contract with the incorporated Oklahoma Sanitarium Company owning Highgate College, at Norman, for their care for three years, and for removal from Jacksonville, Ill., of patients there. The sanitarium opened on June 15 and received 34 patients. In November 77 had been received and 10 discharged as cured. The cost for the maintenance of each patient under contract is \$300.

**Educational.**—The university, at Norman, had an enrollment of 186 students and an average attendance of 160. The university receives  $\frac{1}{2}$  mill for its support and an endowment from the United States Government, and its tuition is free. It has received additions to its equipment during the year. The State Historical Society, founded by the Press Association, has a room in the building and owns complete files of papers.

The Normal School, at Edmond, provided a literary, business, and academic training for 101 pupils during the year without fees of any kind. Its support is provided for by the  $\frac{1}{2}$ -mill tax, income from reserved school lands, and appropriations. A colored normal school is being provided for at Edmond. The Board of Regents let the contract in August for the completion of the south wing.

The Agricultural and Mechanical College, at Stillwater, occupied for the first time its new building. The year opened with 104 pupils.

For the first time all the regular college classes were represented and a smaller preparatory class for the winter term was presented. No tuition or incidental fees are required, the expenses being met by an endowment from the United States and one third of the proceeds from Cherokee Outlet Section 13.

The public schools of the Territory had a total attendance during the year of 77,770. The total apportionment was \$54,665.65, derived from school-land leases, about 69 cents *per capita*. Stillwater is erecting a new school building, to cost \$12,000.

**School Lands.**—In December only 10 per cent. of notes for 1895 were delinquent, and the department was receiving about \$3,000 a day from leases. To July 1 \$40,000 had been received. At the beginning of the year 1,950 quarter sections were leased and 4,244 vacant. West of Range 14 a Texan syndicate leased 300,000 acres of 552 sections. The proceeds from these leases amount to \$13,355.12 for public buildings; for colleges, \$13,703.03.

**Railways.**—The total valuation of railway property as assessed for 1895 was \$2,431,092.46. Oklahoma had 4 lines in operation at the close of the year—the Atchison, Topeka and Santa Fé and the Chicago, Rock Island and Pacific, which run through the Territory from north to south; the Choctaw, Oklahoma and Gulf Railway, which runs from El Reno eastward into Arkansas; and the Kiowa, Topeka and Santa Fé, which runs through the northwestern part of the Territory—making an aggregate mileage for the year of 463 miles. The Choctaw, Oklahoma and Gulf Company has built and equipped its road as far as Wistar Junction.

**Banks.**—There are 57 banks in the Territory. Reports from 24 banks give an aggregate capital stock of \$546,000, with \$87,000 as surplus and undivided profits; deposits, \$1,302,000; loans and discounts, \$826,000; securities, \$190,000; cash and sight exchanges, \$465,000.

**Indians.**—Only 1 Indian reservation, that of the Kickapoo tribe, was opened to settlement in May. One hundred thousand acres of the Kickapoo land were selected as indemnity school land for loss of school land in the Osage reservation, leaving a small tract over 2 townships for homestead entry. Nearly half of the school land is leased and new leases are being made rapidly.

In the Osage treaty the word "Osage" was omitted, and the tribe claims that the \$700,000 trust fund was intended for their own civilization and not for tribes in general.

**Mining.**—Although Congress has declared the soil of Oklahoma not minerally productive, rich specimens of gold ore were found in the Wichita mountains in 1895, and also near Woodward in April and October. Other indications of valuable deposits have also been discovered. Coal and petroleum were found at Stillwater, anthracite east of Payne County, limestone in Perkins, gypsum in many directions, and sandstone and brick clay in various localities.

**Agriculture.**—The cotton crop for the year was expected to bring \$115,000. Early in the season 2,318 bales had been marketed at Guthrie.

**Climate.**—The average rainfall for August was 5.07 inches, 1.90 daily, above the normal; greatest monthly rainfall, 8.30 inches at Keokuk



Falls; least, 2·10 at Fort Sill; greatest daily, 3·85 inches at Alva.

**Statehood.**—A mass meeting calling a convention to memorialize Congress regarding the admission of Oklahoma to statehood was held in Shawnee in December. The Assembly passed a bill for the same purpose, and several bills were introduced in Congress for that object during the year.

**OLEOMARGARINE.** The act of Congress of Aug. 2, 1886, entitled "An Act defining butter, also imposing a tax upon and regulating the manufacture, sale, importation, and exportation of oleomargarine," went into effect Oct. 31, 1886. It defined "butter" as the food product usually known as butter, made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter; and under the term "oleomargarine" it designated "All substances heretofore known as oleomargarine, oleo, oleomargarine oil, butterine, lardine, suine, and neutral; all mixtures and compounds of oleomargarine, oleo, oleomargarine oil, butterine, lardine, suine, and neutral; all lard extracts and tallow extracts; and all mixtures and compounds of tallow, beef fat, suet, lard, lard oil, vegetable oil, annatto, and other coloring matter, intestinal fat, and offal fat made in imitation or semblance of butter, or, when so made, calculated or intended to be sold as butter or for butter." An internal-revenue tax of 2 cents a pound is imposed on the article, to be paid by the manufacturer. Manufacturers must also pay a special tax, popularly called a license, of \$600 a year; wholesale dealers, \$480; and retail dealers, \$48. Manufacturers are required to give bonds, file inventories, keep books, and make monthly returns to the Commissioner of Internal Revenue, showing the quantity of oleomargarine produced and sold, and to whom sold, and the materials used in the manufacture. Wholesale dealers are also required to keep books and make returns. Oleomargarine may be removed from the manufactory for export to a foreign country without payment of the tax. Imported oleomargarine is required to pay an internal-revenue tax of 15 cents a pound in addition to import duties. This tax is prohibitory, and none is imported.

The difference between fresh, genuine, un-melted butter and oleomargarine, which is always made in whole or in part of melted fats, can be detected by a microscope with the aid of polarized light, and with or without the use of a selenite plate. Microscopes are furnished to internal-revenue officers for use in determining whether articles sold as butter should be taxed as oleomargarine. A chemical analysis affords more conclusive proof than a microscopic test, and is resorted to in case of doubt.

Oleomargarine must be packed by manufacturers in packages containing not less than 10 pounds each, and marked, stamped, and branded as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may prescribe. Sales made by manufacturers and wholesale dealers must be in original stamped packages. The payment of the taxes imposed by the United States law does not authorize a person to engage in the manufacture or sale in disregard of State laws. Some States have passed

laws prohibiting its manufacture and sale, which have been held by the courts to be constitutional as a valid exercise of the police power.

The number of factories in the United States producing oleomargarine in 1895 was 21, and there were 243 wholesale dealers and 5,972 retail dealers. In 1894 there were 23 factories, 279 wholesale dealers, and 7,554 retail dealers.

Of oleomargarine 56,958,105 pounds were manufactured during the year ended June 30, 1895, a decrease from the preceding year of 12,664,141 pounds. The following figures show last year's production by States: Illinois, 31,903,871 pounds; Rhode Island, 9,029,269; Kansas, 7,189,335; Ohio, 3,372,491; Nebraska, 3,009,830; Missouri, 1,013,544; Indiana, 653,263; Pennsylvania, 563,113; California, 223,389.

For export, 3,337,486 pounds were withdrawn from the factories.

The following figures show the production in this country for each fiscal year since the law went into effect: On hand Nov. 1, 1886, 181,090 pounds. During the fiscal year ended June 30: In 1887 (from Nov. 1, 1886), 21,513,537 pounds; in 1888, 34,325,527; in 1889, 35,664,026; in 1890, 32,324,032; in 1891, 44,392,409; in 1892, 48,364,155; in 1893, 67,224,298; in 1894, 69,622,246; in 1895, 56,958,105; total, 410,569,425 pounds.

The following table shows the internal-revenue receipts from oleomargarine sources for the two years ended June 30, 1894, and 1895:

SOURCES.	1894.	1895.
Tax on oleomargarine.....	\$1,328,558 00	\$1,065,293 40
Manufacturers of oleomargarine (special tax).....	11,250 00	8,950 00
Retail dealers in oleomargarine (special tax).....	276,277 90	236,183 78
Wholesale dealers in oleomargarine (special tax).....	107,394 00	98,784 00
Total.....	\$1,723,479 90	\$1,409,211 18

The following figures show the oleomargarine receipts from all sources for each fiscal year since the law went into effect: Year ended June 3, 1887 (from Nov. 1, 1886), \$723,948.04; in 1888, \$864,139.88; in 1889, \$894,247.91; in 1890, \$786,291.72; in 1891, \$1,077,924.14; in 1892, \$1,266,326; in 1893, \$1,670,643.50; in 1894, \$1,723,479.90; in 1895, \$1,409,211.18; total, \$10,416,212.27.

**ONTARIO,** a province of the Dominion of Canada.

**Government.**—There was no change in the Government during the year, and Sir Oliver Mowat's Cabinet, over the varied personalities of which he has presided since 1872, consisted of himself as Attorney-General; Hon. A. S. Hardy, Commissioner of Crown Lands; Hon. J. M. Gibson, Provincial Secretary; Hon. G. W. Ross, Minister of Education; Hon. R. Harcourt, Provincial Treasurer; Hon. J. Dryden, Minister of Agriculture; Hon. W. Harty, Minister of Public Works; Hon. E. H. Bronson, minister without portfolio.

**Finances.**—Mr. Harcourt delivered his budget speech on Feb. 28. He pointed out that the actual receipts during the year ending Dec. 31 were \$3,453,162, or \$306,290 more than had been estimated. From the Crown Lands Department \$1,057,532 had been received, mainly from the sale or license of timber limits. The expendi-

ture was \$3,839,338, compared with \$3,907,145 in 1893, \$4,068,257 in 1892, and \$4,158,459 in 1891. Civil government, legislation, education, agriculture, justice, hospitals, charities, and colonization roads had all cost more than in the preceding year; but \$116,000 less had been expended on public buildings. He referred to the expenditure within a few years of \$1,356,997 for new asylums, and to the fact that in 1894 there were 4,441 inmates of the 7 Ontario asylums. Public institutions of this and similar kinds had cost for maintenance during the year \$756,984. Dealing with official salaries, he made an interesting comparison with those paid in New York State, which showed that the latter were more than double the amount of the remuneration paid by Ontario for the same work.

The chief items of the receipts for the year were: The Dominion subsidy and special grant, \$1,196,872; the interest on capital held and debts due by the Dominion to Ontario, \$310,020; from woods and forests, \$980,497; liquor licenses, \$277,330; law stamps, \$84,097; brewers' licenses, \$54,920; drainage debentures, \$793,000. The principal heads of expenditure were as follow: Civil government, \$240,474; legislation, \$142,362; administration of justice, \$418,746; education, \$684,559; public institutions, \$756,983; agriculture, \$181,064; hospitals and charities, \$182,692; colonization roads, \$116,879; public buildings, repairs, etc., \$71,548; charges on Crown lands, \$111,158; aid to railways, \$147,516; asylums, etc., \$341,062.

Mr. Harcourt then dealt with the assets and liabilities of the province. Deducting liabilities presently payable, and excluding money borrowed upon annuities and payable in future yearly installments, and payments pledged to railways, which together amount to several millions, he claimed a surplus of assets amounting to \$5,269,840. The estimated revenue for 1896 was \$3,149,372; the estimated expenditure, \$3,401,905.

**Legislation.**—The first session of the eighth Legislature was opened in Toronto, Feb. 21, 1895, by Lieut.-Gov. George A. Kirkpatrick. The following are the more important paragraphs in his speech from the throne:

Increased interest has been taken in improved methods of farming and in the reports and publications of the Department of Agriculture. Various agricultural associations and organizations have been making increased demands for instructors. The special dairy work in connection with the agricultural college at Guelph has been prosecuted with very satisfactory results, and last year proved the most successful in the history of the college.

From time to time public attention has been directed to our northern districts as suitable for settlement by an agricultural population. At the present time considerable interest is being manifested in this direction, and it is proposed to establish, with your approval, at a moderate expense, a pioneer dairy farm to attract further attention to these new districts, and also to prove their adaptability to agriculture.

During the past year the Rainy lake region has come into notice as a gold field. Many explorers have been attracted to it, and promising locations have been taken up and partially developed.

The Supreme Court of Canada having held that the province has no power to pass a prohibitory liquor law, my Government is taking the necessary proceedings for an appeal to her Majesty's Privy Council upon this question.

Since the last session the main building of the Brockville asylum has been completed, and patients were admitted before the end of the year.

The total expenditures of the province were kept well within the appropriations, and the actual receipts were considerably in excess of the estimate.

Mr. W. D. Balfour was elected Speaker, and after a session of considerable interest the Assembly was prorogued. The principal measures passed were as follow:

Several acts incorporating electric and steam railway companies.

Respecting the agreement between the city of Stratford and the Grand Trunk Railway.

To incorporate the Algoma Dry Dock Company,  
To incorporate the Sault Ste. Marie Pulp and Paper Company.

To authorize the town of Carleton Place to issue certain debentures.

To incorporate the town of Sturgeon Falls.

To incorporate the city of Chatham.

To revive the act incorporating the Sarnia and Lambton Southern Railway Company.

Respecting the verdict of jurors in civil cases in the high courts and county courts.

Respecting benevolent, provident, and other societies.

For the further protection of children.

To amend the municipal light and heat act.

To amend the act respecting line fences.

To amend the cemetery company's act.

Respecting the election laws.

Relating to leases, sales, and mortgages of settled estates.

Respecting dower in mortgaged and other property.

To make better provision for the widows of intestates in certain cases.

For diminishing appeals and otherwise improving the procedure of the courts.

Respecting municipal arbitrations.

To consolidate and amend the agriculture and arts acts.

For the prevention of fraud in the sale of fruit.

To amend the act to provide for the admission of women to the study and practice of the law.

To make further provision respecting assignments for the benefit of creditors.

To make further provision for the public health.

For the relief of cheese and butter manufacturing associations.

To amend the Ontario game protection act.

To amend the insurance law.

Respecting the medical tariff.

**Political.**—Although the provincial elections of 1894 had given Sir Oliver Mowat's government a majority, the elements were so much mixed that it was impossible to say how small that majority might be until the House had met. The Patrons or farmer's party numbered at least 14, the Conservatives 24, and the Protestant Protective Association or extreme Protestants 3, against 51 straight Liberals. It was soon found that more of the Patrons voted with the Liberals, the result being a majority varying from 37 to 18.

One of the first questions to come up was the expense of Government House and its maintenance. After a long discussion, in which Sir Oliver Mowat plainly showed his indisposition to take any radical steps, it was decided, on a nonparty vote, that "a select committee of this House be appointed to consider all questions relating to Government House and its future maintenance by the province." The decision could not affect the position of the Lieutenant



Governor, except to make it necessary for him to live upon his Dominion salary of \$10,000 instead of having expenses up to \$15,000 a year allowed by the province in addition.

One of the questions during the election had been the opposition claim that provincial officials were so many partisan machines; that their fees were too large; and that some other method of appointment or selection should be found. On March 20 it was moved that

In the opinion of this House, the present mode of appointing registrars of deeds and other county officials is unsatisfactory and should be changed; and that the appointment of all the said officials whose salary or remuneration is provided in whole or mainly by the localities for which they are appointed should not be vested in the executive of the province, but in the municipalities.

The Premier strongly opposed the motion and any approach toward elective officials, in this agreeing with his Conservative opponents in Dominion matters, and the motion was lost by 56 to 23.

During the session Sir Oliver introduced and carried an important law-reform bill. It changed the composition of the High Court of Ontario, and provided that in cases where the amount at issue is not greater than \$1,000, or which did not come under a special and specified class, an appeal may be taken directly to the Divisional Court, from which no appeal may be taken to the Court of Appeal. In cases that are over \$1,000 and not included in the specified exceptions appeal is optional to either the Divisional High Court or the Court of Appeal. If the appellant choose the former he has no option of a further appeal to the latter. The intention was to transfer some of the business now going to the Court of Appeal to the High Court.

**Fees Commission.**—During the session the Fees Commission reported. The result of the investigations, which fill a bulky volume, is a strong condemnation of elective officials. The conclusions are summarized as follow:

No change should be made in appointing the officers by handing over the choice to local authorities. The fee system should be continued as to all administrative offices—registrars of deeds, clerks and registrars of courts, sheriffs, and bailiffs. Salaries should be paid to all judicial or quasi-judicial officers. The expenses connected with clerical and other assistance in the offices should be systematized so that uniformity and not diversity may characterize the service. A limit should be placed upon the receipts of fee paid officers, to be fixed by the Legislature.

**Immigration.**—The report of the Provincial Department shows that in 1894 Ontario received 5,968 immigrants, a decrease of 603 from the preceding year. The report refers to their occupations, and regrets that a comparatively small number of farm laborers come to the country, the demand always exceeding the supply. It adds that the prevailing rate of wages was slightly lower than in 1893 and the expenditure on immigration account was \$8,140, against \$6,974 in 1893.

**Agriculture.**—This is the chief industry and occupation of Ontario. In 1894 there were 8,227,153 acres devoted to staple field crops, 2,703,241 acres to pasture, 198,968 to orchard and garden; a total of 11,129,362 acres, in comparison with 7,740,073 in 1883. The area, prod-

uct, and value of the chief crops in 1894 were as follow:

CROP.	Acres.	Bushels.	Value.
Fall wheat .....	778,992	16,512,106	\$9,081,658
Spring wheat.....	230,016	3,267,854	1,869,159
Barley.....	456,261	10,980,404	4,447,064
Oats.....	2,342,766	70,172,516	21,613,188
Rye.....	90,144	1,388,606	612,880
Peas.....	785,007	14,022,888	7,516,268
Buckwheat.....	145,268	2,534,335	993,459
Beans.....	59,281	827,514	918,575
Potatoes.....	167,253	17,163,130	6,075,748
Mangel-wurzels.....	27,670	11,582,127	922,570
Carrots.....	11,186	3,716,140	464,518
Turnips.....	147,657	61,694,487	6,169,449
Hay and clover.....	2,576,943	3,675,200	27,028,512
Corn.....	878,709	17,325,117	6,347,897

The horses in the province on July 1, 1894, numbered 674,777, valued at \$46,245,614, compared with 688,814 in 1892, valued at \$55,812,920. The number of cattle was not greatly changed in the two years, being in 1894 2,099,301 head, valued at \$47,577,587. There were also 2,015,805 sheep, worth \$8,606,671; 1,142,133 hogs, worth \$6,909,262; and 7,552,662 poultry, worth \$2,208,518. The value of the live stock sold or slaughtered during the year ending June 30, 1894, is placed by the Bureau of Industries at \$31,935,589. The wool clip was 6,235,036 pounds, valued at \$1,053,721. There were 1,011 cheese factories in operation in 1894, an increase of 114 over 1893. The total output was 11,117,828 pounds greater than in 1893, and the money received was \$1,102,538 in excess. The total amount paid to patrons was \$7,931,022, and the gross value of the cheese (97,284,547 pounds) was \$9,441,247. During the year there was a decline in the total value of farm properties in the province of \$15,965,563.

**Prohibition.**—On Jan. 15, 1895, the Supreme Court of Canada gave judgment in a case referred to it by the Governor General in Council, and involving the question whether the provincial legislatures have the power to prohibit the liquor traffic. Ontario had lately declared in favor of prohibition by a large popular vote. The Supreme Court answered the propositions presented to it as follow:

1. Has a provincial legislature power to prohibit the sale within the province of intoxicating liquors? No.
2. Has the legislature such jurisdiction regarding such portions of the province as to which the Canada temperance act is not in operation? No.
3. Has the provincial legislature jurisdiction to prohibit the manufacture of such liquors within the province? No.
4. Has the legislature jurisdiction to prohibit the importation of such liquors into the province? No.
5. If the legislature has not the jurisdiction to prohibit the sales of such liquors, irrespective of quantities, have they the power to prohibit the retail sale? No—the Chief Justice and Judge Fournier dissenting.
6. If the local legislature has a limited jurisdiction only as regards the prohibition of sale, has it jurisdiction to prohibit sales subject to the limits provided by the Scott act? No.
7. Has the Ontario Legislature jurisdiction to enact the local-option act? No—the Chief Justice and Judge Fournier dissenting.

An appeal was taken to the Judicial Committee of the Imperial Privy Council, and this judgment in the main was upheld. The royal commission appointed by the Dominion Gov-

ernment to inquire into the question has reported strongly against prohibition, the House of Commons having previously voted in favor of its being dealt with by the provinces.

**Minerals.**—A statement issued by the Bureau of Mines gives the figures of the mining industry during 1894, which seems, like everything else, to have been depressed. It shows the number of patents issued as 40, in comparison with 63 in 1893; the leases 66, against 122; the revenue from leases, sales, and rentals as \$17,942, against \$26,167 in the previous years. The total value of the mineral product during the year, estimated at the point of production, was \$6,088,758, or \$31,995 less than in 1893. The people engaged in the industry numbered 6,075, and the wages paid were \$1,840,289. Compared with the previous year, the people employed were reduced by 1,100, and the wages paid by \$100,000.

The nickel and copper industries made good progress, the production of the former being equal to 2,570 tons, and of the latter 2,748 tons of metal, compared with 1,642 and 1,431 tons, respectively, in 1893. The production of gold was \$32,960, or about the same as in 1893.

**Statistics of Crime.**—There was an increase of 831 committals over 1893, half of which arose from petty larceny, trespass, and burglary. The average cost per prisoner was a little less than 14 cents a day. The inspector, in his annual report, dwells upon the decrease in the number of professional tramps, and the success of strict discipline and compulsory work in jails in dealing with this class.

**Loan Companies.**—The report for 1894 shows 89 companies doing business in lending money on mortgages of real estate. They had a subscribed capital of \$94,047,711, with liabilities to stockholders of \$50,582,921; deposits from the public of \$18,352,607; debentures payable in Canada, \$9,789,799, and payable elsewhere, \$51,014,502. Their loans on real estate aggregated \$115,000,000.

**Education.**—The school system is under the control of the Minister of Education, and the schools are undenominational, although the Roman Catholics are allowed separate schools under the terms of confederation. Education between the ages of seven and thirteen is compulsory for not less than one hundred days in the year, but the law is not very rigorously enforced. The figures of the Education Department for the year 1894 are as follow:

ITEMS.	Public.	Separate.	High.
Number of schools.....	5,649	323	129
Pupils.....	443,441	39,762	23,055
Teachers.....	8,110	714	554
Receipts.....	\$4,550,115	\$392,392	\$740,651
Expenditure.....	3,910,824	337,307	658,532
Average salaries (male).....	421	351	924
Average salaries (female).....	300	201	

**Miscellaneous.**—The chattel mortgages in the province increased during the past five years by 5,545. There were 11,687 in number, valued at \$3,446,884, charged against farmers in 1894, and 10,072, amounting to \$7,773,321, against other classes. The rates of wages to farm laborers averaged \$156 (with board) and \$247 (without board), against \$160 and \$255, respectively, in 1893; domestic servants, \$6.23 a month,

against \$6.47 in 1893 and \$6.21 in 1892. The tonnage of the vessels engaged in the coasting or lake trade of Ontario was 11,299,718 in 1894, compared with 9,832,803 tons in the preceding year.

**OREGON**, a Pacific coast State, admitted to the Union Feb. 14, 1859; area, 96,030 square miles. The population was 13,294 in 1850; 52,465 in 1860; 90,923 in 1870; 174,768 in 1880; 313,767 in 1890. By the State census of 1895 it was 362,762. Capital, Salem.

**Government.**—The following were the State officers during the year: Governor, William P. Lord; Secretary of State, Harrison R. Kineaid; Treasurer, Philip Metschan; Attorney-General, C. M. Idleman; Adjutant General, R. W. Mitchell, who resigned and was succeeded in April by B. B. Tuttle; Superintendent of Public Instruction, George M. Irwin—all Republicans; Fish and Game Protector, H. D. McGuire; Railroad Commissioners, H. B. Compson, I. A. Macrum, James B. Eddy; Pilot Commissioners, John F. Brown, B. F. Packard, John Fox; Chief Justice of the Supreme Court, Robert S. Bean; Associate Justices, Frank A. Moore, Charles E. Wolverton—all Republicans.

**State Census.**—The census taken in 1895 gives the following results for the counties:

COUNTY.	Males.	Females.	Total.	Voters.
Baker.....	3,390	2,671	6,061	.....
Benton.....	3,315	2,977	6,292	1,809
Clackamas.....	11,794	9,459	21,253	5,501
Clatsop.....	.....	.....	11,108	3,859
Columbia.....	3,657	2,283	5,890	1,759
Coos.....	4,336	3,654	8,490	2,581
Crook.....	1,907	1,305	3,212	1,203
Curry.....	.....	.....	1,916	667
Douglas.....	7,988	6,571	14,559	.....
Gilliam.....	1,722	1,254	3,016	965
Grant.....	2,649	1,639	4,388	1,460
Harney.....	1,526	99	2,465	970
Jackson.....	7,098	5,919	13,017	3,877
Josephine.....	3,451	2,550	6,001	1,855
Klamath.....	.....	.....	2,318	763
Lake.....	1,316	851	2,197	784
Lane.....	9,402	8,108	17,510	4,999
Lincoln.....	1,777	1,527	3,304	1,050
Linn.....	9,456	8,550	18,006	5,216
Malheur.....	1,533	1,100	2,633	952
Marion.....	16,796	13,245	30,041	7,743
Morrow.....	1,855	1,522	3,407	1,065
Multnomah.....	55,326	37,624	92,950	31,465
Polk.....	4,886	4,307	9,193	2,440
Sherman.....	.....	.....	2,490	921
Tillamook.....	2,132	1,672	3,804	1,118
Union.....	6,963	5,598	12,561	.....
Wallowa.....	6,097	4,768	10,865	3,326
Wasco.....	2,190	1,791	3,981	1,174
Washington.....	5,887	4,562	10,449	3,259
Yamhill.....	8,250	7,112	15,362	4,044
.....	7,120	6,948	14,068	4,083
Total for the State...	.....	.....	362,762	.....

Eleven counties show a decrease since 1890; of these, 10 are in eastern Oregon—east of the Cascade mountains. Coos, the only one in western Oregon that has not increased, shows a loss of 384. The greatest increase is in Multnomah County, amounting to 18,066. Clackamas County shows the largest percentage of increase, having advanced from 15,233 to 21,253.

The population of Portland is 81,342; that of Salem, 10,261.

Other statistics given by the census were: Whole number of acres cultivated, 1,840,911; bushels of wheat, 12,684,412; of corn, 325,714; of oats, 6,645,812; of barley and rye, 1,425,719;



of potatoes, 2,777,596; of plums, pears, and prunes, 295,431; number of sheep, 2,388,011; of hogs, 189,304; of horses, 193,373; of cattle, 406,437; number of pounds of wool, 12,359,753; of hops, 15,626,555; of butter and cheese, 5,626,457; number of tons of hay, 746,613; number of feet of lumber cut, 282,182,318; number of bushels of apples, 1,045,919.

**Valuations.**—The returns from the State Board of Equalization show a discrepancy from the census returns in many particulars. The difference in the numbers of domestic animals is, perhaps, accounted for by the fact that animals under a given age are not assessed for taxation. The taxable wealth of the State is summarized as follows: Railroad land, \$1,587,518; wagon-road land, \$702,447; unimproved land, \$19,913,147; cultivated land, \$34,046,622; railroads, \$5,125,182; telephone and telegraph, \$152,814; horses and mules, \$2,898,237; cattle, \$3,620,924; sheep and goats, \$1,724,685; swine, \$274,896; town and city lots, \$38,856,398; improvements on lots, \$16,338,741; improvements on deeded lands, \$6,078,178; money, \$1,551,809; notes and accounts, \$9,057,432; shares of stock, \$1,818,072; improvements on deeded lands, \$891,483; household furniture, etc., \$3,743,584; machinery and equipments, \$1,522,565; merchandise and implements, \$8,894,752; rolling stock of railroads, \$628,174; total value of all property as returned by counties, \$158,819,730. The gross amount, as equalized, is \$153,967,177; total exemptions, \$8,621,751; net taxable, upon which the State levy will be made, \$144,445,426. The rate of taxation for 1896 is 4.8 mills for the general fund.

**Education.**—Reports for the school year ending March 4, 1895, give the following figures: There were 64,567 male and 62,398 female persons between the ages of four and twenty years resident in the State; resident pupils enrolled, 83,356; average daily attendance, 56,046; teachers employed, 3,274; schoolhouses built during year, 75; schoolhouses in the State, 1,844; value of schoolhouses and grounds, \$2,453,992; of furniture and apparatus, \$336,559. The average per cent. of the taxes voted and levied for school purposes was 5.31 mills.

The State Normal School, at Drain, sent out one of its largest classes in June, consisting of 1 post-graduate, 4 commercial, and 35 normal students.

The Agricultural College, at Cornwallis, graduated in June its largest class, numbering 51, of whom 26 were girls. At the beginning of the new school year, in September, 255 students were enrolled.

The medical department of Willamette University has been moved from Portland to Salem. The medical faculty all resigned the same evening that the trustees decided upon the removal, but before the decision was learned.

**State Institutions.**—The appropriation to the Soldiers' Home by the Legislature of 1895 was \$24,000, and for deficiency \$10,981. The home was opened May 24, 1894, with 7 inmates. A joint committee of the Legislature was appointed to investigate the affairs of the institution, and reported finding bad business management, extravagance, and dishonesty on the part of the managers.

An appropriation of \$39,300 was made for the deaf-mute school, and one of \$20,200 for the blind school. The deaf-mute school also received for deficiency \$7,596, and the blind school \$1,129.

For new buildings at the Reform School \$5,176 was appropriated; for general expenses, \$36,000; for improvements and salaries, \$26,300; for waterworks and lighting, \$10,700.

The appropriation for the Penitentiary was \$131,250. The number of convicts in March was 359, of whom 2 were women; in October the number was 326. The monthly *per capita* expense was about \$11. There is work enough only to keep the convicts busy about half the time. The stove foundry is run three days of each week, employing 165 men. There are 32 trustees, who are allowed to work on the farm.

In July the number of patients in the Insane Asylum at Salem was reported as 1,026; the number of officers and employees was 117. The expense *per capita* was given as \$8.87 for June, but after the asylum management changed hands, Aug. 1, it was found that the *per capita* expense had been really greater. About 1,200 acres are under the management of the asylum.

The Legislature of 1893 appropriated \$165,000 to buy land and build a branch asylum in the eastern part of the State. A permanent injunction was sought to restrain the Board of Building Commissioners—consisting of the Governor, the Secretary of State, and the Treasurer—from proceeding, on the ground that the Constitution declares that all State institutions shall be at the capital. A permanent injunction was granted, an appeal was taken, and the Supreme Court reversed the decision, remanding the case to the lower court with leave to amend. The next decision made the injunction perpetual, and on appeal again to the Supreme Court the injunction was dissolved and the complaint dismissed, on the ground that the Governor could not be enjoined while in the discharge of his official duties. The constitutional question was left undecided.

**Industries and Products.**—The report of the Game and Fish Protector shows the number of cases of salmon packed in tins on the Oregon side of Columbia river to have been 433,178, and the value \$2,282,408.65. The value of apparatus used was \$694,293, the number of factories 25, and their value \$678,500, while of allied factories, such as can and box and fertilizer plants, there were 5, of the value of \$191,000. The number of men employed in the fisheries, factories, etc., was 5,349, and the wages, \$1,236,246.

The product of gold in 1894 was \$1,690,950, and that of silver \$13,557.

Oregon is to have the only pine-needle factory in America. It will be at Grant's Pass. The foliage of the Norman pine, which abounds in the vicinity, will be converted into soap, extracts, and oils.

**Railroads.**—The report for the year ending June 30, 1895, shows an increase of shipments of fruits, live stock, and hay over those of 1894 of nearly 10,000 tons by the Southern Pacific. Its gross earnings were \$1,709,526, and its operating expenses \$1,317,060.

The statistics of the Oregon Railway and Navigation Company show an increase in the

transportation of grain and its products for 1895 of 200,000 tons over 1894. The proportion of expenses to earnings in 1894 was 84 per cent., while in 1895 it was 75½ per cent. The gross earnings were \$2,819,406.

The expense of maintaining the Northern Pacific in Oregon was not met by its earnings, which came short nearly \$75,000.

The Washington and Columbia showed a percentage of expenses to earnings of only 39 per cent. The business of the company is almost entirely transportation of grain and live stock. Its gross earnings were \$61,588, and its operating expenses \$24,043.

On all the roads there is a decided falling off shown in the passenger traffic.

**Industrial Exposition.**—The Oregon Industrial Exposition opened at Portland, Oct. 5, and closed Nov. 5. It was a fine exhibit of the products and resources of the State, and was thronged by visitors. A guarantee fund was subscribed, as it was not expected that the low price of admission would yield income enough to defray expenses; but the secretary's report shows that this fund was not drawn upon. Single admission tickets were sold at 25 cents, and children were admitted for 5 and 10 cents. The receipts were \$20,460.23. The estimated total attendance was 97,355. The balance remaining was \$2,226.66.

**Public Lands.**—The total sales of lands through the office of the clerk of the Oregon State Board of School Land Commissioners during 1895 amounted to 71,923.96 acres, and the amount paid was \$92,956.93.

The Siletz Indian reservation was opened to settlement July 25. It has an average width approximately of 12 miles, and runs up and down the coast about 24 miles.

**Assessment of Deposits.**—A law passed in 1870, providing for the assessment of bank deposits, which has been largely inoperative because banks have refused to obey its provisions, was brought up in a case of indictment of a bank officer for refusing to furnish an assessor with a list of depositors. The law was declared unconstitutional, for the reasons, among others, that it "attempts to require of a particular class of citizens the performance of a special duty not required of any other citizen—i. e., that of assisting the assessor of this county to discover a certain class of personal property of the taxpayers of this county to enable the assessor to assess the same," and that it is in direct conflict with the act of Congress establishing the national banking system.

**Legislative Session.**—The eighteenth biennial session of the Legislature began Jan. 14, and ended Feb. 23. On joint ballot the Republicans had 72 votes, the Populists 10, and the Democrats 8. Joseph Simon was elected President of the Senate, and C. B. Moores Speaker of the House.

A United States Senator was to be elected. At a caucus of the Republican members, held Jan. 16, Mr. Dolph, the present Senator, was made the party candidate. But the minority afterward refused to be bound by the action of the caucus, and put forward Judge F. A. Moore as their candidate. W. D. Hare was nominated by the Populists, and A. S. Bennett by the

Democrats. Mr. Dolph did not receive the number of votes necessary to his election, and a deadlock ensued, which lasted almost till the close of the session. George W. McBride was then named as a candidate upon whom the Republicans might unite, and he was elected, Feb. 23, on the sixtieth ballot.

The ballot law was amended so as to provide that a candidate's name may appear in only one place on the ballot.

County courts are authorized to form irrigation districts upon the vote of electors in the territory proposed to be included.

County courts are also empowered to form diking districts, similar to road districts. Clatsop is the only county liable to need this provision.

A State Board of Medical Examiners for granting licenses to practice was created. It is to be appointed by the Governor, and to consist of one homœopathic, one eclectic, and three allopathic physicians. A pharmacy board also was created.

A law was made extending to one year the time within which a judgment debtor may redeem property after it has been sold under execution, and the sale confirmed. The question came before the courts during the year, whether this change would apply to mortgages given while the old law was in operation, the claim being made that this would be contrary to the United States Constitution, which ordains that no State shall pass any law impairing the obligation of contracts. The court held that the law was valid, the purchaser being no party to the contract made by the mortgage; if he happens to be the same person as the mortgagee, that is merely accidental, his relation as mortgagee ceasing when he assumes that of purchaser; and that the sale is the remedy or mode provided by law for the enforcement of the contract, and not a part of the contract.

The only bill for revenue passed at the session was one for taxing insurance companies, which, it was estimated, would bring \$40,000 a year to the State.

An act was passed providing for the assignment and satisfaction of mortgages, one prescribing the method of discharging attachments, and one providing that attachments may be sworn out where mortgages or other pledges have been given, but have been rendered nugatory by act of defendant.

An appropriation of \$9,000 was made to the Board of Horticulture for use in exterminating fruit pests.

The law for the protection of fish and game was changed in some respects. It is a sportsman's measure only, and makes no mention of the salmon industry.

Among other acts of the session were the following:

Authorizing the Domestic Animal Commission to apply the "tuberculin" test to cattle in supposed cases of tuberculosis.

Requiring building and loan associations to deposit securities with the Secretary of State or trust companies and to make statements of their affairs to the Secretary of State.

Limiting liabilities of stockholders in corporations to amount of their unpaid stock.

Punishing for killing song birds or molesting their eggs or nests by \$5 to \$100 fine.



Amending the act creating the State Board of Horticulture and appropriating \$9,000 for the ensuing two years.

Creating liens on horses for shoeing.

Prohibiting minors from going into places of evil resort and fining corporations \$100 for sending them there.

Authorizing the Governor to lease by contract convict labor at not less than 35 cents a day.

Fixing the age of consent at sixteen years.

Four constitutional amendments were voted, to be submitted to the people at the next election, among them one abrogating that provision which guarantees foreigners in the State equal property rights with citizens, one adding an article prescribing the means of procuring right of way for water pipes, reservoirs, etc., and one enabling the Legislature to increase the number of justices of the Supreme Court.

## P

**PARAGUAY**, a republic in South America. The legislative power is vested in a Congress consisting of a Senate of 13 members and a Chamber having double that number. The President, for the term of four years ending in 1898, is Gen. Juan B. Egusquiza.

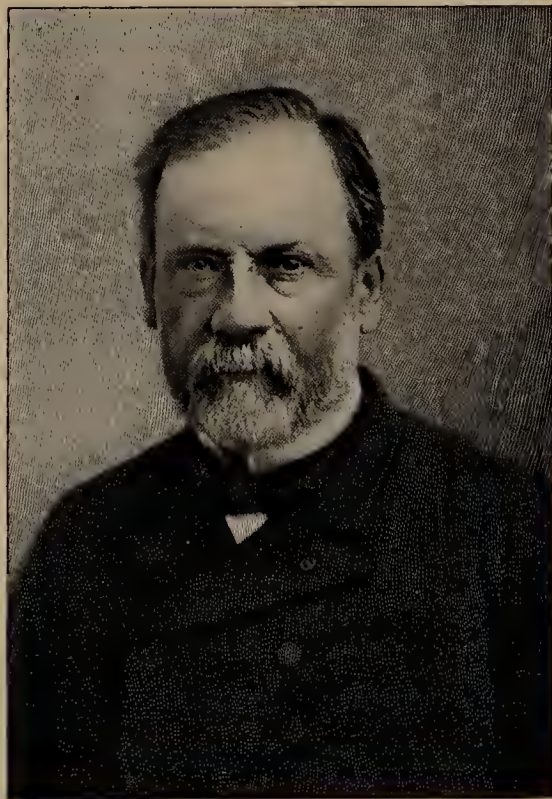
**Finances.**—The treasury receipts for 1894 were 4,547,135 pesos, of which 245,208 pesos came from sales and leases of land, 3,813,619 from customs, and 488,308 from other taxes. The expenses were 5,007,936 pesos, of which 1,542,096 pesos were used in general expenses of the Government, 94,772 pesos in payment of debt, and 3,371,068 pesos for extraordinary purposes. In respect to its bonds held in Europe, on which no interest has been paid since 1891, the Government agreed in August, 1895, to an arrangement whereby it will pay 1 per cent. for the first three years and  $\frac{1}{2}$  of 1 per cent. more every succeeding three years till 3 per cent. is reached, and will begin redemption in 1900.

**Colonization.**—At the end of 1893 there was one German colony numbering 941 persons and another having 273, an Italian colony of 230, the Colonia Nacional having 1,015, another settlement with 814, and the socialistic Australian community, called Nueva Australia, which then numbered 420 persons. The Government conceded the Australians, who had left their own country in disgust after the panic of 1893, a rich tract of 900 square miles on the Tibiquari river, on the condition that 1,200 immigrant families should be settled there within six years. Colonists presented themselves in numbers, each subscribing \$300. In this way \$150,000 was raised to start the colony. Those who first arrived, in September, 1893, were disappointed at their wild surroundings. All were to receive equal pay, and there was to be no authority. A division arose over the question whether intoxicants should be allowed, and when the chief manager and the total-abstainers insisted on having their way 85 persons left the colony. They were on the point of returning to Australia when the Paraguayan Government granted to them another tract, in the department of Gonzalez, where they have since prospered. Another schism occurred in the original colony, in consequence of which the director and about 50 of the sturdiest colonists went to settle in another territory. The bickerings continued, and in September, 1894, a band of 25 left and went to Buenos Ayres. Those who were left then reorganized the community, dropping most of the communistic features and choosing for leaders their most intelligent men.

**Commerce and Communications.**—The value of imports in 1894 was 2,222,000 pesos in

gold; that of exports, 1,835,000 pesos. During the year 220 steamers and 58 sailing vessels, of an aggregate burden of 104,524 tons, were entered from foreign ports at Asuncion. Nearly half the imports come from England. The principal articles of import are textile goods, wine, and rice. The chief exports are *yerba maté*, hides, tobacco, and timber. There are 156 miles of railroad. A telegraph line bringing Asuncion into communication with other countries was completed in March, 1894.

**PASTEUR, LOUIS**, a French chemist, born in Dôle (Jura), Dec. 27, 1822; died in Paris, Sept. 28, 1895. He was the son of a tanner who had been a soldier and who had been decorated for valor. When he was an infant his parents



LOUIS PASTEUR.

removed to Arbois, where he entered the communal school and there showed a greater fondness for sketching than for studying. Subsequently he went to the college in Besançon and was graduated as Bachelor of Letters. He became a tutor there and prepared for the École

Normale in Paris. At the examination he attained the rank of fourteen and was admitted, but this did not satisfy him, so he settled in Paris and studied in the Institution Barbet, and in 1843 was admitted to the École Normale, standing fourth in the class. Here he studied chemistry under Balard and Dumas and crystallography under Delafosse, and after completing his course was successively assistant in physical sciences and demonstrator in chemistry, receiving the degree of Doctor of Sciences in 1847. While in the École Normale he showed the cause of the difference in the behavior of the ammonium-sodium racemate and the corresponding salt of tartaric acid with polarized light to be lack of symmetry in the crystals. At this time also he pointed out the difference between the dextrorotatory and the levorotatory tartaric acid, and proved that the two acids could be separated one from the other by a process of fermentation started by a special form of mold. This investigation, establishing the relations between crystalline form and optical properties, and throwing considerable light on the architecture of molecules, was really the foundation of stereochemistry, and was made with funds supplied from his own slender resources; his success in this particular branch of inquiry was considered remarkable for so young a man. In 1848 he was called to the chair of Physics in Dijon, and in the same year he accepted a similar appointment in Strasbourg.

In 1854 he was charged, in the capacity of dean, with the task of organizing the faculty of sciences in Lille, and he remained there until 1857, when he was called to Paris to take charge of the scientific studies of the École Normale. He continued in the active administration of this work for ten years, and in 1862 became also Professor of Geology, Physics, and Chemistry at the École des Beaux Arts. Meanwhile in 1857 he began his famous researches on fermentation. He distinctly proved that the changes occurring in each of the various processes of fermentation were due to the presence and growth of a minute organism called the ferment. His own words are: "The chemical act of fermentation is essentially a correlative phenomenon of a vital act beginning and ending with it. I think that there is never any alcoholic fermentation without there being at the same time organization, development, multiplication of globules or the continued consecutive life of globules already formed." Thus the science of bacteriology, of which he has been called the father, came into existence. He also showed that this change was not so simple as was represented in the mere splitting up of sugar into alcohol and carbonic acid, but that other important substances were produced, as, for example, succinic acid and glycerin. The practical application of his studies came later when he showed that the ferment of wine exists on the surface of the grape when it has ripened, and when he indicated that in the case of wine as well as in beer each special form of deterioration was due to a special organism. The property of turning sour or becoming bitter, characteristic of wines of low alcoholic strength when kept for a time, was found by him to be due to a similar cause. Such

diseases were remedied on his suggestion by a process called "Pasteurization," which consists in heating the wine slowly, when bottled off, to a temperature of 65° C., and then allowing it to cool. A similar process was applied to beers. By pointing out that the deterioration of certain wines and beers was due to a specific ferment, and by showing how the action of this ferment could be prevented, he accomplished a saving of enormous sums to two very important industries. And this was done by careful experiment and by bringing to bear on the subject an intelligence trained in exact methods and in unerring observation, coupled with employment of the microscope and the other aids of modern research.

In 1865, on the suggestion of Dumas, the chemist, he undertook the study of the silkworm disease, which at that time threatened to destroy the entire silk industry of central France. The value of raw silk in 1853 was placed at 130,000,000 francs, and in 1865 it had fallen to one fifth that sum. Vittadini and Cornalia had shown in 1859 that the mobile corpuscles, which previous observers had detected in the worm and in the eggs, were closely connected with the disease. Pasteur, when he began the inquiry, had never even seen a silkworm, and knew nothing of its habits and life history. He spent several years in tracing the germs of the "pebrine" disease through the various stages of development of the egg, larva, chrysalis, and moth, and soon found that the parasite, once introduced, persisted through all the stages of the animal's life, and that even the eggs were infected. He came to the conclusion that the only method offering any hope of success was a radical extermination of all infected moths and eggs, and recommended the following plan of treatment: When the female has laid her eggs and dies, the body is dried, pounded up in water, and examined microscopically; if no corpuscles are found, the eggs are preserved for culture; but if any corpuscles are discovered, all the eggs of that moth are immediately burned. Each moth is examined in the same way, and all infected hatchings are destroyed. In 3 departments alone subsequent to the application of this treatment the annual value of silk rose from 1,500,000 to 22,000,000 francs.

In 1867 he was given the chair of Chemistry in the Sorbonne, which he held until 1875. Toward the close of this period a controversy arose as to the truth of the theory of spontaneous generation. Pasteur, by a series of the most delicate and convincing experiments, proved the existence of micro-organic forms and their spores in the air, and showed that while unpurified air was capable of setting up fermentative changes of various kinds, the same air freed from germs could not give rise to these changes. The advocates of spontaneous generation were silenced. Later he began the study of inoculation as a cure for diseases other than smallpox. He demonstrated that animals of the ovine and bovine species may be prevented from contracting the disease of anthrax (charbon) or splenic fever, as it is variously called, by inoculating them with attenuated germs of the specific minute organism which is found to exist in that disease and to be its efficient cause. The mortality, which



before the introduction of the preventive treatment was in the case of sheep 10 per cent., was after the adoption of inoculation reduced to 1 per cent. In the case of chicken cholera he demonstrated its cause to be a micrococcus which, when it was cultivated in the manner prescribed by him and the fowl was vaccinated with the attenuated virus, rendered the latter proof against the cholera, even when placed among other infected fowls.

Pasteur's last and crowning triumph was in the application of his method of inoculation to rabies. He began the study of this subject in 1880, but could isolate no specific germ. He, however, found that the disease had an especial affinity for and was concentrated in the nervous centers; hence he employed emulsions of nerve substance in his inoculations, as he otherwise would have used culture fluids. Rabbits, in which the disease always assumes a paralytic and painless character, were inoculated, and the cords of these animals, after appropriate treatment, were used for the inoculation of others; and this process was repeated until a sufficiently attenuated virus was obtained. He soon found that dogs which had been inoculated were perfectly protected and that they might be bitten by mad dogs or inoculated with the most powerful rabic virus without infection. In treating a case of suspected infection from a rabid animal a series of inoculations was made, beginning with the weakest fluid and ending with a virus that, if used at first, would have inevitably proved fatal. Its application to humanity was tried, and the story has been told in bronze. The French nation erected, with funds raised by popular subscription, the Pasteur Institute, which is devoted to carrying out in practice the

of a French shepherd boy engaged in a death struggle with a mad dog which had been worrying his sheep. The boy who was the original of the statue killed the dog with his bare hands,



antirabic treatment, with laboratories and every convenience for extending by research the knowledge of the preventive treatment of infectious disease. In front of this building is the statue

but was horribly bitten in the combat. He underwent the antirabic treatment, which proved successful, for he remained perfectly healthy, and his deed and its consequences are now historic. Institutions for the antirabic treatment have since been established in the largest cities of the world. Pasteur's last experiments of this character were made in 1892, when he inoculated animals for cholera, but its successful application to humanity has not yet been accomplished.

In 1874 he was awarded 12,000 francs by the Society of Encouragement of Paris and an annuity of the same value by the National Assembly of France, and in 1875 was also given a full retiring pension from his professorship at the Sorbonne. Oxford gave him in 1882 the degree of Doctor of Sciences. In 1862 he was elected to the Academy of Sciences in the department of mineralogy, and in 1887 was chosen to succeed Vulpian as perpetual secretary of that body, but this office he resigned two years later, and he was then made honorary perpetual secretary. He was elected to the French Academy in 1881, taking the seat of Littré. In 1869 he was chosen a foreign member of the Royal Society of London, from which organization he received its Rumford medal in 1856 and its Copley medal in 1874. Napoleon III signed a decree in 1870 making him a Senator, but, owing to the war, the decree was never issued. He was made chevalier of the Legion of Honor in 1853 and, after passing through the various grades, received the Grand Cross in 1881. Foreign orders of every description were sent to him and prizes of large sums of money were given to him. His name was enrolled in the great scientific societies of the world, including the National Academy of Sciences in the United States. A medal



was given him by his associates, friends, and admirers in 1882; and he was presented with a gold medal on the anniversary of his seventieth birthday, in 1892. The presentation took place in the Sorbonne and was presided over by President Carnot. Addresses in his honor were made by representatives of scientific bodies from all over the world, who had been sent to render homage to the great *savant*. Besides his minor contributions he published: "Nouvel exemple de fermentation déterminée par des animaux en fusoirs pouvant vivre sous oxygène libre" (1863); "Études sur le vin, ses maladies, les causes qui provoquent" (1866; second edition, 1872); "Études sur le vinaigre, ses maladies, moyens de les prévenir" (1868); "Études sur la maladie des vers à soie" (1870); "Études sur la bière, ses maladies, les causes qui les provoquent" (1876); "Les Microbes" (1878); and "Examen critique d'un écrit posthume de Claude Bernard sur la fermentation" (1879). The story of his life was written by his son-in-law, M. Valléry-Radot, under the title "M. Pasteur, histoire d'un savant 'par un ignorant.'" At the time of his studies on the silkworm he was warned to discontinue his work, but he declined. A discovery was given to the world, but at the expense of half of his body, for he was paralyzed. He recovered, but overworked at the time of his investigations on rabies, and in 1886 he was again prostrated, from the effects of which he never completely rallied, though his death was comparatively sudden. A national funeral was decreed for him by President Faure. His body lay in state in the Pasteur Institute, and the funeral ceremony took place in the Cathedral of Notre Dame. The Government desired that his remains be interred in the Panthéon, but his own wishes were respected, and he was buried in the garden of the Pasteur Institute.

**PATENTS AND INVENTIONS.** In this article the intention is to describe a few of the most recent inventions that may be considered of general interest or specially suited to home application.

**Steam Lifeboats.**—Among the improvements recently introduced in the English Lifeboat Service are boats propelled by steam. There are 3 in the service now, the 2 earlier boats having proved their usefulness during two or three years, and the third, the "City of Glasgow," being the improved result of the former experiments. She was planned by G. W. Watson, the yacht designer, and cost £3,500. The machinery was constructed by Penn & Sons, of Greenwich, the engines being designed after Green's patents for what is known as "jet propulsion." They are of 225 horse power, and drive 2 nearly horizontal turbine wheels of 30 inches diameter. The total weight of the machinery is 10 tons. The boat is 53 feet long, 16 feet beam, 5½ feet deep, and of 30 tons displacement. She is constructed mainly of galvanized steel, with heavy bilge keels and fender gunwales of American elm. Ample water-tight compartments are provided fore and aft, the boiler and machinery being in separate compartments. The jets are so arranged that the boat can be driven backward, forward, or sidewise, or given a rotary motion. On her trial trips the

"City of Glasgow" made a most satisfactory record in all kinds of weather, and she is now stationed at Harwich, one of the most exposed points on the English coast.

This craft has been presented to the Lifeboat Service by the people of Glasgow, who raised the required funds in small subscriptions, and are still contributing largely to the institution through the establishment of what is known as "Lifeboat Saturday," a certain day on which subscriptions are solicited for this purpose.

**A Novel Craft.**—The Layman pneumatic sporting boat is an invention that commends itself at first sight to the hunter and the fisherman. The accompanying illustrations suffi-



SPORTING BOAT.

ciently show its external appearance. In effect it is an elliptical float made of India rubber or other flexible waterproof material, tublike, and with a pair of boots permanently attached to its bottom or under side. These boots are provided with fins or paddles at the sides and under the soles, which fold when moved forward and open on the return stroke. The navigator, seated in his boat, with his feet in the boots, moves his legs backward and forward as in walking, and



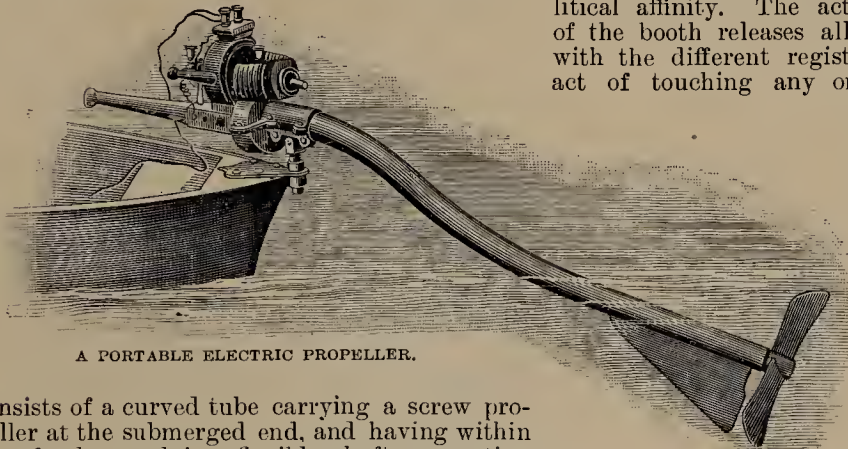
SPORTING BOAT, WITH STORM CAPE.

propels the boat or turns at will in any direction. The sides of the float are double, and are divided into water-tight compartments, any one of which is capable of sustaining one person in



the water. To upset is well-nigh out of the question, except by design; and if by accident the boat should be filled with water, it will still float with the load for which it is designed, and can still be propelled as described above. It is possible, though not very easy, for the wearer of the Layman boat to walk on land or wade in shoal water. When afloat, a fair rate of progress can be made in still water, not to exceed 3 miles an hour, but this is effected in absolute silence and without the conspicuous movement of paddles or oars so alarming to game of all kinds. A storm cape is provided, which buttons down round the rim of the float and effectually protects the wearer against rain or spray. The float is also provided with sockets in which screens or awnings can be placed for further concealment or protection.

**Electric Propeller.**—A portable electric propeller, capable of being applied to any boat, has been introduced recently by the Portable Electric Boat Propeller Company, of New York. Its general appearance is shown in the illustration. Briefly described, the propelling device



A PORTABLE ELECTRIC PROPELLER.

consists of a curved tube carrying a screw propeller at the submerged end, and having within it a freely revolving flexible shaft connecting with the propeller. An electric motor is mounted upon the tube near the point where it rests upon the stern of the boat. A handle or tiller in continuation of the tube, projecting still farther forward, is within reach of the steersman. The motor is actuated by batteries carried in the boat amidships. The flexible shaft is made of phosphor-bronze. Near the propeller, and on the under side of the tube, is a metallic fin which serves as a rudder. The whole apparatus is pivoted in a socket affixed to the stern of the boat. The propeller, motor, and rudder together weigh about 35 pounds, and the batteries weigh from 100 pounds to nearly 300, according to the amount of power to be developed. The machinery is set in motion and disengaged by a very simple and easily operated adjustment, and the propeller can be driven (out of water) to 1,500 revolutions a minute. A boat 10 to 18 feet long can be propelled by this apparatus 3 to 5 miles an hour under favorable conditions. The outlay for ordinary purposes is about 5 cents an hour. When not in use for the propelling machinery the batteries are available for any other purpose to which electricity in this form can be applied.

**Voting Machines.**—The new Constitution of New York provides for the use of voting machines. The permission is mainly with a view to the future, but all who favor simple and direct forms of voting must look upon the introduction of such machines with favor. The presumed object is to enable the voter, whether ignorant or intelligent, to vote for whomsoever he pleases without the possibility of intimidation or compulsion by political managers. Altogether about 25 patents have been issued covering machines of this character. One that has attracted much attention is known as the Myers machine. It is contained in an iron cupboard, not unlike the ordinary voting booth in appearance, with one door through which the voter must make his entrance and exit. Within, fastened to one side of the booth, is a series of electric buttons, each of which belongs to the name of a candidate. The names are further distinguished by being printed on paper of different colors, indicating the different political parties. Thus, in case of doubt, the voter may to a certain extent fall back upon his color sense in order to be sure of his political affinity. The act of opening the door of the booth releases all the locks connected with the different registering machinery; the act of touching any one button registers a

vote for the particular candidate to whose name the button is attached, and at the same time shuts off the names of all other candidates for the same office. Thus, while the voter may vote as he likes for a Democratic governor, a Republican mayor, or a Prohibition alderman, he can not

by any blunder vote for both a Democratic and a Republican governor. With a machine of this kind, the entire independence of the voter presents an insuperable bar to almost all kinds of bribery. The cost of one of these machines, compared with the cost of printing, paper, etc., incident to an ordinary election by ballot after any of the systems at present in vogue, seems to be in favor of the machine. But that can only be decided by the test of actual experiment. Under the State law, the town of Mount Vernon, N. Y., tried the Myers machine at the last election, and the result is said to have been highly satisfactory, the complete returns having been ascertained within a few minutes after the polls were closed.

**Window Screens.**—Probably almost every one has noticed that when a common domestic fly alights upon a pane of glass or upon an ordinary wire screen, he immediately begins to crawl upward. It has taken all these years for the human race to discover that a properly placed opening will allow the fly to escape into the outer air. Apparently it is only necessary to remove the top moulding of an ordinary wire window screen, leaving a space between the sash

and the wire gauze. Of course a neater and more workmanlike arrangement will occur to any one with mechanical ingenuity, but the principle is merely to have an opening extending the entire width of the window at the upper part of the screen. It is evident that it is possible for flies to enter the room through this opening, which is only intended for exit, but the few that will find their way inward bear a very small proportion to the larger number that inadvertently second the inventor's intention. G. P. Yule, the inventor, attaches no conditions or patents to his device, and it is safe to conclude that its use is open to all.

**Rapid transit** is one of the vital questions of the day, not only in the large cities but for long distances as well. The necessary conditions of electric motors and high rates of speed seem to indicate that for 2 through lines an almost straight course must be laid. With speed such as is contemplated, any curves must be very objectionable, owing to the almost irresistible lateral pressure. Experiments in the direction of single-rail roads have been in progress during the past year. A road of this description has been constructed across Long Island, and an experimental section has been in successful operation for some months.

Another device in this same direction is the Chase-Kirchner Aërodromic Railroad. As on the other road, the ends of the cars are sharp like the bows of a ship, so as to offer the least resistance to the air. In this road, however, a novel feature is introduced in a set of aëroplanes, readily adjustable, and intended to aid in overcoming the grades that may be encountered along the line. Elaborate experiments by Maxim, Langley, and others have proved that the most effective aëroplanes are short in the direction of motion—that is to say, like a bird's wing moving edgewise. A set of Venetian window blinds gives a good idea of the arrangement of these aëroplanes; they are supported on strong framework above the cars, and can be delicately adjusted to any angle. On both these roads a very high rate of speed is anticipated, 150 miles an hour being claimed as possible, while 100 miles an hour is confidently hoped for. To attain such speed with safety, curves must be abolished; and since there must be no such obstructions as are inseparable from grade crossings and the like, the track must be elevated. The single-rail system of course greatly simplifies the engineering problem, does away with the necessity of snow sheds and the like, and reduces the expense of right of way to a minimum. On a level the aëroplanes will be kept practically straight, and an ingenious mechanical device is arranged so that the lifting effect will increase or decrease automatically according to the steepness of the grade.

That the electric trolley must give way to conduits and storage batteries is generally admitted by electrical engineers. Conduit systems are in successful operation in Washington, and an underground electric system has been successfully tested in the Buda-Pesth street railways, which run in all directions through that city. These, according to the "Railway World," have been in operation several years, and their success from an engineering as well as

from a financial point of view is assured. This is believed to be at present the only tramway in Europe that is successfully operated by means of an underground conduit. The safety of the system as regards possibly fatal shocks from broken wires and the like is said to be fully demonstrated in practice.

An interesting experiment is reported from the American Car Company of St. Louis, which constructed a car especially for the purpose, space for the batteries being provided under the seats, accessible through openings at the rear of the car. The system followed was that of W. L. Silvey, of Dayton, Ohio, and the aim of the constructor was to secure the highest efficiency and the least possible weight consistent with an apparatus capable of withstanding the almost unlimited amount of hard usage that is unavoidable under such circumstances. It employs 108 cells, each weighing 27 pounds, and the total weight of the batteries is about 3,000 pounds. In a test run a round trip of 9 miles was made in thirty-five minutes. This included several complete stops, two considerable grades, several railroad crossings, and a long bridge. It was evident that 20 or 25 miles an hour was easily within the capacity of this car. It made 6,200 car miles, and no repairs were necessary either for the batteries or for the motor, the only renewals required having been a new set of carbon brushes. The total expenses for repairs was \$2.50, all of which was expended upon the trucks. It is believed that a car can easily be operated at a cost not exceeding 8 cents a mile.

With the advent of storage batteries for car service, the danger from rioters will be largely diminished. Under the trolley system, a single broken wire may disable an entire line of cars, while if each car is provided with an independent storage battery a separate attack will be necessary for each car in order to effect a wholesale stoppage.

**Electric Traction.**—The end of the year saw 9,000 miles of electric railway of different types in operation in the United States and Canada. The rolling stock included 30,000 cars, with 850,000 horse power, and the population per mile of track was 8,200. In contrast with this, in all Europe there were at last accounts only 500 miles in operation, with 1,260 cars and 24,700 horse power, and this with a population per mile of track of 765,000. Germany leads off with 190 miles; Great Britain follows with 65, France with 60, Austria-Hungary with 50, and Italy with 15. The rest of the 460 miles is made up of small lines scattered through the various nations. The English quota lies mainly in 2 lines, in London and Liverpool.

**New Building Material.**—Specimens of glass building blocks, or glass bricks, as they are popularly called, have been introduced in France and Germany, it is reported, with satisfactory results. They are hollow blown, very light, and strong enough to serve many architectural purposes. For domes, it is believed they will be peculiarly adapted, since their lightness will be largely in their favor as contrasted with brick or stone, and they will admit a modified light from sun and sky that will be very pleasing. In like manner they may be used for wall spaces where absolute solidity is not required,

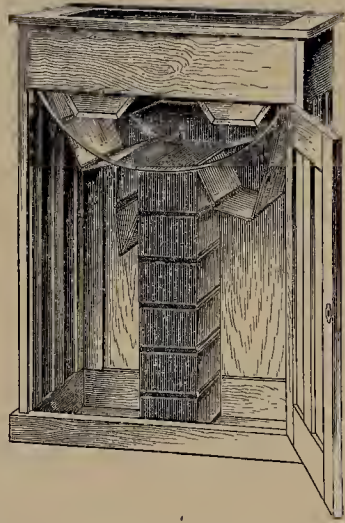


and in many cases they may take the place of windows, where light without ventilation is the principal end in view. Walls constructed with these "bricks" retain heat longer than any other kind, and since they admit sunlight they are peculiarly adapted to the building of green-houses and conservatories. Walls 27 feet high have been built of glass bricks, without a strengthening framework, but above that height some supports are regarded as necessary. No mention is made of the endurance of the glass bricks under heat, as in case of fire, but they will no doubt stand quite as well as many of the substances now in common use. They are known to the profession as "Talconnier's blown-glass bricks," and specimens were shown at the annual exhibition of the Architectural League.

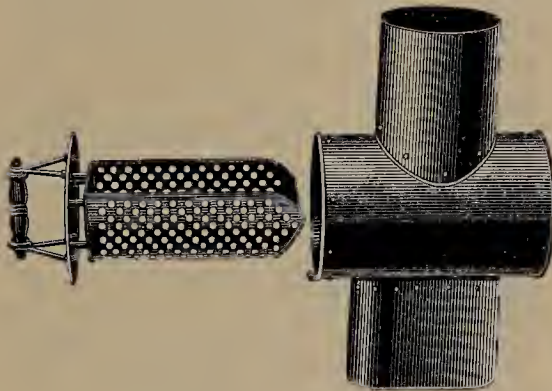
**Disposal of Kitchen Refuse.**—Among the most difficult of the sanitary problems in connection with housekeeping, particularly in large cities, is the disposal of kitchen refuse. How to remove it and keep it separated from other kinds of waste material is a perpetual puzzle for municipal boards of health. A simple and inexpensive device has been introduced lately by the Sanitary Construction Company, of Boston, and has received the approval of the authorities of that city and New York. Col. George E. Waring, Street Commissioner of New York, has tested it personally, and gives it his approval. It consists of an addition in the

time. In point of fact, the refuse is by this means reduced to charcoal, which can be used in kindling the fire the next morning, or can simply be thrown upon the fire and consumed altogether.

**A New Library Index.**—The difficulties in the way of indexing a large library to which

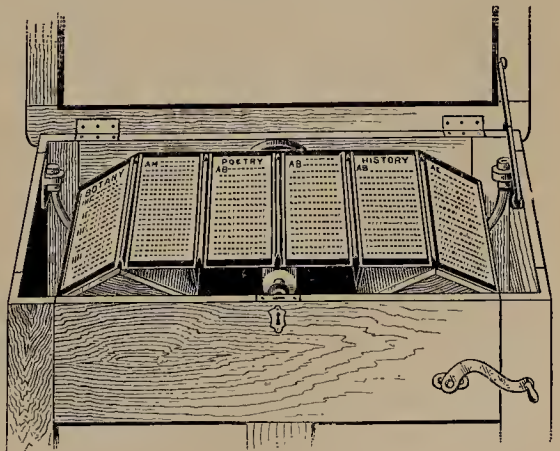


additions are being constantly made is one of the greatest with which librarians have to contend. The card catalogue has been heretofore the nearest approach to a solution, but a recent invention, originating in the Newberry Library Chicago, appears to be a great advance even upon the card catalogue. This consists essentially of a box with a glass top, standing about breast high, and furnished with a crank. Inside are 2 hexagonal prisms turning on their axes, to one of which a crank is attached. Around these, and falling almost to the bottom of the box, is an endless chain made up of light metallic frames with flanged edges, into which can be inserted cards containing the designations of the books in the library. Looking in through the glass top, the user sees 4 long pages of cards arranged in alphabetical order, and he can turn



A HOUSEHOLD GARBAGE CARBONIZER.

shape of a horizontal cylinder set into the kitchen stovepipe near the point where it issues from the stove or range. One end of the cylinder is removable, and attached to it is a rack or scoop with perforated sides and a tight bottom, as shown in the illustration. The refuse is placed in this scoop, and the whole is then re-inserted in the cylinder. Enough open space is left around the receptacle and within the cylinder to admit of free draught, and the action of the heat and the products of combustion from the fire soon drives off the water from the refuse and reduces the solids to the form of carbon. All odors and gases resulting from the process go up the chimney, where they can do no harm. The skeptical may doubt the efficiency of this contrivance, on the ground that unless a very hot fire is perpetually kept up there will not be heat enough to effect the purpose; but a low degree of heat kept up for a long time will have the same effect as a greater heat for a short



the crank in either direction to bring into view any other pages that he may want. The frames

of the pages are so linked together that they can be readily unlinked at any point, and additional ones inserted. Short wire projections at the corners of every sixth page slide upon semi-circular guides, and cause the slack of the endless chain, or that portion not in immediate use, to arrange itself in a compact and methodical manner within the box, as shown in the illustration. The contrivance is called the Rudolph continuous indexer.

**A Wire Flywheel.**—A novel flywheel has been constructed recently at the Mannesmann Tube Company's works in Germany. It consists of a cast-iron hub or boss, to which are attached 2 steel-plate disks or cheeks, about 20 feet in diameter. The peripheral space between the disks is filled in with 70 tons of No. 5 steel wire, completely wound around the hub, the tensile resistance thus obtained being found to be far superior to that of any casting.

This huge flywheel is driven at a speed of 240 revolutions a minute, or a peripheral velocity of 2·8 miles a minute, or approximately 250 feet a second. For such a flywheel the length of wire is estimated at 250 miles.

**PEACE SOCIETIES,** organizations having for their object the settlement of disputes between nations by arbitration rather than by war. The leading organization of this nature is the International Peace Association. In the United States the general organizations, with many branches, are: The American Peace Society, with headquarters in Boston, and the Universal Peace Union, with headquarters in Philadelphia. The American Peace Society, in 1891, made arrangements for a Peace Conference to be held in Chicago during the Columbian Exposition of 1893. At this conference the following memorial was issued to all the governments of the world, and the Secretary of State sent facsimile copies to them:

The undersigned, citizens of many countries, gathered at the Columbian Exposition in Chicago, in the United States of America, recognizing the advantages accruing to those nations which have pursued the policy of arbitrating international disputes, and desiring that like benefits may in the future be enjoyed by all nations, and deeming this opportunity fitting, do hereby join in this memorial to all our various governments, praying that they will unitedly agree, by mutual treaties, to submit for settlement by arbitration all such international questions and disputes as shall fail of satisfactory solution by ordinary and peaceful negotiations.

The work of the Peace societies received direct aid from the Pan-American Conference in April, 1890, when these resolutions were adopted:

1. That the principle of conquest shall not during the continuance of the treaty be recognized as admissible under American public law.
2. That all cessions of territory made during the continuance of the treaty of arbitration shall be void if made under threats of war or the presence of an armed force.
3. Any nation from which such cessions shall be exacted may demand that the validity of the cessions made shall be submitted to arbitration.
4. Any renunciation of the right of arbitration made under the conditions named in the second section shall be null and void. Those conditions are under threats of war or the presence of armed force.

The resolutions were accompanied by a report of the conference, setting forth in detail the

manner in which arbitrators shall be selected and the manner of reaching and declaring their judgments. There is to be no restriction of choice of arbitrators; they may be nations, scientific societies, officials, or private citizens. Unless it is specifically agreed previously that unanimous judgment shall be required, a majority of the arbitrators shall decide the question of issue. Where the arbitrators consist of an even number, each nation may appoint an umpire. Any nation deeming itself interested in or affected by the decision of any question may appoint an arbitrator in the case. It is provided that ratifications of the treaty shall be exchanged at Washington, and it shall be in force for twenty years from the date of its proclamation. After that term has expired the treaty shall remain in force until one year after any nation has given notice to all the other nations party thereto of its desire to withdraw; but the withdrawal of any nation shall not relieve the other nations of their duties under the agreement. The report also recited that "this conference, having recommended arbitration for the settlement of disputes among the republics of America, begs leave to express the wish that controversies between them and the nations of Europe may be settled in the same friendly manner."

Early in 1895 the French Chamber of Deputies voted to ask the Government to negotiate a permanent arbitration treaty with the United States. The House of Commons declared strongly in favor of international arbitration, and in 1893 transmitted the following to the Government of the United States at Washington:

*Resolved,* That this House has learned with satisfaction that both houses of the United States Congress have by resolution requested the President to invite from time to time, as fit occasions may arise, negotiations with any government with which the United States have or may have diplomatic relations, to the end that any differences or disputes arising between the two governments which can not be adjusted by diplomatic agency may be referred to arbitration and peaceably adjusted by such means; and that this House, cordially sympathizing with the purpose in view, expresses the hope that Her Majesty's Government will lend their ready co-operation to the Government of the United States upon the basis of the foregoing resolution.

At a meeting of the American Peace Society, held in Boston, Dec. 24, 1895, to consider the relations of the United States and England as to the boundary dispute in Venezuela, the following was adopted:

War between the United States and Great Britain is a moral impossibility. Neither nation—surely not our nation—can be guilty of the awful crime of attacking the other. Threats of war by the United States are worse than a stupendous blunder. Christianity, civilization, humanity, condemn not merely war, but threats of war. Justice between nations is good, especially by the powerful to the weak. Magnanimity inspires our country to seek justice for Venezuela from Great Britain. The Monroe Doctrine means, first, the safety of the United States, and, secondarily, the protection of this hemisphere from European oppression. But our safety is assured beyond question by our power. It is folly to so extend the Monroe Doctrine that boundary disputes of ancient origin, growing out of doubtful documents or data beyond our ken, must imperil the peaceful progress of Christian civilization. What madness to embroil our land



in the constant dissensions of the Spanish and Portuguese and mixed races of South America! Our Government has done well to intervene by honorable diplomatic appeal and protest, including urgent request for arbitration. After diplomacy fails two great nations must always arbitrate if the quarrel be grievous. The exact Venezuela boundary sinks into insignificance measured against the peace of the English-speaking people. War between them would shake civilization, inflame malignant passions, inflict immeasurable suffering on the masses of both peoples, the millions of workingmen and women, even now struggling hard enough to earn bread for their families. The golden rule condemns war and these threats of war. The rulers of both lands are at fault. Both nations must recede. War between two nations of brothers, leaders of the world and Christian civilization, is impossible. We appeal to the Christian conscience and common sense of our people to do all in their power to maintain inviolate the long existing and steadily growing sentiment of amity and peace between the English-speaking nations.

At the last meeting of the Connecticut branch of the Universal Peace Union arrangements were made to erect the second peace temple in the world, the first having been the Temple of Concord, in the Roman Forum. Since 1816 there have been 112 international arbitrations between European nations, the United States, and the states of Central and South America. Nearly all have taken place within the last half century, in which period the United States has arbitrated its contentions thirty times, seven times with Great Britain.

**PENNSYLVANIA**, a Middle State, one of the original thirteen, ratified the Constitution Dec. 12, 1787; area, 45,215 square miles. The population, according to each decennial census, was 434,373 in 1790; 602,365 in 1800; 810,091 in 1810; 1,047,507 in 1820; 1,348,233 in 1830; 1,724,033 in 1840; 2,311,786 in 1850; 2,906,215 in 1860; 3,521,951 in 1870; 4,282,891 in 1880; and 5,258,014 in 1890. Capital, Harrisburg.

**Government.**—The following were the State officers during the year: Governor, Daniel H. Hastings; Lieutenant-Governor, Walter Lyon; Secretary of the Commonwealth, Frank Reeder; Secretary of Internal Affairs, Isaac B. Brown, succeeded in May by James W. Latta; Treasurer, Samuel M. Jackson; Auditor General, Amos H. Mylin; Attorney-General, H. C. McCormick; Adjutant General, Thomas J. Stewart; Insurance Commissioner, James H. Lambert; Bank Commissioner, B. F. Gilkeson; Secretary of Agriculture, Thomas J. Edge; Dairy and Food Commissioner, Levi S. Wells; Superintendent of Public Instruction, N. C. Schaeffer; Superintendent of Buildings, John C. Delaney; Chief Justice of the Supreme Court, James P. Sterrett; Associate Justices, Henry Green, Henry W. Williams, James T. Mitchell, J. B. McCollum, John Dean, D. Newlin Fell. The State officers are Republicans, as are all the justices except McCollum, who is a Democrat.

**Finances.**—The Treasurer's report for the year shows the receipts to have been \$11,746,411.10, and the payments \$13,402,962.90. There was transferred to the sinking fund \$369,371.50. Some of the largest items among the receipts were as follow: Tax on corporation stock and limited partnerships, \$3,537,840.65; on gross receipts of corporations, \$598,548.62; on bank

stock, \$514,074.27; on incomes, \$83,100.84; foreign insurance companies, tax on premiums, \$513,616.19; on municipal loans, \$158,640.89; on corporation loans, \$822,381.76; on personal property, \$2,307,936.32; on writs, wills, deeds, etc., \$155,231.02; on collateral inheritances, \$1,091,993.05; mercantile licenses, \$532,294; wholesale liquor licenses, \$437,064.21; brewers' licenses, \$115,366.16; distillers' licenses, \$8,424.50; bottlers' licenses, \$124,045.76.

**Taxes and Valuations.**—The amount of taxes collected for the support of the poor was \$1,593,755.93. There was appropriated from the county treasuries for the support of the poor in counties having almshouses \$742,664.06, which makes a total of \$2,336,419.99. The amount collected during the year for the construction and repair of streets, roads, and bridges was \$9,019,185.77.

In the 66 counties making report the common schools have made necessary the levy and collection of \$11,930,907.91. This does not include the amount received by the school districts direct from the State Treasurer.

The total indebtedness of counties is \$62,691,583.91. Philadelphia's debt is \$53,910,338.98, and that of Allegheny County \$3,659,053.77. Nineteen counties have no debt; 16 increased their debt during the year.

In 1894 the value of all real estate in Pennsylvania was \$2,634,601,500. In 1895 it was \$2,741,938,849.

**Education.**—The report of the Superintendent of Public Instruction for the year ending June 3, 1895, gives the following figures: Number of schools, 25,348; number of male teachers, 8,628; number of female teachers, 17,460; average salary of male teachers per month, \$44.52; average salary of female teachers per month, \$38.34; average length of school term, in months, 7.91; number of pupils, 1,070,612; teachers' wages, \$9,304,329.59; cost of textbooks, \$924,305.60; total expenditures, \$18,992,651.12; State appropriation for the school year ending June, 1894, \$5,484,316.30. There were 807 more schools than in the preceding year and 29,933 more pupils, and the increase in teachers' wages amounted to \$305,985.93.

The Cornplanter Indian School, on the reservation in Warren County, is attended by 18 Indian and 6 white children and costs \$300 annually. A class of 20 was graduated at the Carlisle Indian Training School.

The State aid distributed to students of the 13 normal schools amounted to \$51,650 for graduates, and \$65,817 for under graduates. There were 7,125 students in the normal schools, and 1,480 graduated who intend to be teachers.

The colleges reporting the largest number of students were: University of Pennsylvania, 2,102 in attendance and 480 graduates; Girard College, 1,918; Lehigh University, 520 students, 114 graduates; Western University of Pennsylvania, 423 students, 76 graduates; Dickinson College, 326 students, 28 graduates; Lafayette College, 311 students, 48 graduates.

By a decision given in April in a school case at Waverly the reading of the Bible in the public schools of Pennsylvania was practically declared illegal. In his opinion the judge said that denominational religious exercises and instruction in sectarian doctrines in our system of

common-school education are expressly prohibited by the Constitution.

The religious-garb bill has had the effect of excluding the sisters from the ranks of public-school teachers; in some instances the children whom they formerly taught have also been withdrawn from the schools.

The State Superintendent reports that the free-text-book law has given great satisfaction. A noticeable effect is seen in the increased attendance, amounting, in some instances, to 30 per cent.

**Banks.**—The report of the Bank Commissioner shows the condition of 187 institutions, exclusive of building and loan associations—the report of which was to come later—for 1895. The deposits aggregated \$41,915,517.71; savings institutions, \$73,937,638.28; trust companies, \$103,114,827.73; total, \$218,967,983.72; increase in 1895 over 1894, \$14,043,926.12. The banks reporting to the department had a reserve fund in 1895 of \$3,442,384.48; savings institutions, \$6,375,362.77; trust companies, \$20,450,665.49; total, \$35,268,412.74. The report shows that there was a decrease of \$2,713,586.68 in the reserve fund of these institutions in 1895.

The number of deposit accounts in banks in 1895 was 109,233; savings institutions, 282,677; trust companies, 112,648; total, 504,558. The average to each depositor in all institutions was \$433.98.

**Railroads.**—The report of the Secretary of Internal Affairs for the year ending June 30 shows that the total amount of stock of railroads operating in Pennsylvania is \$1,099,303,383.42, and the capital stock outstanding \$944,670,893.64. In 1894 the bonded indebtedness was \$982,551,341.93, an increase in five years of \$101,961,832.21.

There was expended \$16,359,034.76 in the equipment, improvement of roads, and construction. The total cost of roads and equipment, as reported to the department, is \$1,538,501,235.29.

There were 1,538 persons killed and 10,607 injured by the steam railroads operating in the State. Twenty-nine of those killed were passengers.

The United States Supreme Court affirmed, in May, the constitutionality and validity of the Pennsylvania statute of 1879 assessing the tax of eight tenths of 1 per cent. upon the gross receipts of railroad companies for tolls and transportation.

The Amalgamated Association of Railway Employees decided, Dec. 16, to declare a strike upon the lines of the Union Traction Company in Philadelphia; their demands were for a working day of ten hours, \$2 a day, and the recognition of the Amalgamated Association of Street Railway Employees. The strike lasted seven days. There were rioting and bloodshed and destruction of property, but no lives were lost. The strike was settled, Dec. 23, by the strikers accepting the company's terms. The new men who had taken the places of the strikers were, by the terms of the agreement, to divide their runs with the old employees who were to be taken back. It was estimated that the strike cost the company in fares \$250,000. The Christmas shopping trade was almost entirely stopped. Three rioters were sentenced to

two years' and one to eighteen months' imprisonment.

The Supreme Court decided in March in a case involving the rights of trolley companies that the street-railway act gives no right of eminent domain, and that, as the trolley lines are incorporated under that act, they have no power to construct their road, where the taking of property is incident or necessary to it, without the consent of the property owners.

**Insurance.**—The report of the Insurance Commissioner for 1894 was published in September. The life companies of the State issued 4,637 policies, insuring \$11,033,303, an increase over the business of the preceding year of 335 policies and a decrease of \$250,531 insurance. The companies of other States issued 751,180 policies in Pennsylvania, insuring \$165,453,269. The expenditures of Pennsylvania companies in 1894 were \$7,914,311.62, of which \$5,706,427.61 was paid to policyholders.

The report of the joint-stock fire and marine insurance companies of the State shows that there were 38 in 1894; assets, \$42,305,059; liabilities, except capital, \$21,398,170; capital, \$12,052,875; surplus, \$8,855,492; premiums received, \$16,393,262; total income, \$18,296,378; losses paid, \$10,681,144; total expenditures, \$17,496,524; dividends, \$1,157,365; risks in force, \$2,014,562,684.

There was a uniform decrease in fire, marine, and inland risks written, in premiums received, and in fire losses paid. The premiums received by stock companies during the year were \$10,332,492, and the premiums and assessments of mutual companies were \$1,391,096. The losses paid by stock companies were \$5,355,109, and the losses paid by mutual companies were \$1,045,713.

**Forest Fires.**—The report of the Forestry Commissioner shows that during the year 225,000 acres of woodland were burned over, causing a loss of timber aggregating fully \$1,000,000. Many fences were destroyed by these fires, and 5,000 men were engaged a total of about two hundred and fifty days in extinguishing the flames. The men received for their work in the aggregate \$45,000. Twenty buildings were destroyed by forest fires.

**Monuments.**—The anniversary of the battle of Brandywine was celebrated Sept. 11 at the old Birmingham Friends' Meetinghouse, the principal point of the battlefield, by the unveiling and dedication of a tablet to Lafayette and a granite monument to Col. Joseph McClellan. The monument was built by Col. McClellan's descendants and the Lafayette testimonial came from the Chester County Historical Society.

A monument erected near Taylorsville to mark the spot where Washington crossed the Delaware river before the battle of Trenton was dedicated Oct. 8 by the Bucks County Historical Society.

**Legislative Session.**—This extended from Jan. 2 to June 8. Senator Thomas was president *pro tem.* of the Senate, and Representative Walton Speaker of the House. About 1,200 bills were introduced, of which 587 went to the Governor and 489 were approved. There were 68 resolutions passed.

One measure that became a law was called



the "Greater Pittsburg" bill. When at least 5 per cent. of the qualified electors petition the Court of Common Pleas in favor of the annexation of one city of the second class to another, the court must order an election to be held, and if a majority of each city votes in favor the annexation shall take place.

For the relief of the Supreme Court in the increasing pressure of business bills were introduced providing for 2 more judges and creating a court of intermediate appeal, to be called the Superior Court, with a membership of 7. Another bill called for 3 more judges of the Court of Common Pleas.

The Marshall bill, repealing the law of 1883, which prohibited the consolidation of competing pipe-line companies, was passed in the face of great opposition from western Pennsylvania. A similar bill was passed in 1893, but was vetoed by the Governor.

One of the measures that attracted most attention was that called the "garb bill," which became a law. It prohibits the wearing by public-school teachers of any religious mark, dress, or insignia in the schoolroom. In its first form it made such wearing a misdemeanor on the part of the teacher; but as finally passed it imposed a penalty upon the school official continuing to employ the teacher—a fine for the first offense, and for the second loss of office and ineligibility for five years. The teacher is to be suspended for one year for the first offense, and permanently disqualified after the second. Protests were made against the bill in the interest of the Mennonites and Dunkards, of whom there are 50,000 or more in the State, and who wear a peculiar dress, and in that of the order of the Sisters of St. Joseph, who are employed in some public schools. In 1894 an injunction had been applied for, but was denied, to prevent sisters from teaching in the garb of their order in the school district of Gallitzinborough. The Junior Order of American Mechanics was especially active in pushing the bill.

A bill for compulsory education was passed, providing that all children between the ages of eight and thirteen shall attend school at least weeks in each year.

A new judicial apportionment increased the number of judges of common pleas and of the Orphans' Court.

The following relating to educational matters were enacted providing for the establishment of free public libraries in school districts except in cities of the first and second class; to regulate the establishment, classification, and maintenance of high schools.

A Banking Department was created, the chief officer to be a commissioner of banking, appointed by the Governor for a term of four years, at a salary of \$6,000. The duties and powers of the Auditor General in regard to supervision and regulation of banks and kindred corporations are transferred to this department.

A Department of Agriculture was created, with a secretary, deputy secretary, economic zoölogist, commissioner of forestry, dairy and food commissioner, and State veterinarian.

Increases were made in the salaries of State officials and employees, and by these and the creation of new offices the addition to State dis-

bursements is stated as being \$250,000 yearly. As an offset to the increase of expenses in the Banking Department there is a provision in the bill reorganizing the department, which carries with it a special tax upon the institutions under the control of the department. It is believed that this tax will produce enough revenue to make the State the gainer.

The appropriation for the Department of Agriculture was \$9,000 less than in 1893, and that for the care of public buildings and grounds about \$15,000 less. The Governor vetoed a provision for \$6,000 for payment of expenses of the State Weather-Service Bureau, considering its continuance unnecessary. An appropriation of \$32,000 for expenses of a Senate committee in settling a disputed election case was also vetoed, because it was excessive and not itemized. Another item of \$8,000 for the payment of the expenses of the joint legislative committee to investigate the question of convict labor and to what extent it interferes with the legitimate industries of the Commonwealth was disapproved because the amount was excessive and the purpose would not warrant the expenditure. The appropriations were reduced in all from about \$23,000,000 to about \$21,500,000 before they left the Governor's hands.

Appropriations of \$260,000 were made by the Legislature to the State normal schools. It was announced that the Governor intended to veto it, and the veto was filed in the office of the secretary. In a short time the executive was overwhelmed with communications from the managers of these institutions informing him that to refuse the appropriation at this time would be disastrous to the schools. This was a surprise to the Governor, and he notified the managers of the schools by telegraph that if they would agree not to draw more than 50 per cent. of the appropriations until the end of the fiscal year June 1, 1897, and the remainder afterward, he perhaps could give his approval. This proposition was accepted, and two days later he withdrew the veto and approved the bill. The question then arose whether this action was legal. As the Legislature had already adjourned, the bill could not be passed again.

Among other acts of the session were these:

Authorizing boroughs to redeem outstanding bonds and for that purpose issue and sell new interest-bearing bonds, and to provide a fund for the redemption thereof.

For the protection of German earp in the public lakes and streams.

Making dying declarations competent in prosecutions for criminal abortion and attempted abortion, where the subject shall die in consequence of such unlawful acts.

Authorizing the cities to appropriate private property for public parks.

Providing that none but citizens of the United States shall be employed on public work.

To define who shall be responsible for the maintenance of patients placed in insane hospitals by courts and judges.

Dividing the cities of the State into 3 classes with respect to their population, and designating the mode of ascertaining and changing the classification thereof in accordance therewith.

To exempt sewing machines and typewriting machines leased or hired from levy or sale on execution or distress for rent.

Making a uniform season in Huntingdon County for killing deer from Dec. 15 to Oct. 15, and squirrels from Jan. 1 to Oct. 15.

Regulating the construction and ventilation of tenement houses.

Making it a misdemeanor punishable by a fine of \$100 or imprisonment not exceeding one year willfully or wantonly to raise a false alarm of fire.

Abolishing the law of 1772 by striking out the provision requiring the kissing of the Bible in the administration of oaths so that hereafter all swearing will have to be done with the uplifted hand or the laying of the hand on the open book.

Punishing pool selling, the receiving or transmitting of bets by telegraph, or aiding in pool selling or betting.

Relating to and regulating the issue and transfer of certificates of stock by companies.

Legalizing the dehorning of cattle.

To honor the United States flag as the national emblem of a free people and to protect it from foreign and domestic insult.

Defining the crime of train robbery and punishing the same.

To prohibit exhibitions of physical or mental deformities in certain public places.

To prevent the interference of unauthorized persons with the electrical conductors and electrical appliances and machinery of companies using, generating, or supplying electricity for light, heat, and power.

Amending the divorce law so as to include indignities to the person of the husband.

Conferring upon municipalities the right of eminent domain for the purpose of appropriating public property for the use of the National Guard.

To regulate the advertising of sales by county commissioners of land bought by them for nonpayment of taxes.

Appropriating \$5,000 for a monument to the Philadelphia brigade at Antietam.

Some important measures defeated were bills for congressional, senatorial, and legislative apportionment, on which the 2 factions of the Republican party were opposed to each other. The Quay faction was against the measure, and defeated it with the aid of the majority of the Democrats.

There were various attempts to amend the ballot law, but these also failed.

A commission was created to ascertain the best methods of utilizing convict labor in the institutions of Pennsylvania so as not to interfere with legitimate industries. Resolutions were passed for the appointment of a joint committee of the House and Senate and 2 disinterested persons to investigate the State institutions to ascertain how many of their inmates are aliens; another to investigate the public and normal schools, and committees to investigate the management of the insane asylums.

**Political.**—An election was held in November for a State Treasurer and judges for the newly created Superior Court. The activity in politics during the year was mainly confined to the contests between factions in the 2 great parties. Robert E. Wright was elected chairman of the State Democratic Committee in place of Chairman Stranahan. Senator Quay was chosen chairman of the Republican State Committee in place of B. F. Gilkeson, and the 2 factions apparently worked together in harmony thereafter. Gov. Hastings was made chairman of the Republican State Convention at Harrisburg Aug. 28. For State Treasurer Benjamin J. Haywood was nominated, and for Superior Court judges the

6 Republicans appointed by the Governor after the passage of the act—E. N. Willard, Charles E. Rice, James A. Beaver, John J. Wiekham, Howard J. Reeder, and George B. Orlady.

The platform declared against free coinage of silver and in favor of protective duties, and charged the Democratic party with bringing on the panic of 1893 and the deficit in the national Treasury. The following resolution also was adopted:

We demand that public office should be for the public benefit, and its term in subordinate positions should be during good behavior. No public employee or officer should be permitted to influence primaries or elections, nor upon any pretense to be assessed upon his salary, and all unnecessary positions should be abolished and expenditures reduced. There should be a uniform basis of valuation of property for public purposes. Corporations enjoying public privileges should pay for them, and schools be divorced from politics and kept absolutely free from political influence and control.

The Democratic Convention was held in Williamsport Sept. 11. Benjamin F. Meyers was made the candidate for State Treasurer. For the judicial nominations the following were chosen: Harman Yerkes, James S. Moorehead, Peter P. Smith, Charles N. Noyes, Oliver P. Bechtel, Christopher Magee. The platform contained the following:

We especially invite the sober consideration of the people of this State to the remarkable factional struggle in the Republican party, a struggle which involved no principle or public policy, but simply the supremacy of factional leaders. The worst arraignment at our hands of Republican misrule falls short of what representative Republican newspapers and leaders testified of each other. The admitted prostitution of the public service, the intervention of corporate influences, the misuse of judicial appointments, and the consequent prostitution of the judiciary, the corrupt use of money in the purchase of delegates, the attempted terrorism at Harrisburg by men of the most abandoned type, fix the high-water mark of political debauchery. It but needed to complete its incomplete infamy the transparent hypocrisy which led a convention thus constituted to adopt "with laughter" resolutions concerning the very methods by which its delegates had been selected.

The Prohibitionists met in Pittsburg June 5, and made nominations, as did also the People's and the Socialist-Labor parties.

The result of the election in November gave the Republicans the State Treasurer and 6 judgeships, the seventh going to the Democratic candidate having the highest number of votes, as provided by the law establishing the court. This was Peter P. Smith, who received 285,882 votes. The vote for Treasurer was: Haywood, Republican, 456,745; Meyers, Democrat, 282,481; Berry, Prohibitionist, 20,779; Dawson, Populist, 7,802; Anton, Socialist-Labor party candidate, 1,329.

**PERSIA**, an empire in central Asia. The Government is an absolute monarchy based on the laws of the Koran, and hereditary in the Shiite dynasty of the Kajars. The reigning Shah is Nasreddin, born July 18, 1831. The heir presumptive is Muzaffereddin, born March 25, 1853.

The revenue for 1895 was estimated at \$6,300,000. A debt of £500,000 sterling was contracted in 1892 to pay an indemnity for the



tobacco *régie* that was farmed out to a foreign company and afterward canceled. This English loan is secured by the customs receipts of southern Persia, and pays 6 per cent. interest.

The Persian army numbers 54,700 infantry, 25,200 cavalry, 7,200 militia, and 5,000 artillery. The number of troops kept under arms is about 24,500.

The imports are estimated at \$26,400,000 a year, and the exports at \$15,600,000. The chief imports are cotton cloth, glass, paper, woollens, petroleum, sugar, iron, copper, coffee, and tea. The exports are opium, silk, pearls and pearl shells, carpets, dried fruits, cotton fabrics, rice, wool, tobacco, arms, guns, cotton, drugs, and turquoises. The export of opium is about 10,000 boxes, valued at \$3,750,000, sent to Europe for medicine and to China for smoking. The export of silk is about 400,000 pounds; of tobacco, 12,000,000 pounds; of cotton, 10,000,000 pounds; of wool, 7,700,000 pounds. The exports of carpets are about \$740,000 in value.

**PERU**, a republic in South America. The legislative power is vested in a Congress consisting of a Senate, containing 48 members, and a House of Representatives, containing 109, elected for nine years by indirect suffrage. The right to vote is restricted to male Peruvians twenty-one years of age able to read and write, and either taxpayers, masters of a trade, owners of property, or heads of families. The President is elected by the vote of the nation for four years. The President in power at the capital at the beginning of 1895 was Gen. Andres A. Caceres, inaugurated on Aug. 10, 1894, whose election was the cause of a civil war.

The republic is 463,737 square miles in extent, with a population now estimated at 3,200,000, exclusive of 350,000 uncivilized Indians. The regular army numbers 2,400 infantry, 1,100 cavalry and artillery, and 2,400 gendarmes. The state railroads have a total length of 800 miles, and there are 1,408 miles of telegraph.

**Finances.**—The revenue is mainly derived from customs. The foreign debt is £32,000,000, for which and £23,000,000 of defaulted interest new bonds have been issued, secured in the railroads, mines, guano deposits, and lands administered by the Peruvian Company of London. The internal debt amounts to 31,572,500 soles, paying 1 per cent. and quoted at 4½ per cent. of the nominal value. The paper money is no longer legal tender, but is redeemable in internal bonds at the rate of 1 sole for 15 soles of paper money.

**The Civil War.**—When President Bermudez died suddenly on March 31, 1894, the second Vice-President, Justiniano Borgoño, an adherent of ex-President Caceres, who had placed Bermudez in the presidency and planned to succeed him, took possession of the Government, having the army behind him, while the first Vice-President, Dr. del Solar, a partisan of ex-President Pierola, withdrew to Arica, in the provinces occupied by Chili, and nominated a rival administration. Caceres had himself proclaimed Provisional President in May, and went through the form of being elected by Congress in August, 1894. Meanwhile the exiled Pierola returned to Peru and headed a rebellion. His cause gained rapid headway in the north and the

south, while he repaired to the center and raised an army for the siege of Lima, the capital.

In the beginning of 1895 the Cacerists at the capital were in sore need of money and supplies, and although they had the best-trained and best-equipped forces they could not count upon the loyalty of their troops. President Caceres was authorized by Congress to issue bonds, but there were few purchasers, even at 75 per cent. discount. He made prisoners of all the rich citizens of Lima who declined to subscribe, but soon set most of them free. The increase in the political arrests showed that the Pierolist cause was gaining ground at the capital, as it was in other parts of the country. The insurgents virtually held the northern provinces, and were in full possession of the center. They occupied several of the coast towns. Their bands were active in the vicinity of Lima. They could draw supplies from most of the productive districts. At the end of January they gained possession of Arequipa, the most important inland town in the south. The justice of their contention that Caceres was a usurper, whose pretended election was entirely irregular, and that the constitutional executive chief, until a lawful election could be had, was Pedro A. del Solar, appealed forcibly to believers in legality everywhere. Caceres lost so many of his soldiers by desertion that he impressed unwilling peons into the service. To raise money an excise duty of 3 cents a kilo on sugar was decreed on Feb. 12. A force that was sent to bombard and recapture Arequipa was compelled to give up the attempt. Some of the moderate Cacerists called a conference with the intention of requesting the President to resign in order to avert bloodshed and the possible sacking of the capital, but he prohibited the meeting. In the middle of February Pierola drew his lines closer about Lima and its seaport. For months he had been drilling the mountaineers for the attack upon the city. They were the best material for soldiers in Peru, and they were devoted to him, as he was a commander in whose abilities the men had faith and who was always with them, inspiring confidence and winning their affection by sharing their privations and dangers. Caceres promised his responding partisans that he would lead his troops out to meet Pierola, Pauli, and Durand, but he was afraid to do so lest his forced levies should go over to the enemy in front and the revolutionists gain the upper hand in Lima and fall upon his rear. North of Lima, in Piura, the Government and the rebel forces were evenly balanced, and farther south, while Cajamarca was held by the revolutionists, Col. Caceres held the force of Teodoro Seminario in check in the neighborhood of Chiclayo. Nearer the center Huarez and the ports of Huacho and Supe were held by the revolution, and so was the whole center outside of Lima and Callao, which were practically besieged by Pierola from the beginning of January, although the Government forces were as strong numerically as his own, each army numbering about 6,000. South of Lima the Government troops were kept constantly moving by the guerrillas around Pisco, and south of that place all was lost to the Government. In Puno and Moquegua the Pierolists were received with open arms by the population, as they had

been in Arequipa. When the regular siege of Lima began, on Feb. 19, the Government troops erected fortifications and planted guns. The attack was not made till March 17. The revolutionary troops advanced simultaneously in the night from various points. Favored by a fog, one division passed the Cacerist lines unobserved and penetrated to the center of the city, occupying the church towers and other commanding positions and continuing to advance until a line of communications was formed with the division that entered the city from the opposite side. Another division under Col. Pauli outflanked the Cacerist forces and occupied the towers of the Merced church. Pierola had 2,000 riflemen strongly posted at many points before it was light enough to see or be seen by the enemy. The battle in the streets began in the dark and raged till night fell. Outside the city other Pierolist forces engaged the troops that held the fortified positions. The fighting was resumed on March 18 at five o'clock in the morning and kept up till night, and on March 19 firing began again at dawn and was kept up till noon in a weak and desultory fashion, for the contending forces were reduced to a fraction of their original numbers and all who were left were physically exhausted. The Cacerists were thoroughly demoralized, for they were fired upon by citizens from their houses, partisans of Pierola who had kept arms concealed in spite of police searches. Drunken and barbarous from the first, and now despairing of the battle, they began on the third day to loot the stores and clubs and the houses of the wealthy into which they could force an entrance. The Government forces still held the plaza, the palace, and the fort of Santa Catalina. The Pierolists, still 2,000 strong, were prepared to continue the combat and to burn with petroleum or level with dynamite all obstacles to their progress. The leaders, however, having already won the victory, willingly agreed to an armistice of twenty-four hours when the diplomatic corps intervened to prevent needless carnage and destruction and the pestilence that the putrefying corpses of men and horses threatened to bring upon the city. Before the armistice expired a peace was arranged through the mediation of the papal delegate.

The articles were signed on March 21 by Dr. Luis Felipe Villavan, representing Gen. Caceres, and Enrique Bustamente y Salazar, in behalf of Nicolas Pierola, the terms being that Caceres should resign the presidency and retire to Ancón, and Pierola lay down the command of his army and withdraw to Chorillos, while a Provisional Government should be formed, consisting of 5 men, 2 to be nominated by Caceres, 2 by Pierola, and the fifth selected by the others or, in case of disagreement, by lot. The Provisional Government was to keep its powers no longer than was necessary to hold a general election and install a regular government.

Although the number engaged on both sides did not exceed 8,000, the number of men slain or mortally wounded in the two-days' battle was 1,875, and 1,553 were less severely wounded. The Government troops lost more than double the number that the revolutionary forces did, owing to the hostility of the people. In accord-

ance with the stipulation both armies withdrew from the city to camps outside. An urban guard of 2,000 men was organized to preserve order, composed largely of foreigners.

**The Election of Pierola.**—The Provisional Government was composed of Manuel Candamo, Ricardo W. Espinosa, Luis Felipe Villaran, Enrique Bustamente y Salazar, and Elias Malpartida. The military ranks granted up to date in either army were confirmed, according to the agreement, but the reorganization of the army was left to the coming Congress. The troops of Carceres received some pay from money advanced to the Provisional Government by the banks and were disbanded. Gen. Carceres did not go to the retreat assigned to him, but took refuge on a French war vessel at Callao, and was afterward conveyed away by a British man-of-war. The political prisoners that were starving in the jails of Lima and Callao were released immediately. The authorities took possession of all arms and ammunition. In the south, Gen. Mas, in the district of Cuzco, and the Cacerist commanders at Pisco and other places still refused to recognize the Provisional Government, but they made their submission before a month passed by. Gen. Mas, who had 2,000 men, remained defiant until after Gen. Pierola, who landed at Mollendo with artillery and cavalry for the purpose of chastising him, had a sharp battle with him for the possession of Cuzco. Import duties on iron, coal, and machinery, and export duties on cotton, India rubber, pitch, hides, cotton seed, sugar, and tobacco, which the Cacerist Government had imposed, were repealed.

Elections took place on July 7, but Pierola objected on account of some irregularity, and new ones were held on July 26, when the same candidates were re-elected. Nicolas Pierola was elected President without opposition for the term ending Aug. 12, 1899. The new Vice-Presidents are Guillermo Billinghurst and Augusto Seminario y Vascones. The new Government had to render satisfaction for the arrest, by Caceres, of a British vice-consul who would not subscribe to a forced loan, and to the German and Spanish governments for similar outrages committed upon their subjects by Gen. Mas in Cuzco. While the Provisional Government was still in authority some American Protestant missionaries went to Cuzco, causing great excitement and indignation among the people, and the local authorities finally expelled them in spite of the decision of Minister Candamo that Protestant worship was protected and that they had equal rights with Catholics. Bolivia demanded that her flag be saluted for a violation of her territory during the civil war, but the Peruvians resented this demand and the Government temporized and finally agreed to submit the question to the arbitration of some other American state.

President Pierola was inaugurated duly on Aug. 12, and on Sept. 9, after the assembling of the new Congress, which met on Aug. 30, he appointed the following Cabinet: Premier and Minister of the Interior, Antonio Bentin; Minister of Finance, F. Bresani; Minister of Foreign Affairs, Meliton Porras; Minister of Justice and Worship, A. Albarracin; Minister of



War and Marine, Col. D. J. Parra. On Dec. 1 a new Cabinet was formed, composed as follows: Premier and Minister of Justice, Señor Barrinaja; Minister of Foreign Affairs, Ortiz Zevallos; Minister of Finance, Señor Obin; Minister of War, Col. Ibarra.

### PHYSICS, PROGRESS OF, IN 1895.

**Constitution of Matter, etc. *Molecules.***—Stoney (London Royal Society, May 16) thinks that events go on within the molecules of matter that are so sluggish in affecting its pressure or temperature that only after millions of encounters does any manifestation of loss of energy by conduction become appreciable; while the same events act promptly and actively in other ways, as in chemical action or radiation. These events are those internal motions of the molecule in which during encounters there is some exchange of energy with the external or translational motions, but not a ready and quick exchange, while the same molecules may nevertheless exchange energy promptly and quickly with the ether by radiation. The author adds that electrons, for the most part associated with this class of motions, appear to be primarily concerned in every chemical reaction and in all the phenomena of radiation. Sutherland ("Philosophical Magazine," January), in an article on the laws of molecular force, demonstrates that the expression  $m^2l$ , which occurs in the treatment of the attractions of like molecules, can be analyzed into two factors, which are the sum of numbers characteristic of the atoms composing the molecule, whose mass (referred to the atom of hydrogen) is  $m$ . This would analyze molecular into atomic attraction. Belief regarding the change of molecular structure with time in certain solids has caused some people to fear that no permanent standard of length can be made, but Rogers (American Association, 1895), as a result of comparisons that extend over five years, concludes that such fears are not well founded.

**Mechanics. *Absoluteness of Rotation.***—Mach, in his "Science of Mechanics," does not accept Newton's distinction between the relativity of motion of translation and the absoluteness of motion of rotation. A review of the work by Greenhill in "Nature," Nov. 15, 1894, has been the cause of wide discussion among mathematicians and physicists, from which it appears that many authorities consider that rotation as well as translation is only relative.

**Energy.**—Helm (Wiedemann's "Annalen," June), in a "Survey of the Present Position of Energetics," states that the two views of energy that are now struggling for supremacy are that which regards it as a mathematical abstraction and that which considers it to be a concrete reality, filling space and migrating continuously from place to place. One of the chief generalizations of energetics, according to this writer, is the following: "In order that something may happen it is sufficient and necessary that uncompensated differences of intensity exist." Allen (London Physical Society, March 8) has mathematically investigated the motion of what he calls "energy cells," which are the small volumes bounded by the walls of a tube of force and by the two neighboring equipotential surfaces. This motion differs according as the

charged or gravitating particles meet or separate. Mr. Allen calculates what he calls the "energy density" in the medium at the sun's surface, and find it equal to 16 horse-power hours per cubic centimetre.

**Elasticity.**—Fraas (Wiedemann's "Annalen") has measured the elasticity of solid gelatin solutions, and finds that in no case does the volume change by stretching. Part of the water could be replaced by glycerin, cane sugar, or gum arabic without making any difference, but common salt impaired both the elasticity and the strength of the gelatin sticks.

**Kinematics of Machines.**—Hearson (London Royal Society, May 16) shows that all machine movements, however complex, may be derived from a limited number of simple motions. By attaching to each kind of simple motion a suggestive symbol any complex machine motion may be exhibited by a graphic formula. Thus the turning motion of consecutive pieces when one revolves completely about the other is represented by the letter O, and swinging motion, when one turns through a limited angle relatively to the other, by the letter U. The geometrical limitations of the combinations of such motions are shown to be such that only 14 distinct types of these are possible. The author classifies all simple machine movements as follows: 1, Plane mechanisms, where the pieces move in or parallel to a plane; 2, spherical mechanisms; 3, cylindrical mechanisms; 4, conoidal mechanisms, where the axes of the swinging and turning motions neither meet nor are parallel.

**System of Pendulums.**—A system of 2 equal pendulums joined by an elastic thread has been studied by L. de la Rive ("Journal de Physique"), who finds that energy is periodically transmitted from one pendulum to the other. The period of this phenomenon equals the ordinary period of oscillation multiplied by a number that is proportional directly to the length and inversely to the section of the thread. After 10 or 12 periods the alternation of periods is scarcely perceptible, and in the end the pendulums tend to move like a rigid system, with constant tension of thread.

**Lissajous's Curves.**—Oosting ("Zeitschrift für den Physikalischen Unterricht") uses for the production of these curves 2 small mirrors attached respectively to vertical and horizontal stretched wires, the period being adjusted by screws carrying nuts mounted behind the mirror at right angles to the wire.

**Liquids. *Capillarity.***—Van der Mensbrugghe (Paris Academy of Science, Sept. 30) finds that the great theories of capillarity agree but imperfectly with the facts that are observed in evaporation. Most liquids evaporate spontaneously in air, hence: (1) The density of the superficial layer must decrease outward, contrary to Gauss's and Laplace's theories; (2) the mass of liquid has not an invariable volume, contrary to Poisson's theory; and (3) the superficial layer being continually renewed, is not in equilibrium, contrary to the theories of most contemporary analysts. The author has elaborated a theory which he regards as free from these objections. E. Kaiser (Wiedemann's "Annalen," December, 1894) has studied the mingling of masses of

liquid by observing the Newton's rings that form between films. Difference of potential hastens the mingling, and Kaiser's experiments show that it does so by increasing the pressure on the intervening air, forcing it out at the sides. With the films that he investigated fusion took place in 3.2 seconds with no potential difference, in 1.4 second with one Daniell cell, and in 0.4 second with 2. With more cells, fusion took place instantly and the films usually burst. Maltézos (Paris Academy of Science, Aug. 5), after a study of the so-called Brownian movement of small particles in a liquid, concludes that it is a capillary phenomenon. G. Quincke (Wiedemann's "Annalen," December, 1894) calls attention to the fact that the forms assumed by combinations of alkalis with oleic acid when brought into contact with water have a remarkable analogy with the configuration of various small portions of the stellar universe, such as portions of Orion, Virgo, and Coma Berenices.

*Critical Point.*—Pictet (Berlin Physical Society, Feb. 22) is of the opinion that substances must still be in the fluid state at the critical point, for the amount of heat that must be put into the substance, reckoning from absolute zero, is less than the latent heat of the liquid, and solid bodies do not separate from solution at the critical temperature, but do so on a further rise of temperature.

*Evaporation.*—Lehfeldt ("Philosophical Magazine," November) has deduced from thermodynamic considerations a formula representing the relation between the composition of a mixed liquid and that of the vapor that rises from it. This formula agrees reasonably well with experiment, though new data seem to be needed.

*Condensation.*—Wilson (Cambridge Philosophical Society, May 13) finds that in dust-free air there is still condensation into a cloud of fine drops after the expansion exceeds a certain critical amount, which point remains constant, no matter how many expansions are made. The ratio of final to initial volume at this critical expansion is 1.258, when the initial temperature is 16.7° C., corresponding to a fall of temperature of 26°.

*Solution.*—Linder and Picton concluded several years ago that there is no definite line to be drawn between suspension and perfect solution, the difference being only one of degree of aggregation. They have now ("Journal of the Chemical Society," February) strengthened their conclusion by finding that a mixture of a 2-per-cent. arsenious-oxide solution with hydrogen-sulphide water is not only diffusible, but can be filtered through a porous pot. Four grades of such mixtures or solutions have thus been obtained, of which the first contains aggregates that can be seen under the microscope, the second is invisible but not diffusible, the third diffusible but not filterable, and the fourth both diffusible and filterable, though it scatters and polarizes light. Lecoq de Boisbaudran (Paris Academy of Science, July 8) considers that all soluble substances belong to a continuous series, of which the members at one end may dilate on solution while those at the other may contract. Crismer ("Bulletin de l'Académie Royale de Belgique," No. 6) finds that the critical temperature of so-

lution is independent of the amount of either body present. It varies much from one body to another, but is constant for the same body, and for a mixture is sensibly equal to the arithmetical mean of those of the constituents. The surface tension of the lower of two liquids tends toward zero at this temperature and the separation meniscus becomes a plane, hence the temperature may be determined by an optical method. Arctowski (ibid.), by determining the solubility at very low temperatures of some organic compounds in carbon disulphide, finds that the point of fusion of the solvent appears not to be an essential point on the curve of solubilities, as supposed by Étard.

*Crystallization.*—Lecoq de Boisbaudran (Paris Academy of Science, April 22) shows that crystals may form at the bottom of a solution of greater specific gravity than themselves, the action depending on small variations of temperature. Baudrowski ("Zeitschrift für physikalische Chemie," November, 1894) has examined the light that certain salts emit during crystallization, and concludes that it is probably electrical, being due to the union of electrified ions.

*Gases. Hygrometry.*—A hygrometer based on a new principle is suggested by Dr. J. Verschaffelt ("Bulletin of the Belgian Royal Academy," Nos. 9 and 10). The hygrometric state of the atmosphere may be taken as the ratio of the vapor tension inside a solution to the highest possible vapor tension of water at the same tension, when the solution is neither evaporating nor condensing water from the air. Thus by moistening a weighed piece of blotting paper with a weighed quantity of a solution of a salt of known concentration, exposing to the air, and weighing again, the "equilibrium concentration," and hence the humidity, may be calculated.

*Kinetic Theory.*—Fitzgerald (London Royal Society, Feb. 7) has attempted to show that Maxwell's theorem of the equal partition of energy among the degrees of freedom of atoms is not, as has been generally held, inconsistent with the various internal movements indicated by gaseous spectra. This is due to the control exercised over the motion of the electrons on neighboring atoms by the intervening ether, so that if, say,  $10^6$  atoms are thus connected, the motions of their electrons might be defined by 3 co-ordinates, and "if the atoms were spheres there would be  $3 \times 10^6$  degrees of freedom plus the 3 degrees that define the motion of the electrons. Now, if the total energy be equally distributed among all these degrees of freedom, each atom will have only its share of the electro-motions, and its energy of external motion will only be diminished by  $3 \times 10^{-6}$  part owing to the existence of the internal motion of its electrons." Our calorimetric methods are not sufficiently delicate to detect this diminution. Liveing and Dewar (Paris Academy of Science, July 15) find that observation of the spectra of liquid air and oxygen do not bear out the theory that the increase of intensity of the bands as the square of the density of oxygen is due to the encounters of molecules of ordinary mass, which are more frequent as their free path is diminished. Mixtures of liquid air and oxygen



confirm the law of increase at low temperatures. Solid air shows practically the same character and intensity of absorption as liquid air. A thickness of 0.4 centimetre of liquid oxygen gives a much greater band intensity than 1.9 centimetre of liquid air.

*Viscosity.*—It has been noticed several times that the viscosity of a mixture of gases is greater than would be expected from that of each of its components. Thus the addition of a little hydrogen to carbon dioxide makes it more viscous, although the former gas is less viscous than the latter. The theory of this action has been worked out mathematically for the first time by Sutherland ("Philosophical Magazine," November), who finds it to depend on the difference of mass of the molecules of the mixed gases.

*Acoustics. Combinational Tones.*—Rücker and Edser (London Physical Society, March 22) find that under certain conditions difference and summation tones are capable of disturbing resonating bodies, and they regard this as settling the vexed question of the objective or subjective nature of these tones. In one case the resonator was a tuning fork whose vibration was observed by the method of the interferential refractometer. Dr. Burton, at the same meeting, described experiments with two organ pipes, showing that their combination tones varied with the relative distance of the pipes, the observer remaining at the same distance—a fact that argues for the objectivity of the tones.

*Comparison of Forks.*—Hallock (American Association, 1895) has devised a photographic method of comparing the pitch of tuning forks by clamping each fork before a manometric capsule, bowing it, photographing the flames, and then counting the relative number of vibrations.

*Vibration of a String.*—Cornu (Paris Academy of Science, Aug. 5) finds that the transverse vibration of a string, no matter how it is excited, is always accompanied by torsional vibrations. The actual vibration is complicated not only by this fact, but also by the usual want of symmetry of the strings about their axes.

*Heat. Calorimetry.*—Waterman ("Philosophical Magazine," November) has devised a calorimeter that is maintained at a constant temperature after the introduction of the heated body by means of cold water, instead of allowing it to rise in temperature and measuring that rise. This gets rid of the radiation error and eliminates the "water equivalent" of the vessel. The water is dropped in from an inverted copper cone surrounded by ice. For bodies of the same weight and the same initial temperature the specific heat is measured simply by the amount of ice-cold water necessary to cool them to the temperature of the room.

*Conduction.*—Quick, Child, and Lanphear ("Physical Review," July-August) find that the thermal conductivity of copper varies from 0.921 at  $-54^{\circ}$  to 1.059 at  $13^{\circ}$ , but the increase is more rapid for the temperatures below zero. The average value for the range  $-54^{\circ}$  to  $-13^{\circ}$  is greater than that for  $70^{\circ}$  to  $170^{\circ}$ , so either the results must be affected by some undiscovered source of error or the curve of conductivity has a maximum between  $-14^{\circ}$  and  $+70^{\circ}$ .

*Specific Heat.*—Violle (Paris Academy of Science, April 22) has measured the specific heat of

graphite at high temperatures, and finds that above  $1,000^{\circ}$  C. it increases linearly with the temperature. A gramme gives up 2,050 calories in cooling from volatilization to  $0^{\circ}$ , and M. Violle calculates from this that the boiling point is  $3,600^{\circ}$  C.

*Volume Heat.*—By this term E. H. Griffiths (Cambridge Philosophical Society, May 13) denotes the capacity for heat of equal volumes at different temperatures. He has calculated it in the case of aniline from the published results of observations, and finds it constant.

*Fusion.*—Le Chatelier (Paris Academy of Science, Aug. 12) finds that the accepted melting point of gold—that due to Violle, who made it  $1,045^{\circ}$  C.—is a little low. The error does not exceed  $20^{\circ}$ , and the experimenter advises that no change be made for the present in the pyrometer scales that are based on this melting point. Bruner (Paris Academy of Science, April 29) has studied the specific heat of superfused liquids and finds that thymol and paracresol give specific heats that increase with the range of temperature, when they are cooled without solidification to approximately the same extent below their melting points.

*Absorption.*—Friedel (Wiedemann's "Annalen," July) finds that when, in a chemical compound, hydrogen, oxygen, hydroxyl, or nitrogen are replaced by sulphur or a halogen, the transmittance of the solution is considerably increased. In homologous series the transmittance is regularly changed by every addition of  $\text{CH}_2$ , but the direction of the change depends on the other atoms. The absorptive power depends on the constituents and is independent of the size of the molecule. In isomeric compounds the diathermancy differs not only with the difference of atomic volume of the elementary atoms, but also with the difference of linkage among themselves.

*Radiation.*—A. M. Porter (London Physical Society, Jan. 11) finds that, contrary to the usual assumption, the "emissivity" or amount of heat that passes outward from unit area per second for 1 degree of excess of temperature is not independent of the size of the body, and also depends materially on the shape of the bounding surface.

*Temperature.*—Berthelot (Paris Academy of Science, April 16) has devised a method for the measurement of the temperature of gases that is independent of the envelope. It is based on a determination of the density of the gases by means of their refractive indexes as shown by interference fringes.

*Temperature of Greatest Density of Water.*—M. de Coppet ("Annales de Chimie et de Physique") has made a new and accurate determination of the temperature of greatest density of water, and finds it to be  $3.982^{\circ}$  by the hydrogen thermometer under a pressure of 1 atmosphere.

*Light. Absorption.*—Dufour and Brunner (Société Vaudoise; reported in "La Nature," Dec. 7) find from experiments on the opacity of carbon that a layer of lampblack  $\frac{1}{892}$  millimetre thick deposited on glass will not transmit the sun's light. To darken the whole earth, therefore, it would suffice to reduce to smoke a mass of  $\frac{3}{4}$  of a cubic kilometre of carbon. Merritt ("Physical Review," May-June) has determined the dependence of infra-red absorption upon po-

larization for quartz, Iceland spar, and tourmaline. The transmission curves of the ordinary and extraordinary rays were entirely different in all 3 cases, the difference being especially marked with Iceland spar.

*Refraction.*—Sir John Conroy (London Royal Society, June 20) has determined the refractive indexes of water at temperatures between  $0^{\circ}$  and  $10^{\circ}$  C., and finds that the index increases continuously up to the freezing point, while the rate of increase alters at about  $4^{\circ}$ , the point of maximum density, and that no formula that represents the variation as a function of the density only can completely express the facts.

*Photometry.*—Kurlbaum and Lummer (Berlin Physical Society) have made a determination of the unit of light that is based on the light emitted by white-hot platinum foil. To keep the temperature constant for a long period and to be able to re-establish it at any time the ratio of the total radiant energy from the foil to that transmitted by a medium was measured bolometrically. The medium chosen was a thin layer of water in a quartz cell. The errors amounted to 1 per cent., and were due chiefly to air currents on the surface of the foil.

*Spectroscopy.*—Wadsworth ("Astronomy and Astro-physics," December, 1894) has devised a way of rotating the prism of a spectroscope, where movement of the collimator or of the observing telescope is objectionable, in such way as to retain minimum deviation for the central ray in the field. A mirror having an angular motion equal to one half the change in angular motion of the minimum-deviation ray is introduced somewhere between the slit and the focal plane of the observing lens. In the spectro-bolometer it is in continuation of the back face of the prism. Langley, in a paper on "Recent Researches in the Infra-red Spectrum" (British Association, 1894), reviews the work now in progress at the Smithsonian Institution in this direction, especially the combination by composite photography of several linear representatives of the spectrum to form a single one, on which "we may expect to find only what is permanent and not what is accidental." He concludes that more than 2,000 lines will thus be mapped in the infra-red spectrum. Edler and Valenta (Vienna Academy of Sciences), in a paper summarized in "The Astro-physical Journal," May, have discovered two new spectra of mercury, obtained by passing an electric spark through mercury vapor that is distilling at low pressure through a capillary tube. If a large number of Leyden jars are in circuit, the spectrum has a great number of fine, sharp lines; if not, it becomes a series of bands with edges toward the red. The band spectrum corresponds to a slightly lower temperature than the line spectrum. Galitzin (Wiedemann's "Annalen," September) considers the molecular theory of the broadening of spectrum lines superior to those based on Doppler's principle, on Kirchhoff's law, or on damping, since it admits of a development based on the theory of molecular resonators. The broadening is a consequence, according to this, of forced vibrations produced by molecular collisions. The theory explains the unsymmetrical broadening and the influence of temperature and pressure. Evershed ("Philosophical Magazine," May) finds that the vapors of iodine,

bromine, chlorine, sulphur, selenium, and arsenic all glow by external heating, but give continuous spectra. Dense sodium vapor acts in the same way, but on a reduction of density it gives a discontinuous spectrum. The experimenter is satisfied that his precautions precluded the possibility of any chemical action, so that the spectrum was due to true external heating.

*Polarization.*—Landolt ("Sitzungsberichte" of the Berlin Academy, No. 38) has devised a simple method of obtaining lights of different wave lengths for use in polarimetric work by passing white light through absorption cells. The resulting light, though not actually monochromatic, gives a uniform tint in the field of the polarimeter if the rotation be less than  $20^{\circ}$ . R. A. Millikan ("Physical Review," September-October) has investigated the polarization of the light emitted by incandescent bodies, and finds that it is a minimum with rays emitted normal to the surface and a maximum with a grazing emission, which indicates that the vibrations are in a plane at right angles to the emitting surface. In the following issue he studies the phenomena qualitatively and finds a striking agreement between the measured amounts of polarization at different angles of emergence and those calculated from Cauchy's theory of metallic reflection on the assumption that the polarization is due to the refraction of rays coming from the interior on emergence. The agreement is especially good in the case of molten silver. The fluorescent light developed at the surface of uranium glass is polarized in much the same way, and the fact is explained similarly by the author. Uljanin (Berlin Physical Society, March 8) has investigated the polarization that is due to oblique radiation from silver, platinum, and black glass, and finds that curves arrived at by assuming that the radiation of the substance is determined by its refraction correspond well with those obtained by direct experiment, especially in the case of silver.

*Rotary Polarization.*—Rodger and Watson (London Royal Society, June 20) have attempted to determine in absolute measure the magnetic rotation of liquids at different temperatures, the effect of the chemical nature of the liquid on this property, and its correlation with other physical properties. They conclude that the usual measure of the molecular rotation, which involves the properties of water, is particularly ill suited for the purposes to which it is applied, since the behavior in water is exceptional and its rotation is small. In all of the 10 liquids that they examined, except water, the relation between rotation and temperature is linear, and the quotient of the rotation by the density diminishes with increase of temperature. Siertsema (Amsterdam Academy of Science), with currents of 35 to 65 ampères, has been able to obtain in oxygen a magnetic rotary dispersion of  $3^{\circ}$  to  $4^{\circ}$ . A series of measurements were also made on atmospheric air and values for nitrogen were deduced therefrom.

*Luminescence.*—E. Wiedemann and Schmidt (Wiedemann's "Annalen," April) draw an important distinction between physical and chemical luminescence. When there is a prolonged afterglow the phenomenon is probably chemical. Luminescence under cathode rays is always ac-



accompanied by chemical action. The same experimenters (*ibid.*, October) find that the luminescence of what Van't Hoff has called "solid solutions" of manganese sulphate in other sulphates depends little on the concentration, but much on the solvent. The lower the temperature the brighter the light. The spectrum is always a continuous one composed of one band. Pictet and Altschul ("Zeitschrift für Physikalische Chemie," Vol. XV, Part III) have studied phosphorescence at very low temperatures, and find that it does not take place below  $-65^{\circ}\text{C}$ . and that a phosphorescing substance cooled below this point ceases to glow, although the glow begins again when the temperature rises above this point. Knoblauch (Wiedemann's "Annalen," February) finds that there is a constant ratio between the intensity of fluorescence and the existing light, even when the intensity of the latter is altered in the ratio 1:6,400. Variation of the solvent has a great effect upon the various fluorescent bodies. Witz (Paris Academy of Science, Aug. 5) finds that lighting with a vacuum tube in circuit with a Holtz machine or a Ruhmkorff coil gives less heat with the light than any other known means; yet the energy expended per candle power is greater with the present apparatus.

**Dichroism.**—Behrens (Amsterdam Royal Academy of Sciences, May 25) has observed strong dichroism on flax and hemp fibers that have been dyed with Congo red, benzo-azurine, or with most other tetrazo dyestuffs that are used for dyeing cotton, whereas with naphthol orange, croceine scarlet, and similar dyestuffs no dichroism was observed. The phenomenon seems to be complex and not explicable by assuming a combination of ordinary absorption with common double refraction. The substances experimented upon are as follow, in the order of decreasing ease of becoming dichroic: Flax or hemp, straw, cotton or wood, silk. Wool can not be made dichroic. Their order of decreasing polarizing power is slightly different, as follows: Flax or hemp, silk, straw, cotton.

**Flames.**—König and Rubens (Berlin Physical Society, May 10) have investigated the distribution of energy in the spectrum of flames. In a triplex burner the energy of the extreme red was found to be more than a thousand times as great as that of the blue. The light from a cloudless sky had greater energy at the blue end, while that from a cloud had its energy nearly evenly distributed.

**Localization of Photographic Action.**—In 1890 Wiener demonstrated that in a photographic film the photographic action of a stationary light wave is a maximum at the antinodes of Fresnel's vibration vector. This has been generally held to prove that Fresnel's theory is correct, since the photographic effect should be greatest at the places where the vibration is most intense. Larmor ("Philosophical Magazine," January) holds, on the contrary, that there is no reason for supposing that the action would take place at the antinodes rather than at the nodes, and he endeavors to reconcile Wiener's observations with MacCullagh's theory. Using the language of the electric theory, the antinodes of the electric force, which tends to pull asunder the constituents of a molecule, are places where

decomposition, as in photographic action, takes place, while at the intermediate antinodes of the magnetic force the ultimate individual atoms may be disturbed, but there is no tendency to separation of constituents. Regarding the electric vibration vector as identical with Fresnel's and the magnetic with MacCullagh's we have a complete explanation of the facts with a reconciliation of both theories.

**Visibility.**—Pettinelli ("Nuovo Cimento"), in a new determination of the lowest temperature of visibility, finds that a cast-iron cylinder vanishes at  $404^{\circ}$ . Highly emissive substances, such as some gas-light mantles, became visible at the same temperature, but reflecting surfaces had to be heated  $20^{\circ}$  higher before they appeared to the eye, and glass still more. The smaller the surface, moreover, the higher the temperature required for visibility, which fact probably accounts for previous contradictory results.

**Wave-length Standards.**—The length of the metre has been exactly determined in wave lengths of the red-cadmium line by Michelson, at the observatory near Paris, at the invitation of the International Bureau of Weights and Measures. The mean of two wholly independent determinations gave as the equivalent of the metre in wave lengths 1,553,163.5, the deviation of each result from the mean being very nearly 1 part in 2,000,000 ("Travaux et Mémoires du Bureau Internationale des Poids et Mesures," xi, p. 84).

**Electricity. Resistance and Conductivity.**—Schuster ("Philosophical Magazine," February) deduces the following important laws regarding the measurement of electrical resistance: 1. With a given resistance and a given galvanometer, the ratio of the smallest change of resistance that can be detected to the sum of the given and galvanometer resistances is equal to the ratio of the smallest current that can be detected by the galvanometer to the maximum current which can be sent through the resistances. 2. With a given conductor and a given type of galvanometer, the smallest change per unit resistance that can be measured is given by twice the ratio of the smallest current that can be detected by means of a galvanometer of the same resistance as the one to be measured to the greatest current that can be sent through the galvanometer. 3. The highest percentage of accuracy with which a given resistance can be measured is directly proportional to the square root of the maximum electric work that can be done on it without overheating. Biernacki ("Journal de Physique," October) has devised a new method of measuring the resistance of an air gap during the passage of a spark. It is based on the principle that when, with a Hertzian resonator in unison with an exciter, the forced and natural vibrations interfere so as to destroy each other, the resistances of exciter and resonator must be equal. For a spark gap of 1 centimetre he thus found the resistance to be between 300 and 800 C. G. S. units, while for one of only 0.4 millimetre it was between 1,200 and 1,500. Not only does the resistance increase with diminution of the spark length—an unexpected fact—but other properties of the spark alter. A short spark is usually violet-colored and ramified, and a longer one is white and straight, with a sharp noise.

Sanford ("Physical Review," November and December) has extended his former observations on the dependence of resistance upon the surrounding dielectric, which have been severely criticised ("Annual Cyclopædia," 1893, p. 621, and 1894, p. 655). His original results have recently been verified qualitatively by Grimaldi and Catania. Further observations on silver and copper wires show that the amount of change of resistance differs with different samples of wire, but is constant in direction for the same material. Thus the resistance of copper was less in petroleum than in air, while that of silver was less in air. The behavior of a copper-plated silver wire was almost identical with that of pure silver. B. O. Peirce (American Academy) in experiments on the resistance of poor conductors, such as different kinds of wood and stone, obtained the following results in megohms:

MATERIAL.	Minimum.	Mean.
Mahogany .....	310	610
Hard pine.....	17	1,050
White pine.....	360	1,470
Vulcanized fiber.....	3	60
Slate.....	184	230
White marble.....	2,000	8,800

The wood was all well seasoned and the resistance was measured with the grain. Across the grain it was 20 to 50 per cent. higher. The stone was sun dried for three weeks before testing. Gin and Leleux (Paris Academy of Sciences, April 29) find that the resistance of saccharine solutions depends on the concentration and temperature, and is also a function of the current density. R. Colson (Paris Academy of Sciences) finds that Ohm's law does not hold in the case of the propagation of waves of high potential, as from the secondary of an induction coil, in high resistances, such as threads saturated with a solution of calcium chloride or capillary tubes filled with water. Tuma ("Wiener Berichte," June 14) has determined the resistance of copper, German silver, nickel, and iron wires for oscillating currents. The results agree approximately with the formulas obtained by Stefan, and for alternating currents of high frequency the agreement was more complete for nonmagnetizable conductors. For magnetic substances the variability of the permeability renders calculation illusory. With iron wire the resistance decreased as the current strength increased. J. W. Rodger describes in "Nature," Nov. 8, 1894, the experiments of Kohlrausch and Heydweiler on the electric conductivity of pure water, a constant for which widely different values have been found. They measured at 18° the temperature rate of change for a series of samples of water of different degrees of purity and also the conductivity of two samples of very pure water at -2° and 50°. Assuming that the observed conductivity was really the sum of that of pure water and a dissolved impurity, they made use of the theoretical rate of change at 18° to obtain the conductivity of absolutely pure water, which they find to be 0.0361 at 18°. The smallest value actually observed was 0.0404, so that the almost infinitesimal quantity of impurity present changed the conductivity by about 10 per cent. Warbrug Wiedemann's "Annalen," March) is of the opin-

ion that the alteration of conductivity that is produced by an electric current in aniline and similar bodies, and the convection phenomena that they exhibit, may all be explained by supposing them to be very dilute solutions of an electrolyte. The similar behavior of xylol, benzol, turpentine, etc., is probably due to the same cause. Sadovsky ("Journal de Physique," April), in investigations on the influence of magnetic fields on electrical resistance, finds that the difference in the resistance of bismuth observed with constant or alternating currents is measurable outside a magnetic field with a frequency of 30 a second, and can be detected in magnetic fields with a frequency of only 3 or 4. The difference depends on the frequency, and without a field increases with the frequency. Bismuth in strong magnetic fields offers to an increasing current a greater resistance, and to a decreasing current a less resistance than that for steady currents. The difference of the resistances to increasing and decreasing currents increases with the rate of change in the strength, and this difference is more marked with strong currents than with weak ones. The results can not be due to self-induction, or they would occur outside a magnetic field. Pringsheim (Berlin Physical Society, April 26), from experiments on the conductivity of heated gases, finds that the farther apart the electrodes the less the current, while with constant distance the current decreases with the time. Polarization was quite perceptible for a half hour after breaking the current. He concludes that the phenomenon is electrolytic. Vincentini and Cinelli ("Nuovo Cimento," Vol. XXXVI, No. 3) have experimented on the transmission of electricity through the gas surrounding a wire made red hot by an electric current. The results depend on the gas and show, in the opinion of the authors, that in the case of hydrogen the gaseous molecules that leave the surface of an incandescent platinum wire are positively electrified, their potential being about 0.25 volt higher than the mean potential of the wire. With air and carbon dioxide the excess is still greater, being about 1 volt. With hydrogen at a high temperature an inversion of the phenomenon takes place. J. J. Thomson (Cambridge Philosophical Society, Feb. 11) has devised a method of measuring the conductivity of badly conducting substances by placing a sphere of the substance to be measured within a coil that is traversed by rapidly alternating currents. A second coil connected in series with the first incloses an exhausted bulb. The introduction of the sphere into the first coil causes by induction a change in the currents, and hence an alteration in the glow of the bulb, by observing which the sphere's conductivity is obtained. Branly (Paris Academy of Science, April 22) shows that certain pairs of metals, as copper-zinc, have no contact resistance.

*Specific Inductive Capacity.*—Pellat ("Journal de Physique," November) has devised an instrument for measuring specific inductive capacity in either liquids or solids. It consists essentially of two attracted disk electrometers in which the two movable disks are rigidly connected, and the two attracting disks are electrically connected; one of the latter is movable by a micrometer screw. The two former are attached



to the arm of a delicate balance. The substance to be examined is placed between the fixed attracting disk and its movable disk, and the position of the movable attracting disk is observed. With this instrument the specific inductive capacity of mica has been measured from a plate only 0.013 centimetres thick.

*Condensers.*—Sheldon, Leitch, and Shaw ("Physical Review," May-June) find that certain types of platinum-sulphuric-acid cells, when charged to potentials less than the electro-motive force of polarization act as condensers, whose capacity depends upon the impressed electro-motive force as well as on the electrodes. Considerable hysteresis is present in the relation between potential and charge. These cells are of large capacity, but the high-temperature coefficient and low efficiency prevent their practical use.

*Electro-motive Force.*—Gouré de Villemontée (Paris Academy of Science, Dec. 24, 1894) has studied electric potentials in a uniformly moving liquid conductor, and finds that at speeds of 33 to 323 millimetres a second such movement produces no appreciable potential difference between two points in the liquid.

*Glow Discharge.*—A. Herz (Wiedemann's "Annalen," February) finds that the potential gradient in the positive unstratified discharge of a vacuum tube decreases with increase of the current, and also with increase of the tube's diameter. It increases with, but not as rapidly as the pressure. Mebius (ibid., March) finds that the straight lines that represent the relation between current and potential difference for different distances between the electrodes in a glow discharge in air are not parallel, the divergence increasing with the extent to which the air has been modified by the current. The changes are shown spectroscopically to be probably due to formation of nitric oxide.

*Dielectrics.*—Gouy (Paris Academy of Science, July 1) has investigated the apparent attractions and repulsions of electrified conductors in a fluid dielectric, and finds that they result (1) from mutual attractions and repulsions of charges, just as in a vacuum; and (2) from the hydrostatic pressure produced by the force that attracts the dielectric in the sense where the intensity of the field increases most rapidly.

*Primary Cells.*—Korda (Paris Academy of Science) has made a "thermo-electric carbon cell," depending on the fact that if barium peroxide is heated red hot in contact with carbon the oxide is reduced, and a difference of potential of about a volt is produced. Borehers (German Electro-chemical Society, see "Nature," Dec. 6) has produced an electric current by what he calls the "combustion" of carbon monoxide. He constructed a cell of which one plate was a carbon bell, the place of the other being taken by streams of the gas introduced through copper tubes. Oxygen was introduced within the bell, and an ammoniacal or acid solution of cuprous chloride served as electrolyte. An electro-motive force of 0.3 was obtained, corresponding to about 15 per cent. of the energy due to the oxidation of carbon.

*Storage Batteries.*—The recently introduced chloride battery possesses, it is claimed, the advantages of earlier types without many of their

disadvantages. A mixture of the chlorides of lead and zinc is formed into tablets, around which is cast a frame of antimonious lead. The chlorine and zinc are then eliminated, leaving a porous structure of pure crystalline lead of good conductivity and large exposed surface. The battery's capacity is large in proportion to its weight and to the space that it occupies. Lucien Poincaré (Paris Academy of Science) has endeavored to obtain a secondary battery with liquid metallic electrodes, with a view of reducing the losses that occur in the ordinary lead accumulator. He used mercury and a solution of a salt, forming an amalgam at the cathode. With the haloid salts of the alkaline metals he obtained an electro-motive force of 2 volts, an efficiency of nearly 90 per cent., and a capacity per kilogramme of about 10 ampère hours. The cells may be completely discharged without deteriorating in any way.

*Voltameter.*—Naber (London Physical Society, March 8) has devised an improved voltameter in which either the oxygen or the hydrogen can be collected separately and the level of the liquid inside and outside the burette can be equalized, obviating the necessity for correction for difference of level. Christiansen (Wiedemann's "Annalen," November, 1894) holds that electricity can not be generated by friction alone, but is due to chemical decompositions begun at contact and complete on separation. This view is confirmed by experiments on the contact of mercury with various insulating linings of a tube. Jaumann (Wiedemann's "Annalen," August) finds that the potential that leads to a spark discharge depends on several elements besides thickness and nature of dielectric, especially on variations of electric force which hasten the discharge and lower the necessary difference of potential. The spark gap is also affected by previous sparks and by a delay in discharging.

*Electrification of Air.*—Kelvin, Maclean, and Galt (London Royal Society, March 21) find that positive or negative electricity that is given to air by an electrified needle point can be conveyed through 3 or 4 metres of small metal tube and shown on a quadrant electrometer by a receiving filter. In general air electrified negatively when passed through a metallic wire-gauge strainer gives up some, but not a large proportion of its electricity.

*Alternating Currents.*—Pionchon ("Comptes Rendus," April 22) has devised an optical method for observing the characteristics of an alternating current. By viewing through a polariscope the changing field of light due to the passage of such a current through a coil that surrounds a suitable medium of transmission, and by using a stroboscopic method, the change can be caused to take place apparently as slowly as desired, and from it all the peculiarities of the current can be deduced.

*Electro-magnetic Waves and Radiation.*—Trowbridge and Duane ("American Journal of Science," April), from experiments on a new method of measuring the velocity of electrical waves, conclude that if it appears, as theory seems to indicate, that electric waves travel in air with the velocity of light, it may be that the latter velocity can be determined more accu-

rately by an electrical and photographic method than by the eye methods which have hitherto been used. The same experimenters (*ibid.*, August) find the velocity of electric waves traveling along two parallel wires to be  $3.0024 \times 10^{10}$  centimetres per second—a value that differs from the velocity of light by less than 2 per cent., and from the ratio between the 2 systems of electro-magnetic units by even less. Garbasso and Aschkinass (Wiedemann's "Annalen," November, 1894) have made a prism capable of refracting and dispersing electro-magnetic radiation by fastening resonators made of tinfoil on a series of parallel glass plates. The rays were deflected by angles differing with the wave length. They conclude from their experiments that the rays of electric force are not necessarily to be regarded physically as monochromatic, but as compound with as much justification as ordinary light. Helmholtz's theory of color dispersion acquires fresh support from their experiments. Yule ("Philosophical Magazine," April) has investigated the passage of a wave train from an oscillator through a conducting dielectric, and finds that the intensities of the reflected rays, the phase changes, etc., for damped wave trains reflected from such a plate differ very considerably in some cases from those for steady rays. Bjerknes (Wiedemann's "Annalen," January) concludes that in the phenomena called "multiple resonance" there are not as many stationary wave systems as there are nodal systems exhibited by the resonator, but that these periods are due to the resonator, which resounds to a simple oscillation at different points. The difference between electric waves and light waves he regards as lying in the fact that the former are damped, while the latter are maintained. Mack (Wiedemann's "Annalen") has demonstrated that electric waves are doubly refracted in wood, the velocity of propagation being different across and along the fibers. His experiment was analogous to the common optical experiment of restoring the light intercepted by 2 Nicol prisms with their principal planes at right angles by inserting a doubly refractory substance, as a tourmaline, between them. The Nicol prisms were represented by Hertzian concave mirrors with crossed focal lines and the tourmaline by a plate of wood 10 inches thick. Bjerknes (Wiedemann's "Annalen," May) has deduced several new laws of electric resonance. He finds that the secondary spark potential is proportional to the square of the period of the resonator, the magnetic or thermal integral effect to its cube, and the electric integral effect to its fifth power. Aschkinass (Berlin Physical Society, Nov. 30, 1894) finds that tinfoil gratings placed near a Hertz exciter show diminished resistance that is quite independent of the action of the light of the primary sparks. It persists after the cessation of the oscillations, but resumes its original value on percussion.

Mizuno ("Journal," College of Science, Tokio; reported in "Nature," Nov. 21) has experimented on the tinfoil grating as a detector. On exposing to radiation of about 60 centimetres' wave length 2 gratings whose resistances were respectively 130 and 232 ohms, the resistance fell in some cases as much as 11 and 42 ohms respectively, but it was nearly restored to its former

value by gentle tapping. The angle made by the plane of polarization of the radiation with the strips of the grating influences the resistance, which is greatest when the strips are perpendicular to the plane of the primary oscillations. The author concludes that the change is a mechanical one, and thinks that it may be due to small points on neighboring strips being brought into contact by the electric radiation. J. Klemencic (Wiedemann's "Annalen," December, 1894) explains the strong damping action of magnetizable metals upon electric oscillation by their circular or transverse magnetization, which crowds the oscillations into the surface layers more than with other metals. Hence the resistance of a magnetizable wire to electric oscillations is much greater than that of another wire of equal conductivity. Drude (Wiedemann's "Annalen," February) has investigated the relation between a substance's dielectric constant and the period of the electric waves that traverse it, which he calls the "electric dispersion." For alcohol, this quantity is normal and of the same order of magnitude as the optical dispersion. Water showed abnormal dispersion, and ebonite none at all that was perceptible. Ounes (Amsterdam Royal Academy, Sept. 28) reports as the result of experiments on electrical waves in water (1) that there is no dispersion for waves of the frequency of 27,000,000 to 97,000,000 a second, and (2) that the refractive index for waves of which there are several hundred millions a second equals the square root of the specific inductive capacity measured statically.

*Photo-electricity.*—Elster and Geitel (Berlin Academy) have constructed a photo-electric cell, consisting of an exhausted glass globe with an anode of platinum wire and a cathode of sodium-potassium alloy. When the cell was illuminated by light from incandescent zircon, polarized by passage through a Nicol prism, the current that passed through it when its terminals were connected to a 400-volt battery was found to depend in strength upon the angle of incidence of the light and on its plane of polarization, being greatest when the plane of polarization was perpendicular to the plane of incidence and when the angle of incidence was about  $60^\circ$ —the polarizing angle of the alloy. Branly (Paris Academy of Science), in studying the rate of loss of a charge from the effect of light in the case of badly conducting bodies, finds that when the light is from a body heated to a dull red the condition of the illuminating surface plays the chief part in the phenomena, the nature of the charged body having no effect. But if the light is rich in the highly refrangible rays, the effect depends on the illuminated body, but in nearly all cases this loses electricity. With wood, marble, cardboard, terra cotta, and hot glass, a negative charge is lost more rapidly than a positive one, while the opposite is the case with wood or metal varnished or coated with oil, paraffin, or tallow.

*Cathode Rays.*—Kowalski (Paris Academy of Science, Jan. 14) finds that the production of so-called cathode rays does not depend on the discharge from metallic electrodes across a rarefied gas; that they are produced chiefly where the primary illumination attains a considerable intensity; and that their direction of propaga-



tion is that of the current lines at the place where the rays are produced from the negative to the positive poles. Lenard (Wiedemann's "Annalen," October) finds that the ratio between the absorptive power for cathode rays and the density is the same for all media, whatever their state of aggregation, provided the cathode rays are of the same kind. Goldstein ("Sitzungsberichte" of the Berlin Academy, No. 38) notes some curious changes of color in salts under the influence of cathode rays. Potassium chloride, whose behavior is typical, assumes a heliotrope shade when caused to phosphoresce in a radiation tube and eventually turns violet. On heating, the color becomes blue and finally white. Under ordinary conditions the hue fades gradually, disappearing in about a week. The author thinks that neither impurity nor chemical decomposition will explain the phenomena, and inclines to the opinion that a physical modification is brought about by change of position and motion of the molecules, due to the radiation.

*The Hall Effect.*—Lebret (Amsterdam Royal Academy of Science, April 18) finds that the Hall effect is dissymmetrical in bismuth under certain circumstances, when the primary electrodes are not attached in accordance with 2 perpendicular directions that exist in every plate. Van Aubel (Berlin Physical Society, April 26) has investigated the Hall effect in thin layers of bismuth deposited electrolytically. He explains the asymmetry of the phenomenon on reversal of the magnetic field as due to the influence exerted by that field on the metal's electric conductivity. Wind (Amsterdam Academy of Science) supposes the electric current to consist of 2 components of unequal electromotive force—a current of conduction and a displacement current. This hypothesis accords with observation, provided we suppose that the specific resistance of metals for very rapid periodic currents exceeds that for continuous currents.

*Electric Arc.*—Lehmann (Wiedemann's "Annalen," June) finds that there is no fundamental difference between the arc and discharges in rarefied gases, and that the current travels not only through the arc proper, but also through the surrounding auricle. L. Thomas (Paris Academy of Science, Oct. 29, 1894) finds that the voltaic arc between carbons that contain metallic salts consists of a nucleus surrounded by an envelope, the former giving band spectra due to hydrocarbons, and the latter metallic line spectra due to burning of dissociated salts in passage from the positive to the negative pole. Deslandres (Paris Academy of Science, June 10) has made a spectroscopic study of the carbons of Moissan's electric furnace, and finds that the carbon growths on the negative pole are of a high degree of purity, owing to the dissipation of the more volatile impurities at the high temperature that is obtained. Wilson (London Royal Society, May 30) has investigated the effect of gaseous pressure on the temperature of the crater of an electric arc light, and finds that as the pressure increases the temperature decreases, instead of increasing, as it would if the carbon in the crater were at the boiling point. He concludes that the temperature of the crater, like that of an incandescent filament, depends

on how much it is cooled by the surrounding gas. These experiments are in accord with the belief that the Sims photosphere at 8,000° contains clouds of solid carbon particles, which it could hardly do if carbon boiled at the temperature of the arc or 3,500°.

*Electrolysis.*—Andreoli ("Le Génie Civil," June 29) has described what he calls indirect or secondary electrolysis of a liquid. In a bath of three compartments separated by porous porcelain he places two conducting liquids, one in the two end compartments and the other in the middle. If the electrodes are now immersed in the end compartments, the liquid therein is decomposed, while the other liquid remains unchanged. If, however, in addition, one or more metallic plates are immersed in the central compartment, without connecting them with either pole, the middle liquid is decomposed, while the end ones remain unaffected. J. J. Thomson ("Nature," Sept. 5), in experiments on the electrolysis of gases, finds distinct evidence of polarization, as in liquids. The difference in the spectra at the two electrodes when a discharge passes through some elementary gases is explained by the author as due, partly at any rate, to the difference in the properties of a positively charged and a negatively charged atom. Myers (Wiedemann's "Annalen," July) finds that the gases dissolved in the electrolyte of a silver voltameter influence the amount of silver that is deposited. Air lessens it about 1 per cent., and carbon dioxide still more, while nitrogen affects it less.

*Magnetism. Magnetization.*—Curie ("Journal de Physique, June, *et seq.*") has examined the magnetic properties of substances in fields of from 25 to 1,350 C. G. S. units and at temperatures in some cases of 15° to 1,370° C. The bodies were coarsely pulverized and placed in glass bulbs. On the magnetism of diamagnetic bodies, bismuth and antimony excepted, temperature was practically without effect. Fusion and allotropic modification also have no effect except with selenium and phosphorus. The susceptibility of bismuth increases steadily with the temperature up to the melting point, when there is a sudden rise. After fusion it remains constant and nearly at zero. With solutions of paramagnetic salts the susceptibility varies inversely as the absolute temperature. Glass is feebly diamagnetic when cold, but strongly so when hot. The author regards glass as a mixture of a diamagnetic substance that is unaffected by temperature and a small quantity of a paramagnetic substance whose magnetism weakens as the temperature rises. The susceptibility of iron at first decreases, but between 950° and 1,280° it is almost constant, and it then suddenly increases by about 50 per cent., afterward gradually decreasing up to 1,365°. M. Curie explains this by supposing iron to behave like any other paramagnetic body up to 860°, and then to begin to change into a second allotropic form, completing the change at about 920°, and remaining in the new form to 1,280°, behaving like such a body as oxygen or palladium. At 1,280° there is a sudden reversion to the primitive condition. Mordey (London Royal Society, Jan. 17), from experiments on slow changes in the magnetic permeability of iron, concludes that such changes

are not due to fatigue caused by reversals, and that neither magnetic nor electric action are necessary to produce them, but that they result from long-continued heating at a low temperature, being greater if the heating is accompanied by pressure and not occurring when the rise exceeds a few degrees. Schmidt (Wiedemann's "Annalen," May) finds that steel follows weak magnetizing forces more quickly than iron. For fields less than 0.06 C. G. S. units the susceptibility of soft steel is to that of iron in the ratio of 4 to 3. For fields of one unit the susceptibilities are nearly equal, but for greater fields that of iron is the greater. Weiss (Société Française de Physique) finds that the permeability of crystallized magnetite varies with the inclination of the magnetizing field to the crystallographic axes. If the results are expressed by drawings from a given point radii vectors of such a length that each represents the magnetization of the specimen in its own direction when saturated, the surface in which all the ends lie is a cube with rounded edges and slightly hollow faces. These facts seem to show that the theories that regard magnetization as the result of the orientation of particles of fixed magnetic moment are insufficient to explain the magnetization of crystals.

*Elongation.*—Moore ("Physical Review," November to December) finds that the maximum elongation produced in iron wire by magnetization occurs at an intensity of about 1,200. Beyond this point the elongation diminished.

*Induction.*—Lecher (Wiedemann's "Annalen," February), in a paper on unipolar induction, discusses the question whether, when a cylindrical magnet turns around its axis, the lines of force are stationary, as Faraday thought, or turn with it, as maintained by Tolver Preston and others. Previous experiments, according to the author, may be interpreted either way, but some recently performed by himself show that the former view is the correct one. Hopkinson (Royal Institution lecture) suggests that, since in an electromagnet as large as the earth the reversal of the current in its coils would cause disturbances that would require thousands of millions of years to reach their maximum value at the center, it is conceivable that the earth's magnetism may be due to currents in its material sustained by its changing induction, but slowly dying away.

*Electro-magnetic Pulling Force.*—Weber (Wiedemann's "Annalen," January) finds that an iron wire whose length is very great relatively to its thickness experiences a pulling force proportional (1) to the intensity of the field, (2) to its magnetization, and (3) to its section, when its end is in a magnetic field and its axis is parallel to the force lines. When lying across the force lines it experiences a force similar but less in a ratio that is about 100 in moderate fields, but quickly approaches unity as the field grows in strength.

*Magnetism and Elasticity.*—Bock (Wiedemann's "Annalen," March) finds that by magnetization the constants of elasticity of soft iron are altered by an amount not exceeding 0.5 per cent. Flexure and torsion diminish, and the ratio of sectional contraction to longitudinal expansion increases. Iron becomes more incompressible in the magnetic field.

*Mirrors of Magnetism.*—Thompson and Walker ("Philosophical Magazine," February) finds that a plate of iron gives a magnetic image analogous to the optical image produced by a mirror, and geometrically identical with it.

*Direction.*—Lagrange ("Bulletin of the Belgian Royal Academy," No. 1) states that in practice the orientation of a magnet does not depend alone on the direction of the lines of force of the field, as it should by theory, but also upon the strength of its magnetization. He suggests that this is due to some unknown cause, perhaps to a "circulation of the ether."

*Miscellany. Suspension for Physical Instruments.*—Julius (Wiedemann's "Annalen") uses for this purpose a small circular table suspended by 3 vertical wires. The center of gravity is brought into the plane of the table by a movable weight attached to a rod projecting downward. Any lateral displacement of the upper ends of the wires will start waves down them, which will perceptibly affect the table only when the period of the disturbance coincides with that of the oscillation of the table about the point of suspension, and even then the axis remains vertical.

**PHYSIOLOGY.** In the concluding part of a lecture on the work of Carl Ludwig, Dr. Burdon-Sanderson has given a brief summary of the doctrine of vitalism as it now presents itself in the form of "neovitalism." The author pointed out that the principle which Ludwig and his contemporaries advanced in the middle of the century as fundamental in physiology—that no explanation of any observed process or event was to be accepted excepting that which consisted in referring it to chemical or physical laws—was now generally admitted, but was then a new one. Before that the current teaching, with exceptions, was in the opposite direction. It was not denied that, in general, things went on in the body as they did out of it; but whenever a phenomenon could not be explained on this principle it was regarded as legitimate at once to have recourse to the hypothesis of a vital force as a way out of the difficulty. A movement had recently sprung up in Germany under the name of neovitalism which at first sight seemed to return to the old position. Several writers had shown a tendency to follow it, and it was the subject of one of the addresses at the Lübeck meeting of the German Association of Naturalists and Physicians. On comparing the position of the neovitalists with the doctrine current fifty years ago, there appears to be a considerable difference between them. There is, in truth, no revival of the hypothesis of a vital force; for it is recognized that if the word force is used to mean something that manifests itself by measurable effects, there is no indication that any force, except such as the physicist recognizes, is in operation in the organism. In the position now taken it is pointed out that in certain recent instances processes of life which were at first regarded as entirely physical or chemical do not conform so precisely as they were expected to do to physical and chemical laws. One of these which is especially worthy of attention is that of the lymphatic system. It had appeared from the investigations of Ludwig and his pupils that the efficient cause of the



movement of the lymph, like that of the circulation, was mechanical. But Heidenhain found in 1890 that the process of lymph formation did not appear to go on in strict accordance with the physical laws by which leakage through membranes is regulated. The neovitalists supposed, to account for this departure, a function of cells or protoplasm—living beings—which, being placed at the inlets of the system of drainage, let in less or more in obedience not to physical laws, but to vital ones, to internal laws which are special to themselves. The explanation is not sufficient, because, while the activity of the cells in the processes of the animal organism is generally recognized, as it was before the neovitalism appeared, the question as to how they work is still not answered. The problem of lymph formation has been vigorously attacked since 1890, among others by Dr. Starling, of Guy's Hospital, who, by sedulously working out the conditions under which the discrepancies between the actual and the expected had arisen, has succeeded in untying several knots.

The relations of physiology and medicine were defined in an address before the Physiological section of the British Medical Association, by Dr. David Ferrier, who said: "In former days few, if any, would have been found prosecuting the study of physiology who were not also engaged in the actual practice of medicine or surgery. Things, however, have greatly changed. Owing mainly to the division of labor, which the progress of knowledge has rendered a necessity, physiology has become increasingly technical, and tended to separate itself more and more from medicine in its practical aspects. Hence there has grown up a generation of physiologists who have little interest or sympathy with the practitioners of medicine, while we have still, and always have had, a class of practitioners who, though acknowledging physiology to be one of the institutes of medicine, say farewell to its problems and methods when once they have passed their examinations. In both extremes there lies great danger to the best interests of the science of physiology and the science and practice of medicine. The practice of medicine offers not infrequently rare conjunctions of symptoms, and valuable opportunities of research, too often wasted, which a little physiological training on the part of the practitioner might often have turned to good account; and the necessities of practical medicine have been the most fertile source of inspiration of physiological experiment. Much of what might otherwise have remained as vague surmise or, at most, plausible hypothesis, has been raised to the level of verified fact by well-conceived and often simple physiological experiment. The experimental method is, as it were, the keystone of the arch; indispensable, indeed, to the security of the structure the foundations of which have been laid in clinical observation."

**Respiration.**—The investigation of the relation of the respiratory exchange of cold-blooded animals to temperature by J. M. Vernon was made to test the validity of the supposition that the metabolism of these animals, contrary to what is the case with the warm-blooded, varies uniformly with the temperature. Measurements of the carbonic acid evolved by frogs were made

at temperatures from 0° to 30° C. The author finds that the carbonic-acid evolution by intact frogs on gradual warming varies within narrow limits from 2° up to about 17.5°, but above this point it increases rapidly with the temperature. On cooling, it, as a rule, becomes equally constant from about 17.5° to 12.5°, or 10°, and then decreases uniformly with the temperature. In curarized frogs and frogs with their bulb injured the carbonic-acid discharge increases uniformly with the temperature. If frogs be warmed and cooled rapidly several times, the curves of carbonic-acid evolution subsequently obtained are either perfectly uniform or show abnormally marked changes at varying temperatures. The curves do not become normal again for several days after. The respiratory quotient of winter frogs in which the bulb has not been injured is about 0.63; that of frogs with the bulb injured, about 0.45; and that of curarized frogs and those subjected to rapid temperature changes, about 0.5.

From his studies of the path of the respiratory impulse from the bulb to the phrenic nuclei, W. T. Porter deduces the following theory of crossed respiration: The respiratory impulse descends the lateral tracts. The fibers which convey it end in terminal arborizations at the level of the phrenic nuclei. The dendrites of every phrenic motor cell may be divided into 2 groups: the one group is composed of dendrites which lie in contact with the terminal branches or end arborizations of the descending respiratory fibers of the same side of the cord; and the other group is composed of relatively few dendrites, and these cross in the protoplasmic commissure to the opposite side of the cord and lie in contact with the end arborizations of that side. The end arborizations of the descending respiratory fibers of each side are therefore in contact with dendrites of different origin—first, with numerous dendrites from the phrenic cells of their own side of the cord; and second, with relatively few dendrites from the phrenic cells of the opposite side. The greater part of each descending respiratory impulse is discharged into the phrenic cells of the same side, because the dendrites offer less resistance to the passage of a nervous impulse than is offered by the relatively small number of dendrites which have crossed the median line from the phrenic cells to the opposite side. The remaining smaller part of the descending respiratory impulse is discharged into the crossed dendrites, and is conducted by them to the phrenic cells of the opposite side. This smaller part of the impulse is, however, not sufficient, under ordinary circumstances, to cause a contraction of the opposite half of the diaphragm. Only when the crossed impulse is unusually strong or when the irritability of the phrenic cells is increased can the crossed impulse set this side of the diaphragm contracting. The section of one phrenic nerve interrupts the ordinary respiratory part of the same side, and a greater portion, perhaps the whole descending impulse of that side, passes through the crossed dendrites into the phrenic cells of the opposite side. The impulse reaching them is now strong enough to call forth contractions in the half of the diaphragm innervated by them. The established

facts contained in this hypothesis are: The descent of the respiratory impulse in the lateral tracts; the crossing of the impulse at the level of the phrenic nuclei; the ending of the respiratory fibers, like other conducting fibers, in terminal arborizations; and the different course of the dendrites of the motor cells to the cervical region, the majority remaining on the side of the cord where they had origin, the minority crossing in the protoplasmic commissure to the opposite side of the cord.

In the method of observing the effect of rapid changes of external temperature on the discharge of carbonic acid, M. S. Pembrey finds a good means of testing the power of heat regulation in animals, provided that the temperature of the animal, the amount of muscular activity, and the condition of the cutaneous circulation are at the same time taken into account. In newly born animals the power of heat regulation varies according to the development of the animal at birth. Young animals, such as mice, rats, and pigeons, which are born blind, naked, and helpless respond to external changes of temperature in a way somewhat similar to that seen in cold-blooded animals; the variations in the respiratory exchange and the temperature of the animals are in the same direction as the changes of external temperature. These young animals can not regulate their temperature. Young animals, on the other hand, such as guinea pigs and chickens, which are born in a condition of high development and with protective coverings are able even at birth to maintain a constant temperature, provided that the changes in external temperature are not excessive. In the first class of animals the gradual development of the power of heat regulation can be followed. The activity of the animal has to be considered. In adult warm-blooded animals and in newly born animals like the guinea pig and chick a low external temperature increases the activity of the animal. In young animals which only imperfectly regulate their temperature muscular activity is often most marked and maintained at the higher temperatures. The first effect of a fall of temperature is often, it is true, to make the animal active, but its movements soon become feeble, and as regards their purpose are of a similar nature to shivering. The development of the power of heat regulation proceeds simultaneously with the development of the nervous and muscular systems. At the same time the relation of the cutaneous surface to the mass of the young animal and the presence or absence of protective coverings are factors, but only of secondary import.

It has been found by John Haldane in the course of his inquiries into the origin and action of the suffocative or poisonous gases met with in the air of coal mines that the poisonous action of carbonic oxide diminishes as the oxygen tension increases, and *vice versa*. At a tension of two atmospheres of oxygen this poisonous action is abolished in the case of mice. The disappearance of the poisonous action is due to the fact that at high oxygen tensions the animals can dispense entirely with the oxygen-carrying function of hæmoglobin. The poisonous action of carbonic oxide is entirely due to its

power of combining with the hæmoglobin of the red corpuscles, and so putting them out of action as oxygen carriers.

**Circulation.**—Contrary to the view that has prevailed since the time of Harvey, J. B. Haycraft holds that the impulse of the heart against the chest wall is diastole, and not systole; and that it is the effect of the force of gravity acting upon the flaccid and passive, but rapidly refilling ventricle from which the pressures of external supporting structures have been removed by the experimenter in his attempts to inspect its action. He contends that in systole all diameters increase, and that when the lungs are inflated so as to give something like their normal support to the heart, it does not twist from left to right, and thus does not strike the chest wall with the apex of the left ventricle.

Experiments on the effect of gravity on the circulation, continued by Leonard Hill, of London, illustrate the quickness with which the pressure alters with even slight changes of bodily position. Turning an animal upon its back, lowering or raising its head, placing it upright, and other changes affect the arterial pressure to a marked degree. Prof. Hill has further shown that an abdominal bandage, by merely restricting the blood supply to the lower viscera, increases beneficially the vascularity of brain and muscles.

By the application of Von Basch's very delicate sphygmomanometer, Van Ziemssen has found that the normal tension in the temporal artery is from 80 to 110 millimetres of mercury. In a case of arterio-sclerosis with cardiac hypertrophy, it rose to from 180 to 210 millimetres, and in a case of valvular insufficiency fell to 50 millimetres, of mercury.

The origin of the blood corpuscles is referred by M. Wernicki to the eosinophile layer of the cancellous tissue of bone, the granules of which receive a coating of hæmoglobin at the spleen, and then constitute the hæmatoblasts of Hayem. Dr. Sacharoff is understood to hold a similar view. As against it Siabocchio sets the fact that the rays, the blood of which contains a large proportion of eosinophile cells, have no bones, and therefore no cancellous tissue, Wernicki thinks that all the white corpuscles have the same origin, that they are short-lived, and that they after escaping from the cells by a diapedesis nourish the bones.

The views of Keller, expressed several years ago, as to the constancy of the absolute quantity of blood in the cranial cavity are incidentally supported by the experiments of Bayliss and Hill to determine the relations between the pressure in the cranial cavity and the blood supply to the brain.

Results of much interest have been obtained by W. Halliburton, S. W. Pickering, and T. G. Brodie in experiments on intravenous clotting resulting from intravenous injection of certain artificially made colloid substances. These compounds closely resemble proteids in their chief reactions. Some of them contain phosphorus, while others are destitute of it. It is anticipated that this line of research may cast light on intravenous clotting from disease, and on that induced by the venom of snakes.

The studies of W. Hannsen on the effects of



defibrinating blood and the act of coagulation upon the blood corpuscles indicate that many of them are destroyed in these processes. The proportion of the uninucleated corpuscles differs from that of the multinucleated.

Dr. Cohnheim reports upon experiments on injecting solutions of sugar into the blood vessels, in support of his views as opposed to those of Heidenhain on the formation of lymph. The results were the same as on the injection of salt solutions. The amount of sugar in the blood rose and fell very rapidly, whereas it rose and fell very slowly in the lymph. The maximum of sugar observed in the lymph was equal to the maximum met with at an earlier stage of the experiment in the blood. The solid constituents of the blood became less after the injection, and then increased slowly to the normal; in the lymph, on the other hand, they increased at first and then became less. After the injection of sugar the blood capillaries of a frog's web were considerably dilated, and the circulation quickened. Dr. Cohnstein interpreted these results as indicating an initial passage of water from the intercellular spaces into the blood vessels, followed at a later stage by a return filtration into the lymph. He had also observed a diminution in the secretion of bile after the injection of sugar, and attributed this to compression of the bile capillaries resulting from dilation of the blood capillaries.

A new method of studying the functions of the cell described by Dr. C. Leonard, and applied by him especially to the examination of the movements of the red and white blood corpuscles, consists in making a consecutive series of instantaneous photomicrographs of the same microscopic field, taken at different intervals, so that a comparative study of the series can afterward be made.

By injecting a pigment into a vein, Anderson Stuart has measured the time occupied by, for example, a blood corpuscle in making the circuit of the body, and estimates it, for man, to be fifteen seconds.

**Digestion.**—Leaving fresh fibrin in strong saline solutions, Dr. A. Daustre found after a certain time 2 globulins in the solution, one coagulating at 54° C. and the other having the properties of serum globulin; proteose and true peptone were also present. This action of saline solutions on fresh fibrin can be divided into different stages. If fresh fibrin be submitted in the same manner to the action of the digestive juices the same results are produced. It is, then, proper to speak of a "saline solution" of fibrin. Fibrin submitted to the action of oxygenated water and to that of micro-organisms gave the same results. When gelatin is similarly treated gelatoses are produced and the gelatin loses its power of contraction.

Speaking of the formation of uric acid in man, Dr. Weinrand said, in the Physiological Society of Berlin, that after the view that the excretion of uric acid is in direct relationship to the proteids of the food had found no support from the experimental side, the theory had been propounded that it related to the breaking down of the leucocytes. This view was supported by experiments in which the administration of nuclein and xanthin to man had in-

creased the output of uric acid; but, on the other hand, similar experiments on dogs had always yielded negative results. The speaker had experimented on several individuals by substituting thymus gland, rich in nuclein, for the ordinary flesh of the food. The increased excretion of phosphoric acid in the urine showed that the nuclein was largely resorbed and a constantly large increase in the excretion of uric acid was at the same time observed. The latter disappeared again when ordinary flesh was substituted for the thymus gland. Apart from theoretical considerations, it appears that foods rich in nuclein or xanthin should be avoided by patients suffering from excessive formation of uric acid.

Analysis of the bile of 115 children, made by Dr. Sommerfeld, shows that in comparison with the bile of adults it contains more water and mucin and less bile salts. It contains no urea or epithelial sulphates, and in the case of children who had died of diphtheria it was free from bile salts. Examination of the urine of children suffering from various forms of nephritis showed that it contained an abnormally large amount of xanthin compounds which could not be accounted for by any breaking down of epithelial cells or blood corpuscles.

In experiments made by Dr. Vaughn-Harley to determine the relation of the pancreas to the absorption of fat in dogs, the animals were kept fasting for two days and the bowels were daily washed out with an enema of hot water, a small glycerin enema being given afterward to effect the expulsion of the water. On the third day the pancreas was removed under an anæsthetic, the enemata being continued for two days. These animals were compared with others that were intact. The animals of each set were then supplied with a measured quantity of warm milk, and after a number of hours, that varied in different cases, the animals were killed and the entire contents of the stomach and intestines were separately analyzed. In the intact animals the maximum rate of absorption of fat occurs about seven hours after the ingestion of food, for normally a dog absorbs from 9 to 31 per cent. of the total fat given in from three to four hours, from 21 to 46 per cent. in seven hours, and 86 per cent. in eighteen hours. In a normal dog the passage of fat from the stomach varies with the individual as well as with the time allowed for digestion, but in eighteen hours the whole has entered the intestines. In dogs that have had the pancreas removed, the quantity of fat given is not only again recovered, but a surplus is found which is probably derived from the intestinal secretion or excretion. The author also found that the capability of passage of fat from the stomach is very much delayed by the extirpation of the pancreas, such dogs passing in several hours only from 9 to 22 per cent. through the pylorus instead of, as in normal dogs, about 86 per cent.

The splitting of the casein molecule that takes place in digestion is found by Drs. E. Salkowsky and Hahn to be due to the specific action of pepsin. It appears that while one part is dissolved and absorbed, the other part remains insoluble as paranuclein.

The glycolytic ferment contained in the blood

has been examined by Harburger, who finds that it converts starch into sugar much more slowly but as effectively as the salivary, pancreatic, or intestinal ferments. Its activity, according to J. Abelous and G. Biarmées, differs in different animals and at different ages. Harburger names it glycace, a ferment which has hitherto been found only in plants.

The investigations of Dr. McKechnie, of Talawakela, Ceylon, on the action of tea upon the digestive organs were carried on with test tubes, while a glycerol extract of pepsin was used as the digestive fluid and beef fiber and albumen as the aliment. From the results of the experiments, which are described in detail, the author is led to the opinion that the tannic acid is not the injurious agent in the retarding of digestion by tea, but the injury is caused by some of the less soluble extractive matters; also that the action of tea is not so injurious as some writers think it is. The character of the action depends greatly on the method of infusing. Long-infused teas seem to extract some substance, probably an alkaloid, that has an inhibitory action on the nerves of the stomach.

**Glandular System.**—A secreting organ is defined by Edward A. Schäfer as one which separates certain materials from the blood and pours them out again, sometimes after effecting changes of some sort upon them, usually upon external surfaces, or at least upon surfaces which are connected with the exterior. There are, however, some secreted materials that are not poured out upon an external surface, but are returned to the blood. These may be termed internal secretions, and they are of no less importance than the ordinary or external secretions. The name of "ductless glands" has been applied to those secreting organs which have been believed to furnish only internal secretions. Such secretions are, however, furnished to a greater or less extent by some of the ordinary glands, and by other parts of the body. Thus the liver and the pancreas are as essential to life by virtue of the internal secretions which they furnish to the blood as by their external secretions, and the entire removal of either cause death, which is due to the removal of the influence they exert upon the metabolism of the body by the loss of their internal secretions. So too does the entire removal of the kidney; although life is sustained if a small portion of kidney substance is left. This is true also of the pancreas, the internal secretion of which has been found to prevent the excessive formation of sugar in the blood and the urine. The functions of the thyroid gland are still undetermined, but facts are cited by Dr. Schäfer which seem to prove that it yields an internal secretion which effects a useful purpose within the body, and that the effects that follow thyroidectomy or removal of the gland—altering the gaseous exchanges so that the animal deprived of it can no longer react to changes of temperature—are probably due to the loss of that secretion. The pituitary body supplies an internal secretion which causes contraction of the heart's arteries. The suprarenal bodies have been the subject of experiments by Dr. Schäfer and Dr. Oliver for two years, the results of which are declared to show conclusively that the medulla

of the suprarenal capsule contains a dialysable organic principle, soluble in water, and not destroyed by boiling for a short time, which produces a powerful physiological action upon the muscular system in general, but especially upon the skeletal muscles, the muscular wall of the blood vessels, and the muscular wall of the heart. A certain amount of action is also manifested upon some of the nerve centers in the bulb, especially the cardio-inhibitory center, and to a small extent upon the respiratory center. These internal secretions, Dr. Schäfer adds, have to be definitely reckoned with by the physician, while at the same time the therapist will be able to avail himself of the active principles which they contain, and in certain cases to use extracts of internally secreting glands in place of the hitherto more commonly employed vegetable medicaments.

Dr. Levy Dorn has communicated to the Physiological Society of Berlin the results of his observations on the effect of various temperatures on the secretion of sweat. His experiments were made upon cats, and dealt with the secretion of sweat at low temperature. The sweat glands were kept at the temperature (19°–30° C.) most favorable to the secretion, while the animal's body was cooled by water at 6° C., and secretion was obtained as a result of dyspnoea, notwithstanding the cooling of the body. The author also gave account of experiments made with a view to testing Prof. Grützner's assertion that heat acts only on centripetal and vasomotor nerves, but does not affect motor or centrifugal nerves. Carefully observing all the experimental conditions described by Grützner, he had found that the action of heat on the sciatic nerve leads to a copious secretion of sweat on the cat's paws, that is to say, stimulates centrifugal nerves.

The active principle of the thyroid gland has been further experimented upon by Dr. Sigmund Fränkel, who, precipitating the albuminous bodies from the extract with acetic acid, found that the virtue resided in the filtrate. This was then chemically examined, when upon solution in alcohol and addition of ether an intensely hygroscopic body was obtained, soluble in water and alcohol, the watery solution having a neutral or slightly alkaline reaction. The empirical formula has been calculated as  $C_6H_{11}N_3O_6$ , and the substance is provisionally named "thyreo-antitoxin." Sufficient time had not yet elapsed to establish any definite results from investigations clinically made with this body. Dr. Fränkel has failed to find the fall of blood pressure demonstrated by Dr. Schäfer upon intravenous injection of thyroid extract, but acceleration of the pulse rate was well marked. The author also found that the hearts of frogs poisoned by muscarin which had ceased to beat could again be brought to act by dropping on them a few drops of the thyreo-antitoxin. In animals, too, after the thyroid glands had been extirpated and convulsions and other symptoms had ensued, temporary recovery followed subcutaneous injections of a 1-per-cent. watery solution of the remedy. These experiments agree with those made by Gley, of Paris, with injections of thyroid juice. Dr. Fränkel maintains, therefore, that he has demonstrated



the isolation of the active principle of the thyroid gland, and that it is a pure chemical body with well-defined properties occurring in considerable quantity in the gland. He anticipates that we shall eventually be able to administer this particular antitoxin in exact doses. As he has isolated the body it is odorless, with a taste that reminds us of the extract of beef rather than of the thyroid and its extracts."

The extracts of the ductless glands are shown by the experiments of Oliver and Schäfer to produce, even in the most minute quantities, immediate and incommensurable results. Thus, blood pressure is raised by a trace of pituitary extract, lowered by thyroid, and first raised and then lowered by splenic extract. While extracts of the cortical parts of the suprarenal glands are comparatively inert, extracts of the medullary portion have an extraordinary power when injected into the vessels, raising the arterial blood pressure to from 2 to 5 times the normal tension, apparently by causing contraction of the systemic arterioles.

The studies of M. L. Ranvier on the development of the lymphatic vessels in the embryo of the pig have led to the conclusion that the lymphatic system may be considered as an immense vascular gland, having its embryological origin in the venous system, and throwing its secretory product, the lymph, into the veins.

**Muscular System.**—The unstriated muscles in vertebrate animals have been found by Dr. Schulz to consist of elongated cells, pointed at each end, the length of which is very variable in different animals. Each cell consists of fibrils imbedded in a highly refractive interfibrillar substance, and of granules and a nucleus in the middle of the cell with two nuclear bodies. Two nuclei in one cell were seen only once among thousands of preparations. The fibrils interlace with each other. The separate cells are not held together by any cement substance, but by protoplasmic threads and branches. The transverse striation described by many observers appears to be due to a wrinkling of the cell resulting from complete extension after having been contracted. Nerve fibers are very plentiful. With methylene blue, gold chloride, or by Golgi's method, numerous ganglion cells can be brought into view, from which short branches are distributed to the muscle cells. In addition to these, numerous nerve fibrils can be seen ending in minute bulbous swellings which are applied to the muscle. The nerves are sensory as well as motor.

The conclusions reached by Mosso and Harley as to the respective functions of active and resting living muscle are confirmed by the experiments of Prof. Stokvis. This author reiterates the conviction that resting living muscle must be looked upon as a storehouse of potential energy, while active muscle represents a close approach to absolute perfection in the conversion of the energy of the fuel or food into work; and considers himself justified in assuming that in healthy persons muscular fatigue and exhaustion are not caused by want of food but by want of rest.

Prof. Ganle, of Zurich, regards the growth of muscle as periodic, and supposes that changes corresponding to the periods exist in muscular fibers. He has found that within twenty-four

hours of the excision of the inferior cervical ganglion the biceps and psoas of the same side increase in weight and show a greatly diminished resistance to mechanical strain.

An Italian physician, Signor Manea, has investigated the influence of fasting for periods of twenty-four and of thirty-six hours on his muscular power, testing this both by voluntary efforts of, and by the application of an electrical current to the muscles of his forearm. The conclusion at which he has arrived is that fasting within the above limits has no influence on the muscular power. The deviations after longer periods observed by other investigators, he thinks, are attributable to the effects of the fasting on the nervous system, circulation, and respiration. Signor Manea distinguishes two stages in fasting: one in which a kind of compensation of the injurious effects of fasting is effected through the agency of the nervous system, and a second in which there is deranged compensation, with disturbances of the several organs strongly marked, accompanied by loss of weight and abundant excretion of nitrogen in the urine, after which death occurs. The great powers of resistance possessed by the muscles in regard to their force are, he thinks, due to the glycogen and sugar in the blood, which do not materially alter in quantity even after prolonged abstinence.

In experiments by Prof. Zuntz and Dr. Schumburg on the effect of load on the metabolism and body functions of soldiers on the march, two students, feeding uniformly on a somewhat complicated but accurately analyzed diet, made on alternate days marches up to 45 kilometres with a load increasing to 31 kilogrammes. Taking first the nitrogenous metabolism, it was found that the excretion of nitrogen through the urine and sweat was but slightly increased by even the most severe exertion. The slight loss of proteid thus noticed was made good in the subsequent period of rest. At the end of each experiment the consumption of oxygen was found to be greater than at the beginning. When the marches were made on three consecutive days with an increasing load, it was found that the consumption of oxygen was increased even at the beginning of the third day's march, and was still further increased at its end. The body temperature rose to 38.5° C., and in some cases to 40° C. The best production was three times as great as during rest, and the regulation of temperature to compensate for this was almost entirely brought about by the evaporation of sweat. The concentration of the blood was found to be but very slightly increased by exhausting marches; the blood-red corpuscles were hardly more numerous than normally, whereas the white corpuscles were increased to a marked degree in number. The movements of the heart at the end of the experiments showed a lengthening of the systole and distention of the right ventricle, whose dull area on percussion, as also that of the liver, was extended during severe exertion. The respiratory activity was at first, and with light loads, improved, but later on difficulties in breathing made their appearance. The psychic condition, as measured by the reaction time to simple stimuli, was not depressed by heavy marches; but when fatigued patients reacted more slowly to complicated stimuli. Muscles not used in marching were as

readily excitable at the end of the most severe march as during complete rest. A high external temperature was found to exert the same influence with a light load as the heaviest load did at more moderate temperatures, and some details of the experiments were found to depend on individual proclivities.

**Nervous System.**—Prof. Waldeyer, in an account of the most recent researches on the formative structures of the nervous system, lays special stress on the following statements: The entire nervous system consists of single elements, which may most conveniently be called *neurons*, each of which is composed of a nerve cell and its processes. These processes are, on the one hand, protoplasmic *dendrites*, which rapidly become branched, and, on the other hand, *neurites* or *axons*, which give off collateral branches, soon become medullated, and end in fine branchings, as also do the collaterals. Each nerve cell has only one axon. The dendrites convey impulses to the cell; the neurites or axons convey impulses from the cell. All nerve fibers, both dendrites and neurites, end freely in fine branchings. Every physiological path of conduction, whether from the periphery to the central nervous system or *vice versa*, consists of two or more neurons; never of one. Conduction in the neurons is always longitudinal. Impulses are transmitted from one neuron to the other only by means of the free endings of the terminal branches.

From experiments in which section of all the sensory roots of the nerves distributed to a limb was followed by permanent motor paralysis, in addition to the anæsthesia which might be expected to occur, Dr. Mott and Prof. Sherrington conclude that the whole sensory path from periphery to cortex cerebri is in action during voluntary movement. Dr. Bastian, on the other hand, maintains that there are no motor, but only sensory centers in the cortex cerebri, sensory impressions and the activity of sensory centers being the real guides for volitional action, and the true motor centers existing only in the spinal cord. Dr. E. Steinbach has shown that the posterior roots of the spinal nerves are not exclusively sensory, but also contain motor fibers, which are distributed to the visceral muscles originally developed from the lateral plates in the embryo.

Mosso has set forth that the brain is a seat of active combustion, and that its temperature rises still higher when it is stimulated to activity by direct excitation or by drugs. The experiments of Leonard Hill and N. D. Nabarro do not bear out these conclusions, for it appears from them that when compared with the muscles the brain is not a seat of active combustion, and it seems very improbable to them that its temperature should be perceptibly greater than that of the blood.

It results from the experiments of Grigorescu that the rapidity of transmission of sensory impressions and of motor impulses is the same in the sciatic nerve and spinal cord. The absolute rapidity of sensory impressions in the sciatic nerve and cord together is from about 25 to about 31 metres per second. In the cord alone it is upward of 51 metres per second, so that time is lost in the transference of the sensory

impression from the terminals of the sciatic nerve in the cord to the cells of the cord. In locomotor ataxy the speed is slower in both, but especially in the cord.

Much information concerning the conditions of sympathetic or referred pain has been afforded by the combined results of the experiments of Sherrington and the more clinical researches of Head relative to the precise nervous connections between the sensory nerves from the internal organs of the thorax and abdomen and certain other sensory nerves supplying the skin. Examples of pains on which light is thus thrown are that over the chest when the blood vessels of the heart are occluded in angina pectoris, pain between the shoulder blades in liver diseases, the radiating pains attending the passage of calculi along certain ducts, and the headaches and neuralgias connected with various kinds of visceral irritation. In these researches, with those of Langley and Anderson, certain areas of the skin surface have been defined as invariably the seat of referred pain when certain deep organs are diseased.

In his application of the results obtained by Gaskell's observations on somatic and splanchnic nerves to the study of the emotions, Prof. A. C. Wright takes as an example the phenomena observed in a kitten confronted with a strange dog, and shows that such an emotional stimulus would call forth in the kitten a regular series of reflex responses. First, through the involuntary visceral nerves; then the semi-involuntary muscles would be called into action; and, lastly, a reflex response would take place in certain parts of the voluntary muscular system. The essential features to be recognized here and in every emotional reaction are the origination of the emotion in a violent sensory stimulus, a condition of extreme neural tension in the reflex center, and an overflow of neural energy into different paths. This overflow takes place first into channels associated with semivoluntary muscle, and lastly into those associated with voluntary muscle. The physiological essence of the emotion is to be found not in the visceral reflex actions, but in the high neural tension of the reflex center which gives rise to those actions. In childhood sensory stimuli call forth in each case responses of both involuntary and voluntary muscle, while with increasing age the outflow of neural energy from the reflex center becomes more and more restricted to paths associated with involuntary muscle. As a result of such transformation we get voluntary action with a purpose. Some system of control of the reflexes appears to be *a priori* a necessity, since, "if each animal stimulus were to evoke a separate reflex movement in an organization which was endowed with sensitiveness at all approaching that of the human organization, life would be a mere chaos of involuntary movement." Voluntary muscles react to the slightest stimuli, but involuntary muscular actions are called out only by intense stimuli or by a summation of slighter ones. High neural tension in the reflex center is therefore necessary for these reactions of involuntary muscles, and all such high neural tension is attended with symptoms of distress. The replacing of the "generalized somatico-visceral re-



flexes of inexperience and childhood by the specialized purposive reflexes of experience and adult life . . . is not so much a question of substituting one variety of reflex for another as it is a question of substituting a condition of low neural tension for a condition of high neural tension."

An investigation by C. F. Hodge of the changes in ganglion cells from birth to senile death leads him to the conclusion that if we take the nucleus to be the source of rejuvenation for the cell protoplasm, age seems to be indicated as of the nature of final fatigue—final because the source of energy for the nerve cell has dried up at the fountain head. It is not implied that nerve tissue is of any more importance in relation to physiological dying than any other tissue. The exact position held by each must be clearly determined by experiments.

Having studied the rapidity with which the impulses producing voluntary tetanus succeed each other, Dr. Fraser Harris finds that the contraction of the muscle is not a complete but an incomplete tetanus, and that the rhythm of the volitional impulses proceeding from cerebral motor areas has an average rate of from 10 to 12 per second, or that it has some higher rate transmitted into one of 10 or 12 per second by the activity of the motor cells of the cornua of the spinal cord.

Two years after Prof. Vitzou, of Bucharest, had produced blindness in a monkey by removal of the occipital region of the brain, the animal recovered a small part of its vision. A new formation, very vascular, was found on examining the brain at the seat of the lesion. Its extirpation reproduced the blindness. Nervous elements were found in this new tissue.

The Mexican cactus called peyotl has an intoxicating action, and in large doses produces sleep and a state of nervous excitation accompanied by a disposition to voluble speech. Small doses of the alkaloid given to frogs by Prof. L. Lewin produced tetanic cramps and a greatly increased reflex irritability, analogous to the effects of strychnine; but with the difference that by carefully apportioning the dose the effects were permanent for several days. Similar results were obtained on administering the new alkaloid to rabbits, and Prof. Lewin regards it as specially adapted to further the study of the nature of tetanus. It was noticed in rabbits that during each paroxysm of cramps the blood vessels of the ears were widely distended. The author has found alkaloids with powerful actions in many other species of cactus hitherto regarded by botanists as harmless.

Dr. M. Grossman has demonstrated that the inhibitory fibers of the heart are formed by the 3 or 4 lower fasciculi of the vagus and the uppermost fasciculus of the spinal accessory nerve.

**Special Senses.**—The results of the investigations of Exner in cerebral localization are summarized by Dr. E. C. Spitzka, of New York, as having shown that the general principles of localization are correct, while they have made the narrow limitation of numerous centers to areas not exceeding a few millimetres in diameter seem untenable. "Just as the fiber masses of the corona radiata are seen to spread out fan-shaped, and while terminating chiefly in some

special cortical districts, yet detach scattered fibers to neighboring areas, so the fields of cortical function delineated by Exner in his great work are shown to consist of 'absolute' and 'relative' fields. The former have a constant relation to a given function; the destruction of the 'absolute' field for the muscles of the arm is always followed by paralysis of these muscles. The latter have an inconstant relation; the destruction of the 'relative' field of the arm muscles, which surround the absolute field in zones of gradually diminishing intensity, sometimes leads to such paralysis and sometimes does not. The various fields of motor and sensory function are also noticed to develop considerably; the field for the arm dies out within the visual area and encroaches considerably on the speech field. But a most interesting part of Exner's laborious compilation and comparison of the numerous cases of limited cortical lesion scattered through modern neurological literature is his conclusion that, as a rule, the sensory fields are nearly identical with the motor fields for the same periphery, and he cites this as a remarkable confirmation of the experimental results of Munk, who found his tactile areas in the dog's brains to correspond with the motor areas of Heitzig and Fritsch. Not only do the tactile fields correspond very closely to the motor fields of the same body regions, thus sustaining the anticipation of Meynert that the function of the cortex is not so much the liberation of an explosive motor force as the mediation of sensations of innervation, but all determinable function areas which on physiological grounds must be considered to require a bond of association in the cerebral mechanism are found to have a regional contact. Thus, the symbolic field, that is devoted to the registration and liberation of spoken and written symbols, is found to approach the fields of the upper extremity and of the lingual and auditory peripheries. While our knowledge of the sensory cortical area is daily becoming more satisfactory, that of the course of the sensory tracts connected with the cortical areas in question is very imperfect.

The mechanism of accommodation in the eye, which has not yet been satisfactorily determined, is discussed again by Dr. Wilhelm Schoen. The physiological problem as propounded by Aubert is, How can the increase in the convexity of the anterior curvature of the lens in accommodation of the eye for near objects take place without change of curvature of the posterior surface of the lens and without change of place of the lens itself? Dr. Schoen thinks the question to be solved would be better put in the terms, How can the increased curvature of the anterior lens surface occur without change of place, without material alteration in the posterior surface of the lens, without forward movement of the whole lens, and without increase of tension in the anterior chamber? After criticising the generally received theory of Helmholtz to the effect that accommodation for near objects is effected by the contraction of the meridional fibers of the ciliary muscle, which relaxes the zonular fibers, and thus permits the lens to become more convex, and those other theories which attribute accommodation to the action of the circular fibers of the ciliary muscle, to blood pressure exerted on the lens through

the iris or the ciliary processes, to increased tension of the zonular fibers, and to change in the hydrostatic pressure in the anterior chamber, Dr. Schoen advances his own theory, which he thinks can best be understood from the following illustration: An elastic ball is to be grasped with both hands, the wrists being kept together. The 10 fingers are then bent in so as to be applied to the ball along a line that, if the ball represented the earth, would correspond to the arctic circle. If pressure be now made with the tips of the fingers the free part of the ball will bulge forward. Now the finger tips represent the ciliary processes and circular fibers of the ciliary muscle, the palms of the hands the meridional fibers of the ciliary muscle, and the two wrists the optic nerve. The anatomical relations, he contends, correspond completely to his theory for the anterior capsule. The zonular fibers and the retina form an investment to the vitreous humor and to the lens that are quite analogous to the elastic ball. The fibers of the ciliary muscle and choroid lie on the outside of the investment just as the palms of the hand are external to the elastic ball, and the ciliary processes form a similar groove, and exert the same kind of pressure as the tips of the fingers in the above illustration. The depression caused by the ciliary process is always slight, never exceeding 1 millimetre.

The invisibility of infra-red light is explained by Cima and Janssen on the ground that the humors of the eye are opaque to it; by Tyndall, Engelmann, and others, because the light is incapable of exciting the retina; while Helmholtz supposed that the strong absorption suffered by the infra-red rays in their passage through the eye was sufficient to account for it. While all observers have found that the rays are strongly absorbed in the eye, Herr Aschkinass has recently shown, as the result of experiments made upon thin layers of the humors of an ox eye and a human eye, that there is no sudden increase of absorption beyond the red end of the spectrum, and that the absorptive powers of the various media of the eye are practically the same as those of water; and the experiments indicate that a large proportion of infra-red light reaches the retina through the eye, but is not capable of affecting the nerves and producing sight.

**Miscellaneous.**—M. Charles Richet, in a paper on "Functions of Defense in Man and Animals," deals, among other things, with the power warm-blooded animals have of resisting exposure to cold. In the dog exposure to a cold of  $-91^{\circ}$  C. for half an hour was accompanied by a rise in the rectal temperature, and it resisted the effects of that degree of cold for two hours. Shivering on exposure to cold may be contrasted, the author remarks, with the beneficial effects of sweating on exposure to heat. He points out the advantages of the sentiment of fear which is inspired by so many animals and circumstances, and which saves us often from ourselves. The same may be said of the feeling of vertigo. M. Richet maintains that were it not for the sensation of vertigo falls and serious accidents would be of much more frequent occurrence. Pain, too, or the anticipation of it, has its protective influence. Under pain the respiration quickens, the heart beats more rapidly,

the arterial blood pressure rises, the glands secrete more abundantly—all conditions that tend to the re-enforcement of the biological activity of the organism. As Brown-Séquard would have said, there is dynamogeny of the whole body. Finally, he considers the remarkable means of defense we possess in our leucocytes and phagocytes against the multiplication of microbes in our system.

It is remarked that more varied physical agencies and more multifarious and complicated chemical phenomena are found among cold-blooded than among warm-blooded animals. Some fishes and many insects and marine animalcules have the power of emitting light; several fishes, a bug, and a slug, it is said, have command of the electric current; many arthropods and a few mollusks have the power of secreting and emitting silk; many reptiles, amphibia, fishes, insects, and arachnoids secrete intense poisons, which are very rare among the higher animals, except under diseased conditions; dyes, also rare among mammals and birds, are abundant in mollusks and insects; and odors are much more abundant among cold-blooded forms than among the higher animals. In view of these facts the question is suggested by Mr. J. W. Slater as a subject toward which research may be directed whether the energy which in hot-blooded animals is expended in keeping up the temperature of the body may not in the cold-blooded forms be converted into luminous or electrical or chemical energy?

Among a number of instances of death by electricity studied by Mr. Bernhardt was one recorded by Dr. J. Kratter of a man who was traversed by a current of high tension, and was found breathing stertorously a few steps from the point where he made contact. The *post-mortem* examination, twenty-one hours after his death, disclosed 2 small wounds, one on the index finger, and the other on the back, with large extravasations of blood in their vicinity. All the organs of the body showed hypervenuous blood, acute œdema of the lungs was present, extravasations were observed in various places, the muscles were in extreme rigor, and the heart was partially relaxed. No microscopic changes were remarked. Dr. Kratter thought that the electric shock suddenly paralyzed the heart, and that was the immediate cause of death, accompanied by œdema of the lungs producing hypervenuousness of the blood. A marked contusion was seen on the left side of the diaphragm at the point of contact of the heart. Experiments made on animals showed that in them the respiration was usually primarily arrested, causing asphyxia and secondary stoppage of the heart's action, though the heart is sometimes first affected. In a second case, reported by M. d'Arsonval, the current, of 4,500 volts, entered at the head of the man, and issued at his back. On the application of artificial respiration by Sylvester's method, more than half an hour afterward, recovery took place. In a third case, reported by Dr. Donellan, on the passage of a current of 1,000 volts through a man, coma instantly resulted, with dilated pupils, pallor of the face, and sweating; delirium and tonic, alternating with clonic spasms, followed. The pulse was 80, the respiration, at first stertorous,



passed into the Cheyne-Stokes type. After the injection first of morphine, then of strychnine, the patient fell into a deep sleep, from which he awoke convalescent.

Experiments by Dr. Renzi showed that sunshine materially assisted guinea-pigs in contending with tuberculous disease; for the animals thus affected succumbed much more rapidly in more diffused light than those which were exposed in glass boxes directly to the sun's rays. Dr. Masella has found, on the other hand, that animals infected with typhoid and cholera germs died more rapidly, when they had been previously exposed to sunshine, as did also those that were exposed after inoculation, and under smaller doses, than those kept in diffused light. The difference was proved to be not due to the temperature of the medium, for the fatal effect was the same in sunshine boxes cooled by a current of water flowing through them.

Experiments by Dr. Max Müller on the effect of fever temperature upon the growth and virulence of the typhoid bacillus show that when preserved at about 40° C. this microbe takes five minutes longer to produce a new generation than when it is kept at a temperature of from 37.5° to 38° C.—that is, that in the absence of adverse circumstances, as many as 45 generations of typhoid bacilli may proceed in one day from a single parent bacillus at the normal temperature of the body, while at about 40° C. 39 such generations may be produced. A fever temperature of 40° C. is not, therefore, able to destroy the typhoid bacillus, or to affect its growth to any considerable extent. Even higher temperatures of from 41.5° to 42° C. were incapable of destroying the microbe, and typhoid bacilli kept for sixty-two days at 42° C. showed no abatement of their vitality afterward. No difference was observed in the virulence of the bacillus within the range of temperature of the experiments.

In a paper by Dr. John Haldane on the physiological effect of black damp as found in two English collieries, that substance, also called choke damp, or stythe, is distinguished from fire damp by not being explosive, while it extinguishes flame; from after damp, by its not being the product of an explosion, but as collecting in the workings under ordinary conditions; and also from white damp, which is capable of supporting combustion, while it acts as a poison when inhaled. It is found to consist, when undiluted, of nitrogen containing an admixture of from a seventh to an eighth of a volume of carbonic acid. Air containing just sufficient black damp to extinguish a candle or oil lamp produced no immediately sensible action on a man. A mixture of about 16 per cent. of the black damp and 40 per cent. of air would be required to produce immediate danger to life. The dangerous physiological action of the black damp, the author concludes, is due to deficiency of oxygen, not to excess of carbonic acid. The effect, first appreciable when increasing proportions of black damp are breathed, is, however, due to carbonic acid alone.

The capacity of the roots of plants to penetrate into living tissues has been investigated by Mr. George Peirce, who first studied the amount of pressure required to force an iron rod into the

tissue. He then planted rape seed and white mustard seed within a split potato, binding the parts of the potato together again. After a suitable interval it was found that nearly all the seeds had germinated, and some of the plants had pushed their rootlets down, so as to penetrate the substance of the potato. In some instances the growth had been so vigorous that the rootlet had traversed the whole thickness of the parenchyma, pierced the hard corky layer of the surface, and reached the damp sawdust in which the whole was packed. Anatomical examination of the root and surrounding potato tissue showed several peculiarities. The young shoot was almost devoid of the usual coating of hairs; the cells of the potato had undergone alteration, those in immediate contact with the advancing root being much contorted and torn, while 2 or 3 layers adjacent to the injured elements had undergone division by walls parallel to the long axis of the root, and had subsequently become corky. By this means the intrusive rootlet was inclosed within a corky cylinder or sheath, cutting it off more or less perfectly from the living, unharmed tissue of the tube. So far the experiments proved that the thin, delicate, and pointed roots of rape and white mustard are able to penetrate living tissues. Mr. Peirce carried the matter further by testing the power of the blunt rootlets of the pea and vetch, and found that they, too, could pierce the living tissue. Other experiments were made on the same plants, with other plant tissues substituted for that of the potato. The results were the same, except that the tissue of rhubarb appeared to be unhealthy to the young plant. Mr. Peirce further succeeded in growing specimens of pea as parasites upon other plants, from the seedling state to flowering. The young pea grown under such unwonted conditions produced an almost normal root system, with numerous side branches, but the stem was stunted, although it bore leaves and a few flowers.

**POLISH NATIONAL ALLIANCE**, an organization of Polish citizens in the United States, founded in 1880, with 3 branches, 1 each in New York, Philadelphia, and Chicago. In 1895 it included 250 individual societies, or groups, with a membership of over 10,000. One of the main objects of the Alliance is "to develop, morally and materially, the Polish element in the United States by establishing proper institutions, as Polish schools, libraries, immigration stations, and in general all institutions of benevolence and Polish industries." It is provided that every member joining the Alliance shall endeavor to obtain naturalization papers with the view of becoming a citizen of the United States, and no member is allowed to belong to any anarchistic, socialistic, or nihilistic society." The Alliance publishes an official newspaper in Chicago, where it also has a museum and library. Among its treasures are many precious relics pertaining to the history, art, and literature of Poland, and also valuable documents relating to the history and the literature of the United States. A monument to the memory of the Polish hero Thaddeus Kosciuszko will be erected in Chicago by the Alliance. While strictly a secular order, the Alliance, through its individual members, has given much support to the newly

formed Independent Roman Catholic Church, which see on page 357.

**PORTUGAL**, a constitutional monarchy in southwestern Europe. The throne is hereditary in the family of Saxe-Coburg-Braganza. The legislative power is vested in the Cortes, consisting of a Chamber of Peers and a Chamber of Deputies. There are 52 hereditary peers remaining. Of the others, 13 are spiritual peers, 50 were elected by delegates of districts and learned bodies, and 139 have been appointed by the crown. The Deputies are elected for four years, 168 by continental districts, the Azores, and Madeira, and 12 by the colonies. The size of both houses and the conditions of representation have been changed for the future.

The reigning king is Carlos I, born Sept. 28, 1863. The ministry at the beginning of 1895 contained the following members: President of the Council and Minister of Finance, E. R. Hintze Ribeiro; Minister of Foreign Affairs, Carlos Lobo d'Avila; Minister of the Interior, F. F. Pinto Castello Branco; Minister of Justice and Worship, A. d'Azevedo Castello Branco; Minister of War, Col. L. A. Pimentel Pinto; Minister of Marine and the Colonies, J. A. de Brissac dos Neves Ferreira; Minister of Public Works, Commerce, and Industry, Campos Henriques. On Jan. 16 the Minister of Marine resigned, and Capt. Ferreira Almeida was appointed his successor. He in turn resigned on Nov. 25, owing to differences respecting naval reforms, and was succeeded by Jacintho Candido. L. De Soveral succeeded the late Lobo d'Avila as Minister of Foreign Affairs on Sept. 20.

**The Army and Navy.**—Portugal has a standing army of 30,000 men raised by conscription. The year's contingent was 19,917 men for 1895. The soldiers serve uninterruptedly through the first year, and have four months' leave in the second and eight months' in the third year. About 2,000 men besides are furloughed. The war effective is about 100,000 men.

The navy consists of 1 ironclad corvette of 2,422 tons, 6 corvettes, 14 gunboats, 5 monitors, 10 sloop gunboats, 2 armed transports, and 4 torpedo boats.

**Commerce.**—The value of merchandise imports in 1894 was 35,662,499 milreis, and of exports 23,911,793 milreis. The imports of precious metals were 826,030, and the exports 3,883,933 milreis. The principal imports are cereals, cotton, sugar, fish, coal, cotton cloths, iron, wool, animals, hides and leather, silks, machinery, coffee, staves, rice, chemicals, petroleum, spirits, and tobacco. The values of the leading exports were: Wine, 9,742,000 milreis; cork, 2,955,000 milreis; copper, 2,238 milreis; animals, 1,902,000 milreis; fruits, 937,000 milreis; sardines, 760,000 milreis; cotton goods, 669,000 milreis; onions, 277,000 milreis.

There were 5,556 sailing vessels, of 488,000 tons, and 5,118 steamers, of 6,720,000 tons, entered at all the ports in 1884. The merchant marine consist of 67 steamers and 486 sailing vessels.

**Political Events.**—The system of parliamentary government was virtually suspended in 1894. The Chamber that was elected was not called together and financial and other legislation was enacted by royal decrees. A series of

decrees were issued on Jan. 13, 1895, concerning taxation, emigration, the army, and other matters. One imposed capital punishment on officers convicted of political offenses or rebellion. Another required all persons, natives or foreigners, who leave Portugal by land to take out passports. On March 31 a decree was published dissolving the Chamber and transforming the electoral system. The number of Deputies was reduced to 120, of whom 114 represented the kingdom and 6 the colonies. Naturalized foreigners were made ineligible, also managers and directors of companies having concessions from the state, and many classes of public functionaries. The Deputies will receive salaries. The legal and medical professions must not have more than 20 representatives. The new law does away with the representation of minorities and introduces the system of *scrutin de liste*. On Sept. 26 a decree was issued effecting changes in the Chamber of Peers, which will henceforth consist of 90 life members, in addition to the bishops, the princes of the blood royal, and the hereditary members whose peerages are not yet extinct. The nominated peers may be selected without distinction of class, though certain disqualifications are imposed. The elective portion of the Chamber of Peers ceases to exist.

By a decree issued on March 24 the Azores receive autonomous institutions. This concession crowns a series of measures for the better administration of these islands.

During a national feast held in June in celebration of the seven-hundredth birthday of St. Anthony of Padua, who was a native of Lisbon, anarchistic manifestoes were circulated and popular demonstrations against the clergy, and especially against the Jesuits, took place. The citizens of Lisbon and other towns, except the Clericals, regarded the festivities with cool indifference. The democratic papers clamored for the enforcement of the law prohibiting the continuance of religious confraternities. The Government issued a circular to the bishops declaring that it would punish severely all attacks upon priests and the Catholic religion, but it would not allow Catholics to make use of religion for political objects. King Carlos, who had visited England, arranged to pay a visit in October to his uncle, the King of Italy, but the trip was abandoned when the papal secretary informed the Portuguese Government that the Pope would consider such a visit a personal affront. The Italian Government, when informed that the engagement had been canceled for this reason, replied by expressing a hope that Portugal would recover her independence of action. A treaty of commerce between Portugal and Russia was signed at Lisbon on July 9.

The parliamentary elections took place on Nov. 17. The Republicans and Progressists in many districts abstained from voting against the Government candidates, and the people generally showed the utmost indifference.

**Colonies.**—The colonial possessions of Portugal in Africa comprise the Cape Verde Islands, with an area of 1,650 square miles and 110,926 inhabitants; Portuguese Guinea, with an area of 14,000 square miles and 800,000 inhabitants; Princes island and St. Thomas, with an area of 454 square miles and 21,040 inhabitants; Angola,



with Ambriz, Benguela, Mossamedes, and the Portuguese Congo, with an area of 457,500 square miles and 19,400,000 inhabitants; and Portuguese East Africa, with an area of 261,700 square miles and 1,500,000 inhabitants. In Asia Goa has an area of 1,447 square miles and 514,169 inhabitants; Damão and Diu have an area of 158 square miles and 77,454 inhabitants; Macao has 5 square miles of area, with 67,036 inhabitants; and Timor and Kambing have an area of 6,290 square miles, with 300,000 inhabitants.

The aggregate revenue of all the Portuguese colonies in 1895 was 4,926,314 milreis; the expenditure was 5,162,862 milreis. Their total imports in 1891 amounted to 3,939,000 milreis, and their exports to 5,121,000 milreis. There are 161 miles of railroad in Angola and 199 miles more are building; in East Africa 58 miles are completed and 427 miles are projected; in India there are 50 miles in operation.

The troops regularly maintained in the transmarine possessions are 1 regiment of colonial infantry, exclusively made up of Europeans, consisting of 50 officers and 1,143 men, and 8 battalions of African rifles and 2 companies in Timor, numbering 488 officers and 7,797 men. In consequence of the insurrection of natives at Lourenço Marques its garrison was increased by 24 officers and 603 men (see CAPE COLONY AND SOUTH AFRICA). Subsequently fresh re-enforcements were sent in order to pursue an active campaign against Gungunhama.

Following upon the disturbances in South Africa there was in September, 1895, an outbreak in the Portuguese portion of the island of Timor. Troops that marched against the rebels were defeated, and the Secretary and 3 agents of the Government were killed. The Governor set out with fresh troops and eventually quelled the insurrection. In the same month a mutiny occurred among troops about to embark for East Africa, because the Administrator, Gomez da Costa, would not guarantee their pay. The force, 500 in number, marched off with their arms and ammunition. The revolt spread, and troops were sent from Portugal to suppress it. The English Government offered to lend troops to put down the rebellion, as it had offered before in the case of the insurrection at Delagoa Bay, and the Portuguese Government again declined assistance. All men between the ages of sixteen and forty-five were summoned to the defense of the capital on pain of being treated as rebels if they did not report for duty. An expedition was sent from Portugal to bring the rebels to terms.

In East Africa the Portuguese column commanded by Col. Galhardo attacked Gungunhama's army on Nov. 5, and routed the natives with great slaughter. On Nov. 11 the Portuguese forces captured and destroyed Gungunhama's kraal.

#### **PRESBYTERIANS. I. Presbyterian Church in the United States of America.—**

The statistical tables of this Church presented to the General Assembly in May give the following footings: Number of synods, 31; of presbyteries, 224; of ministers, 6,797; of candidates, 1,477; of local evangelists, 215; of licentiates, 474; of churches, 7,496; of churches organized during the year, 176; of communicants,

922,904; of members added during the year on examination, 67,938; of baptisms, 25,729 of adults and 27,731 of infants; of members of Sunday schools, 994,703; amount of contributions for home missions, \$997,500; for foreign missions, \$712,887; for education, \$214,637; for Sunday-school work, \$133,682; for church erection, \$217,824; for the Relief fund, \$92,932; for the freedmen, \$111,448; for synodical aid, \$72,265; for aid for colleges, \$145,964; for the General Assembly, etc., \$89,329; congregational contributions, \$9,921,141; miscellaneous, \$937,980; total contributions, \$13,647,579. The number of communicants is 6,917 greater, and the total amount of contributions \$364,548 less than in 1894. Record is made in the tables of 315 censures, 273 ordinations, and 502 installations of ministers during the year, and the number of elders is given as 26,590 and of deacons as 9,058.

The receipts of the Board of Home Missions, \$934,260, were larger than those of any previous year except 1893, when a large legacy was received. Yet the debt of the board had never been larger than now. Seventeen hundred and thirty-one laborers had been employed. The schools in the Alaskan, Indian, Mexican, Mormon, and mountain departments numbered 114, with 391 teachers and 9,466 pupils.

The Board of Education reported that a larger number of recommendations had been received during the year than in any previous year in its history. The whole number of students accepted and enrolled had been 1,032, of whom 316 were new men. The income from churches and Sunday schools—about \$50,000—had been nearly \$2,000 greater than in the year before. The permanent fund yielded about \$8,000.

The Board of Church Erection had received 225 applications, 11 more than in the previous year, but as fewer large sums had been asked for, the aggregate demand—\$138,855—was smaller. The entire receipts had been \$205,569, and the expenditures \$132,184. There had been reported to the board during the year as completed through its aid without debt 182 churches and manses, the total value of which was nearly \$560,000.

The Board of Relief had had under its care 785 cases of ministers, widows of ministers, orphan families of ministers, woman missionaries, etc., and 22 persons had been provided for at the Ministers' Home at Perth Amboy, N. J. The income for the year had been \$171,613, and the expenditure \$178,140. The estimated value of boxes of supplies sent to families on the roll by various churches and societies was \$5,135. The permanent fund aggregated \$1,454,894.

The Board of Missions to Freedmen had received \$173,050, or \$5,270 more than in the previous year, and had expended \$162,704. The debt had been reduced to \$22,351. There were returned as visible results of its work 175 missionaries, 9 white and 166 colored; 257 teachers; 306 churches, with 17,083 communicants; 306 Sabbath schools, with 19,764 pupils; other schools, 87, with 10,529 pupils.

The Board of Publication and Sabbath Schools had kept in the field 83 permanent missionaries and 12 auxiliaries laboring in the summer, through whose agency and the stimulus of its

grants 1,446 schools had been organized or re-organized, into which 5,455 teachers and 44,004 pupils had been gathered and from which 50 churches had already grown. The year's profits of the business department amounted to \$36,800. The editorial department had issued 22 books and tracts. The Sabbath-school department returned 7,283 Sabbath schools, with 977,822 officers, teachers, and pupils.

The Committee on Systematic Beneficence, for the first time since its organization, in 1879, reported a decrease in gifts to benevolent objects, the amount of decrease as compared with the previous year being \$44,829. The Boards of Home Missions, Foreign Missions, Sabbath-school Work, and Aid for Colleges and Academies reported gains aggregating \$123,650; while those of Education, Church Erection, Ministerial Relief, and Freedmen returned losses of \$168,479.

The Board of Foreign Missions had received \$865,709, while its expenditures had been \$976,885, as against \$995,922 in the preceding year. Forty-three new missionaries had been sent out. From the mission fields in Africa, China, Guatemala, India, Japan, Korea, Mexico, Persia, Siam, South America, Syria, and among the Chinese and Japanese in the United States were returned 116 principal stations and 583 out stations; 659 American missionaries (including ordained and medical missionaries, lay teachers, and others), 1,943 native missionaries, teachers, and helpers; 391 churches with 32,104 communicants (3,772 having been added during the year); 109 students for the ministry; 30,452 pupils in schools, boarding and day and for boys and for girls; native contributions of \$65,828; and 33 hospitals and dispensaries, at which 256,514 patients were treated during the year.

The receipts of the Woman's Executive Committee of Home Missions for the year had been \$367,333, and the disbursements \$363,515. The debt at the beginning of the year was \$10,000. The report of the superintendent of schools described the work done—in Alaska, 8 schools and 37 teachers; among the Indians, 24 schools and 140 teachers, reaching 31 tribes; among the Mexican population of the border region, 27 schools and 53 teachers; among the Mormons, 30 schools and 84 teachers; and among the mountain people of the South, 25 schools and 77 teachers. In these 114 schools, with 391 teachers, were enrolled 1,640 pupils as boarders, while 7,828 pupils were attending the day schools and 6,377 pupils the Sunday schools connected with the day schools.

The one hundred and seventh General Assembly of this Church met in Pittsburg, Pa., May 16. The Rev. Dr. Robert Russell Booth, of New York, was chosen moderator. The committee appointed by the previous General Assembly to confer with the theological seminaries reported concerning its conferences with the boards of the Princeton, McCormick, Auburn, Western, Lane, Danville, San Francisco Seminaries, and Lincoln University. It explained to each of these boards that the clauses in its recommendations to them in the matter of putting themselves more immediately under the control of the General Assembly which covered those several points were not intended to change the

title, ownership, or disposition of the property held by the various institutions or to confer any right of control or interference upon the General Assembly, but only to make sure that the property was held for no other purposes than theological education according to the standards of the Presbyterian Church; that the powers sought to be conferred on the General Assembly of passing upon the election of professors in the seminaries by approval or disapproval were no more than it now possessed over a majority of the seminaries; and that certain other conditions asked in respect to the election of professors simply corresponded in substance and effect with what was known as the agreement of 1870.

The seminaries of Omaha and Dubuque had adopted all the recommendations of the General Assembly. The directors and trustees of Princeton Seminary acquiesced in and were in full sympathy with the sentiment of the resolutions, but were advised by their counsel that the charter of the seminary embodied substantially all that the Assembly was seeking to accomplish. Yet they would consent to an amendment if the Assembly still wished it. [The Assembly advised amendment "in order to put the matter beyond all possible question."] The Board of Western Seminary, Allegheny, Pa., considered that seminary already in the position which the Assembly was seeking to establish. The directors of Danville Seminary had resolved to adopt the recommendations as to by-laws as a part of their constitution, but feared that their charter could not be amended without danger of forfeiture. [The Assembly requested the board to secure such legislation as they could without imperiling their charter.] The seminary at San Francisco being under synodical control, it was deemed best to defer action until after the next meeting of the synod. Lane Seminary, at Cincinnati, had been visited by a subcommittee, who found the trustees ready to do all in their power to bring the institution into closer relations with the Church. The report of the committee and its recommendations, with the following resolutions, were adopted by a vote of 432 to 99:

1. That it is the sense of the Assembly that the Assembly of 1894 did not intend to prepare the way for any change in the tenure or management of the property of the seminaries or to do anything which can affect the autonomy of the seminaries, and that the said recommendations were intended to have the meaning and effect as recited in this committee's report. This Assembly, in reaffirming the resolution of the Assembly of 1894, does so with the avowed purpose of leaving the tenure and title to all property of the seminaries exactly where they are now, in the hands of various boards of trustees, and with the further purpose of securing the veto power to the Assembly, as an effective force by charter provision and of safeguarding by charter declaration, the trusts held and to be held by boards of trustees against perversion or misuse.

2. That this General Assembly reaffirms the action of the Assembly of 1894, and, in view of the progress made and the importance of the interests involved, declares that in its judgment the effort should be continued to secure the adoption in substance of the Assembly's plan by all the seminaries.

3. That a committee be appointed to have further charge of this matter, and to make report to the next General Assembly.



The committee was further requested to inquire into and report to the next General Assembly as to the rights of the Church in the property now held by the Union Seminary in New York, and to recommend what measures should be taken to enforce them.

The Committee on Church Unity reported:

The action of the last Assembly with reference to the correspondence with a Protestant Episcopal commission was transmitted to the commission, and since that your committee has addressed nothing to it. The commission has acknowledged the receipt of the committee's letter and assured us that it would be laid before the General Convention which meets in October. They add for themselves that they regard the action of the General Assembly as an expression of a desire on its part that all negotiations between the two bodies shall cease. For the purpose of correcting this erroneous interpretation of the action of the last General Assembly, your committee proposes to write to the commission to the effect that the General Assembly by its action did not direct that all negotiations shall cease, but that they be suspended until the General Convention shall take action upon the subject of mutual recognition and reciprocity referred to by the resolutions of the Assembly.

The General Assembly of 1894 postponed the consideration of the plan of federation which this committee had reported to it until this year, and sent the plan down to the presbyteries for information and advice. The motion to transmit it to the presbyteries did not originate with the committee; it came from the floor of the Assembly. The stated clerk of the Assembly has furnished the committee with the reports from the presbytery. One hundred and ninety-three have been reported as having taken action on the plan. Of these, 50 expressed their disapproval of the plan, without giving any reasons or offering any advice; 17 have disapproved, accompanying their disapproval with reasons for their actions; 6 expressed themselves out of sympathy with the movement, 2 of them recommending its discontinuance; 22 express approval of the movement and desire its accomplishment, while objecting to parts of the pending plan; 100 give their approval to the plan. 17 of them, however, taking exception to the equal-representation provision and suggesting the amendment of that; 32 have either taken no action or their action has not been reported; 11 have been reported as in the former class.

It thus appears that a majority of all whose action has been reported have approved of the plan, and that a majority of the whole number of presbyteries on the roll are in sympathy with the federation movement, a large number of these who object to some features in the pending plan desiring the negotiations to be carried on to a successful conclusion.

Federation, it is thus manifest, has a strong hold upon the mind of the Church. This General Assembly could not, if dissatisfied with the reported plan, summarily discontinue the negotiations with the other churches; for its predecessor of 1890 not only unanimously committed the Church to the movement, but directed its committee to invite the other churches to enter it; and it would be a pointed discourtesy at once to terminate the negotiations because of dissatisfaction with the first plan agreed upon by the committees without a further effort to reach a harmonious agreement, nor would such a course meet with the approval of our Church at large. And it also appears that the sentiment in favor of the pending plan is widespread and decided. A majority of the acting presbyteries have approved of it, some, however, taking exception to the rule of representation that the plan contains; and all who disapprove of the plan and give the reasons, while differing on other points, agree in opposing that feature of it. The committee could not, in courtesy to the committees of the other churches, which unanimously

agreed upon this, recommend the General Assembly to declare in favor of a change in the plan in this or any other respect. Moreover, such action, if taken by the Assembly, would greatly complicate the movement. The highest judicatories of two of the larger churches have adopted the plan as it stands. The United Presbyterian General Assembly has so done, and has also elected its delegates to the Federal Council. The General Synod of the (Dutch) Reformed Church in America has also adopted it and transmitted it to the classes (presbyteries) for their action, and a majority of these classes have ratified the adoption. One of the smaller bodies, the General Synod of the Reformed Presbyterian Church, has also adopted the plan. An amendment here of any particular, or the declaration that an amendment is desired, would compel a reconsideration in those bodies, involve further conference on the part of the committees, and so delay the consummation of the movement. The committee agreed to the equality of representation, because in all other federations with which it was familiar that rule prevailed. If, however, the majority of the members of the General Assembly desired amendments, the committee would seek to secure what would be acceptable to all the churches.

Recalling the fact that the General Assembly of the (Southern) Presbyterian Church in the United States at its quarter-centennial session in Augusta, Ga., in 1886, had addressed a fraternal letter to the Assembly, "which was marked by expressions of kindly regard and sympathy, the Assembly, upon the recommendation of its Committee of Correspondence, on this quarter-centennial of the reunited northern Church sent a responsive fraternal letter to the Southern Presbyterian General Assembly, in session at Dallas, Texas, in which it said, regarding organic union":

We would stir up your pure minds by way of remembrance touching the attitude which we have steadily maintained for years toward that organic union which would make us one in fact as well as in faith. While we do not propose to press this thought unduly upon your minds and hearts, we do desire again to assure you of our readiness to reciprocate any advances which you may be led to make in this direction under the guidance of Christ, who prayed that we may be one.

To an overture from the Presbytery of New York, asking instructions in relation to its duty toward students applying to be taken under its care who are pursuing or purpose to pursue their studies in theological seminaries respecting whose teaching the General Assembly disavows responsibility, answer was returned:

We recognize the general principle that a young man should stand on his merits as revealed by examination for entrance into the Presbyterian ministry, yet:

I. It is the genius of the whole Presbyterian system to educate its ministers through careful training and presbyterial supervision "and to make effectual provision that all who are admitted as teachers be sound in the faith." (Form of Govt., sec. 1, chap. v.)

II. Our Book requires that, "except in extraordinary cases," before licensure the candidate "shall have studied divinity at least two years under some approved divine or professor of theology." (Form of Govt., sec. 6, chap. xiv.)

III. The General Assembly of 1806 recommended every presbytery under their care "to inspect the education of these youth (those preparing for the ministry) during the course of both their academic and theological studies, choosing for them such schools, seminaries, and teachers as they may judge

most proper and advantageous; so as eventually to bring them into the ministry well furnished for their work." (Baird's Digest, p. 398.)

IV. The General Assembly of 1894 affirmed that it is the privilege of the presbytery to direct "the education of their students within reasonable limits in schools *approved by the General Assembly*, and to *prohibit* their attendance at institutions disapproved by the same." (Min., 1894, p. 125.)

Therefore, inasmuch as obedience to the constitution of the Church is obligatory on all presbyteries, we recommend that in accordance with the provisions of the Form of Government above cited, the Presbytery of New York be instructed and enjoined not to receive under its care for licensure students who are pursuing or purpose to pursue their studies in theological seminaries respecting whose teaching the General Assembly disavows responsibility.

A special committee was appointed to consider the whole subject of young people's societies and their relations to the Church, and report to the next General Assembly. Concerning the general finance of the Church and its boards, the Committee on Systematic Benevolence reported

That the decrease in receipts was much smaller, considering the crippled finances of the country and of the Church, than might have been reasonably expected, and advised that an apportionment be made to the different presbyteries of the various amounts recommended by the Assembly, including all the agencies of the Church; this apportionment should be based upon the average percentage of the congregational expenses and total offerings made by the presbyteries during the past two years, less bequests.

A minute was adopted, in view of a recent session of Congress on Sunday, protesting against "the legislative branch of the Government of the people of the United States at any time violating the law of God by meeting or continuing in session on the Sabbath day." The Assembly recommended:

That citizens of the United States who feel justly aggrieved by the action of the late Congress in remaining in session on the Lord's Day be requested and urged to send petitions to both Houses of Congress, petitioning the Congress of the United States to have respect unto the God of the universe by observing his law touching the proper observance of the Sabbath day.

The report on temperance, besides reaffirming the previous temperance deliverances of the assemblies "in unbroken line for more than eighty years," urged the importance of endeavoring to secure the election and appointment to official position of men of clean records on the subject; recommended the more diligent instruction of children and youth upon it; and expressed the judgment of the Assembly that

The time has come when Christian men should make their influence felt directly and with power at the ballot box; and that all voters connected with our communion are urged to vote against the granting of license for the sale of intoxicating liquors;

Urging upon the people the desirability of demanding the enforcement of the liquor law throughout the land; and declaring that

Whereas, it is the duty of the Church of Jesus Christ to avoid even the appearance of evil, and whereas there is a well-grounded belief that danger lies in the use of fermented wine at the communion table, therefore it is the sense of this Assembly that unfermented fruit of the vine fulfills every condition in the celebration of the sacrament.

The present year was the twenty-fifth year of the existence of this, the reunited Presbyterian Church as a single body, after a division that had lasted many years into two branches, popularly known severally as the Old School and the New School General Assemblies, the union having been formally consummated in 1870, in the Third Presbyterian Church of Pittsburg, Pa., the same church in which the present General Assembly was held. An evening session on Thursday, May 23, was devoted to the celebration of the "silver wedding of the United Church." Addresses were made on "The Presbyterian System of Doctrine," by President Francis L. Patten, of Princeton University; "The Influence of the Presbyterian Church upon Other Churches," by President Henry M. Booth, of Auburn Theological Seminary; and "The Growth and Future of the United Church," by W. H. Roberts, D. D., Stated Clerk of the General Assembly. Dr. Roberts's paper contained a history of the union and a view of the growth of the Church since it was effected. Of the history, it said

The Presbyterian Church in the United States of America was divided into two bodies in 1838, in part by theological differences, but mainly upon issues of policy and administration. The Presbyterian Churches generally have never divided upon doctrinal questions, the wedge of division has always had as its keen and separating edge some practical question which all persons can understand and with which all are in some manner connected. In 1838 chief among practical questions was the conduct by the Presbyterian Church of its missionary work through agencies under its own control. That question was settled for the Old School Church by the creation of the Presbyterian Board of Foreign Missions in 1838, and by the New School Church in 1862, by the establishment, in response to the demands of its ministers and members, of the Permanent Committee of Home Missions. This action was the initial step in reunion, for it was the full acceptance on the part of the New School of the principle that the Church must control its own agencies. This decisive act was followed four years later by a proposal for reunion made by the New School Assembly, a proposal received by the Old School Assembly in the fraternal spirit which prompted it. The negotiations were carried forward by committees appointed by the General Assemblies of both Churches until May, 1869, when the two Assemblies, convened in the city of New York, sent down what is called the "basis of union" to the presbyteries for their consideration. The answers to this overture were reported at Pittsburg, Pa., at an adjourned meeting held in this Third Church in November, 1869. The vote of the presbyteries upon the overture was 239 in the affirmative to 3 in the negative, all the New School presbyteries voting in favor of the union. On Nov. 12 the two Assemblies, led by those saintly and now sainted men, Melancthon W. Jacobus and Philemon Halstead Fowler, entered arm in arm into this historic edifice and proclaimed, in the name of God, the reunion of the two branches of the Church. The completion of reunion was followed by the gathering of the commissioners and officers of the two Assemblies into what was known as the Reunion Convention.

Since that time the Church has prospered in a marked degree in nearly all the departments of church activity, as shown, first, by the statistics of organizations and persons. The local churches, instead of being diminished by the union of the two bodies, increased from 4,526 in 1870 to 7,387 in 1894. Ordained ministers, who numbered in 1870 4,238, were in 1894 6,641. The communicants, in 1870 446,561, increased in the quarter century to 895,997, an in-



crease of more than 100 per cent. And the members, teachers, and officers of the Sabbath schools during the same period advanced numerically from 448,857 to 951,199, an increase of 112 per cent.

Next, the statistics of contributions. The contributions for congregational purposes were in 1870 \$6,416,165, and in 1894 \$10,300,761. The contributions for miscellaneous benevolent work, in 1870 \$690,636, rose in 1894 to \$1,025,695, and those to the boards of the General Assembly in the former year \$1,300,686, were in the latter \$2,600,931. The advance in the contributions to the boards can best be appreciated by the fact that the sum recommended by the General Assembly to be contributed for the interests of one of the boards in 1894 was within \$50,000 of the sum total of all contributions to all the boards in 1890.

The total contributions to the benevolent agencies of the Church for the period as reported in the Minutes of General Assembly, were as follow: Home missions, \$15,320,520; foreign missions, \$13,526,844; education, \$4,424,054; publication and Sunday-school work, \$1,538,836; church erection, \$2,618,723; relief, \$5,207,155; freedmen, \$1,953,960; aid for colleges, \$1,813,558; sustentation, \$902,776; total, \$47,306,426.

In addition to the contributions to the boards the churches gave the sum of \$24,280,002 to miscellaneous benevolence and \$192,044,780 to congregational support, or a grand total of all contributions of \$263,631,208.

During the quarter century the Church had aided, chiefly through the Board of Aid for Colleges and Academies, established in 1883, in the establishment of more than 40 institutions of learning; the Sabbath-school department of the Board of Publication had been reorganized; the Board of Church Erection had aided in the erection of 3,778 church edifices, of a total value of nearly \$12,000,000; the Board of Home Missions had spent fully \$10,000,000 west of the Mississippi, and the region, virtually unoccupied in 1870 except in Missouri, was now dotted with Presbyterian churches; the Woman's Board had come into existence and developed its work within this period. While the total number of disciples in the foreign missions was less than 3,000 in 1870, there were added to the Church in the single year 1894 3,141 converts, and the medical missions were caring for the bodies as well as the souls of men. The number of theological seminaries had been increased by 3, the number of their students had been doubled, and their financial resources had been quadrupled. The first organization of women for Church work within the denomination was formed in Philadelphia in 1870. The establishment of the Woman's Foreign Missionary Society was followed in time by the organization of 5 other similar societies in different parts of the Church. The Woman's Executive Committee of Home Missions was organized in 1878, and the work of the missions among the freedmen was assigned to its care in 1885. The women's societies had contributed the sum of \$630,000 to home and foreign missionary work. From 1870 to 1894 1,040,949 persons, of whom 362,344 were adults, were added to the Church on profession of faith; and 362,344 adults and 515,559 infants were baptized.

The converts added to the Church from 1789, the date of the first General Assembly, until 1869, a period of eighty years, numbered about 830,000, as against 1,040,000 persons added on

profession during the past twenty-five years, and the total benevolent gifts of the period first named were not in excess of \$19,000,000, as against \$71,000,000 for the second period.

**II. Presbyterian Church in the United States.**—The following is a summary of the statistics of this Church, which were presented to the General Assembly in May: Number of synods, 13; of presbyteries, 74; of ministers, 1,337; of candidates, 425; of licentiates, 79; of churches, 2,776; of churches organized, 59; of communicants, 203,999; of members added during the year on examination, 13,598; of baptisms, 5,031 of adults and 5,502 of infants; of baptized noncommunicants, 35,346; of teachers in Sunday schools and Bible classes, 18,204; of pupils in the same, 136,069. Amounts of contributions: For Assembly's home missions, \$32,760; for local home missions, \$98,362; for the invalid fund, \$13,256; for foreign missions, \$111,877; for education, \$51,848; for publication, \$7,469; for colored evangelization, \$9,623; for the Bible cause, \$4,432; presbyterial contributions, \$14,073; for pastors' salaries, \$772,793; congregational contributions, \$667,152; miscellaneous, \$96,481; total contributions, \$1,880,126. The number of communicants is 4,832 greater, and the total amount of contributions \$8,673 less than in 1894. The reports also record 69 censures, 67 ordinations, and 138 installations of ministers, and give the number of ruling elders as 8,484 and of deacons as 6,895.

The total receipts for the year of the Executive Committee on Education had been \$22,305. Two hundred and forty-two candidates were assisted in sums of from \$25 to \$75 each.

The Executive Committee of Publication reported total net assets of \$103,849. Ten colporteurs had been employed, who had distributed books and tracts valued at \$7,433. The publishing department had sent out 132,000 copies of books, tracts, etc. Forty-three publications had been issued, 11 of which were new.

The Executive Committee of Home Missions returned its total income for the year as having been \$48,877. The receipts for the home mission department had been \$32,867, of which \$20,095 had been expended in the support of 86 ministers and 2 candidates. Seven teachers had also been supported. The receipts for the invalid fund had been \$12,521. One hundred and thirty-four cases had been aided. From the regular loan fund, which was instituted by the Assembly of 1886, \$6,525 had been loaned to 47 white congregations and \$255 to 5 colored congregations, to aid in the erection or repair of church buildings. The total amount loaned up to March 31, 1895, had been \$6,780, of which \$2,683 had been paid. From the William A. Moore fund of \$5,000, left to be loaned at 3 per cent. to feeble congregations to enable them to erect houses of worship, \$1,350 had been loaned during the year to 5 churches. The amount loaned had been \$3,050 to 11 congregations.

Reports were made of 5 theological seminaries—viz., Union Seminary, Virginia, 5 professors and 70 students; the divinity school of Southwestern Presbyterian University, 6 professors and 30 students; Louisville Seminary, 6 professors and 52 students; Columbia Seminary, 37 students; Austin Seminary, no particulars.

The Executive Committee on Colored Evangelization, in its fourth annual report, returned the expenditure for the year as having been \$3,200, and reported that \$1,211 were in the treasury. The work of the committee and of the Institute for Training Colored Ministers, at Tuscaloosa, Ala., had been hampered for lack of funds. A tract of 300 acres of land had been obtained, on which a building for church and school purposes was in course of erection. The committee hoped to be able to begin at an early day a more commodious building for school and dormitory purposes; also machine and carpenters' shops, blacksmith shops, brickyards, sawmills, and other needed improvements. At least \$6,000 were needed to get the school into proper condition. Many of the best students coming to the institute were married men, some of them with large families.

The Assembly's Home and School, at Fredericksburg, Va., returned assets of \$27,750, which were \$14,100 in excess of indebtedness. The object of this institution is to maintain and educate the orphans of ministers, the children of the foreign missionaries who have to be sent home for education, and the children of the home missionaries who labor in fields destitute of educational facilities upon salaries insufficient for the education of their children.

A training school, designed to give a "Scriptural and sensible method of training for Christian work, especially for young women who desire to be fitted for home or foreign missionaries," was to be opened at Fredericksburg in September, 1895.

The receipts for foreign missions were \$132,333, or \$9,106 less than the receipts of the previous year, and the disbursements exceeded the receipts by \$1,377. The fiscal year had closed without debt and leaving a balance in the treasury, including the Congo Boat fund, of \$16,865. Twelve new missionaries had been sent out, 2 missionaries had died, and 5 had returned to the United States. On account of dissensions that had occurred there, the Cuba mission had been suspended for the present. A project for building a boat for the use of the missions on the Congo river, for which \$10,380 had been contributed had been delayed till the need for the boat became more evident.

The General Assembly met at Dallas, Texas, May 16. The Rev. C. R. Hemphill, D. D., of Louisville, Ky., was unanimously chosen moderator. A number of overtures were presented on the subject of organic union with the Northern Church, some of which asked for the appointment of a committee of 9 to confer with a similar committee of that Church, while a variety of views were expressed in the others. To these a reply, unanimously adopted, was returned, that "the Assembly does not deem it wise to agitate these questions at this time, and places on record its sentiments of sincere regard and Christian affection for that honored branch of the great Presbyterian Church, with whom we now have the closest fraternal relations." A letter was read from the Franco-American Evangelization Society, asking for sympathy and encouragement in its efforts, in reply to which a minute was adopted recording and publishing the "tender love of the Assem-

bly to the Huguenot Church in France, commending it to the prayers, sympathies, and help of the people," and inviting the stronger churches to contribute regularly to the Franco-American commission. An invitation having been received from a committee of the Synod of New Jersey to participate in the celebration June 4, 1895, of the earliest meeting of a presbytery in the United States, which took place near Monmouth, N. J., in 1706, the Assembly expressed its great interest in all matters concerning the founding and early struggles of the Presbyterians in this country, and named delegates to attend the celebration at their own expense. On the subject of the organization of an independent colored Presbyterian Church, the Assembly declared that the ultimate carrying out of such a measure had always been the policy of the Church. During the past five years steady progress had been made toward this goal. The question of organization was referred to the presbyteries and synods concerned for such action as they might see proper. If their concurrence is obtained, and if the funds raised justify such organization in the judgment of the Committee of Colored Evangelization, a special committee was authorized to determine the time and place for effecting the organization and represent the Assembly in the proceedings. A report on young people's societies was adopted with a constitution and form of government. The action of the previous Assembly declining to forbid affiliation with the societies of other Churches and enjoining the sessions to maintain a careful oversight of the nature and influence of such associations was reiterated. A special warning was given "against the danger to which young and inexperienced persons are exposed from attendance upon large and promiscuous conventions which are not under ecclesiastical control." The Committee of Education was authorized to grant aid to unmarried women who are under the care of the Committee of Foreign Missions while pursuing their studies in the training schools of the Church. The standing Committee on the Sabbath reported that only a few presbyteries mentioned improvement in their reports; that a general survey of the field showed a "down-grade" movement; that the growing tendency among Christians to admit the secular spirit into their homes was to be deplored; and that it was a matter of deep regret that so wide a difference exists among Christians as to what constitute lawful and unlawful works on the Sabbath day. The Permanent Committee on the Sabbath, which was commissioned by the previous General Assembly to consider the whole question of Sabbath observance under the changed conditions of modern life, reported that

The general trend is in the direction of looser views and practices, and that whatever may be affirmed by God's people the day is unmistakably losing its hold upon the masses. If, however, in this respect the line was sharply drawn between the Churches and the world, if the demoralization and the decline were confined simply to the outside world, there would be little or no ground for uneasiness; but, unfortunately, this is not the case. The spirit of indifference is likewise invading the ranks of the Church. There is a large class among all denomina-



tions . . . who, with the exception of business and the more servile forms of labor, would not scruple to use the Sabbath as any other day, especially in the direction of recreation and pleasure. . . . It is this seeming indifference as well as palpable disloyalty to the day on the part of so many of its professed friends that so much emboldens the world in setting aside its authority. Only let the Churches and Christian people be true to their professions and the enemies of the Lord will never be able to shake, much less overturn this stronghold of Christianity. If ever overthrown, it will be more through the perfidy of its friends than the assaults of its foes. Not until all the different denominations of Christians stand shoulder to shoulder in the breach and unitedly maintain the absolute and perpetual sanctity of this day of the Lord can we really and truly expect the outside world to render that reverence and respect which are justly its due.

In answer to an overture from the Presbytery of Macon complaining of the employment of hired and professional singers in the churches the Assembly referred the presbytery to the paragraph in the Book of Church Order, in which the power of the church session is defined, and the session of each church is directed "to take the oversight of the singing in the public worship of God," and enjoined such oversight by the sessions as would make the music conform to the Church standards. The Assembly reiterated the deliverances of previous Assemblies on the subject of temperance, and "without any reference to the political aspect of the temperance reform," urged upon all Christians "the duty of using all legitimate means to promote the cause of good citizenship, especially by refusing to be identified with the liquor traffic"; and deprecated the inconsistency "of professing Christians who rent their property for immoral purposes." A letter of fraternal greeting was sent to the Northern General Assembly, in which, after congratulating that body upon attaining the twenty-fifth anniversary of the United Church, the Assembly said:

We are fully one with you in all the fundamental constituents of the holy Catholic Church. Most especially, brethren beloved, we thank you for that truly fraternal spirit and delicate appreciation of our spirit which makes your letter so very precious and so fragrant to us. Let us walk together in full fraternity of love and sympathy in all the great numberless things in which we are agreed, and thus be encouraged to pray and hope that if in anything we differ God may reveal even that unto us and take away every blemish.

**III. United Presbyterian Church in North America.**—The statistical tables of this Church for 1895 give it 801 ministers, 895 churches, and 106,755 communicants.

The missions in India were carried on at 11 mission centers or districts, with 11 ordained American missionaries, 13 single women, 2 women medical missionaries, 6 native ministers, 193 other native helpers, 3,058 communicant members, and 3,289 baptized adults, making a total of 6,347 baptized members; and 126 schools, with 4,600 pupils. The contributions by natives directly for Church purposes were \$442. More than 30,000 patients—old and new—were treated in the hospitals. The mission in Egypt returned 15 ordained American missionaries and their wives and 8 unmarried woman missionaries; 33 organized congregations, 19 of which

had native pastors, while work was carried on in 134 other places; 4,554 members, of whom 1,939 were women, and 500 were added during 1894; 21 licentiates and 9 students of theology; 110 Sabbath schools with 5,365 pupils, and 119 week-day schools with 7,975 pupils. The native members had contributed \$11,503, and had paid more than \$17,000 for tuition, etc. The fact was noticed that the proportion of female members to male members was increasing from year to year.

The General Assembly met in Pittsburg, Pa., May 22. The Rev. J. B. McMichael, D. D., was chosen moderator. An organ having been used during the services at the opening of the Assembly, the Rev. Dr. J. G. Carson, who had been one of the most active opponents of the toleration of instrumental music in worship, and who had signed a protest against the action of the Assembly in 1883 permitting it as well as other protests on the subject, asked leave to change his protests into a dissent.

He said that he had signed the protests in good faith and with the conviction that he was under obligations to prosecute his efforts to have the Church retrace its steps, and also that in the event of his failure to do this he might feel constrained to withdraw from the Church. The time had now come when he must decide. With his protests on record, he was, according to his convictions, restrained from taking part in worship when the instrument was used. He found himself alone; his brethren of like views did not feel constrained to refuse to join in such worship under present circumstances. He was unwilling to separate himself from the Church. It was the privilege of every member to enter his dissent from any action taken, thus freeing his conscience without the sense of obligation to prosecute his opposition or to separate himself. There was now no hope of having the Church change its course on this subject, and he wished to be in a position to aid his brethren in worship and work. His protest was entered on the minutes.

An appeal against the action of the Synod of Ohio confirming the decision of the lower courts was made by Mr. J. K. Andrew, who had been suspended by the session of the Church in Londonderry, Ohio, for "making determined opposition to one of the principles of the United Presbyterian Church, viz., that the first day of the week is the holy Sabbath." The Assembly decided that "the complainant, by his plea against his own public profession and against the public profession of the Church, can claim no standing in the Church." The Committee on Union with the Holland Christian Reformed Church reported as the result of a conference with the committee of that Church and of a statement of its doctrines and usages that there appeared to be a substantial agreement between the two Churches, even to the details of their distinctive principles. But as there was a difference of nationality and of historic life an organic union was not now practicable. Instead thereof a plan of full mutual recognition was proposed, providing for a constant interchange of fraternal delegates, for the exchange of pulpits by ministers, for liberty to congregations of either body to call ministers from the other, for mutual recognition of certificates of membership, and for co-operation in mission work. The report was adopted, and a committee was appointed to visit the Holland Synod of 1896. The

canvass of the votes of the presbyteries on the two overtures concerning control by the General Assembly over the theological seminaries, which had been sent down in the previous year, showed that both overtures had been adopted by very large majorities. The overtures were:

1. Shall the General Assembly have the veto power in the election of professors in our theological seminaries?
2. Shall the General Assembly have the power to remove a professor for unsoundness in the faith?

The overtures were declared enacted as a part of the constitutional law of the Church, to be entered as such in the Book of Government on the approval by the presbyteries of the necessary changes to be made in that book, provided that this action was not to be taken as interfering with the vested rights of synods exercising control over existing seminaries further than may be indicated in the language of the overtures themselves. It was ordered that the directors of the seminaries be required to report annually on all matters coming under the oversight of the Assembly. A committee was appointed to negotiate with the synods having control of theological seminaries with a view to the adjustment of any apparent or alleged discrepancies between this action and their chartered rights.

**IV. Reformed Presbyterian Church.**—The Synod of the Reformed Presbyterian Church in North America met at Denver, Col., June 6. The Rev. J. Milligan Wylie, of Denver, was chosen moderator. The condition of the mission in Turkey, which was embarrassed by opposition of the officers of the Government, was considered. The subject of the appointment of missionaries to China, decided upon three years before, but not yet carried into execution, was referred to the Board of Foreign Missions. More than \$4,000 had been deposited in the treasury for the purpose of this work. The report on national reform recognized in the society called the National Reform Association, an organization which aimed to provide a way by which all who favor such a radical change in the Constitution of the United States as will make it distinctively Christian and yet are not prepared to accept the Covenanter Church's position of political dissent, "can consistently co-operate in a common effort to bring this nation into acknowledged subjection to Christ." The association was therefore recommended to the continued and hearty support of the members of the Church, and \$7,000 was appropriated to assist in its work. The report on "Testimony bearing," or the declaration of political dissent, showed that the work had been carried on with vigor, and the appointment of Dr. McFarland as the Synod's lecturer on the subject was continued. A report on co-operation with the Woman's Christian Temperance Union, the Young Men's Christian Association, the Christian Endeavor societies, etc., recognized such bodies as evidently the outgrowth of the Christian religion and the result of the Spirit's operation, and as calling for the co-operation of all Christians "so far as they are right as to their objects and the means used in their prosecution." Yet, inasmuch as the Synod condemned entirely "the use of uninspired psalmody in the worship of God" it recom-

mended that the people of the Church be warned when taking part in conventions for moral reform and other purposes where human compositions are used in praise not to participate in their use; and that the influence of the Synod be used so far as possible to have an "inspired Psalmody" used in all these conventions. The Theological Seminary was declared open for godly women who desire to fit themselves for missionary or evangelistic work. The resolution is interpreted as not contemplating the licensing and ordaining of women to preach the Gospel, but the better qualification of those who do missionary work at home or abroad for their calling. Thanks were voted to the Government of the United States for protection given to the missionaries in Turkey. Efforts to bring the mission churches in Syria to a standard of self-support were advised.

**V. Cumberland Presbyterian Church.**—This Church returns for 1895 1,704 ministers, 2,884 churches, and 193,393 communicants. The Cumberland Presbyterian Church, Colored, has 400 ministers, 250 churches, and 13,250 members.

The receipts of the Board of Education for the year had been \$10,092, or \$1,605 more than in the previous year. The number of probationers in schools of all grades was returned as 225.

The Board of Publication reported that the indebtedness of the publishing house had been reduced by about \$4,000, while \$14,782 were due it, and that the net gain of the year was more than \$3,000. The sales amounted to \$10,981.

Of the recorded Christian Endeavor societies, 550 in number, with a probable membership of 16,000, only 350 had reported, with 12,000 members. Ninety-two of these were junior societies, with 2,265 members.

Five educational institutions—Cumberland University, Lincoln University, Missouri Valley College, Trinity University, and Waynesburg College—returned 1,040 literary students, 193 ministerial and 78 law students, and 113 students not classified, with funds: productive endowment, \$311,884; nonproductive endowment, \$123,000; and buildings and grounds, \$375,000.

The Board of Missions returned the total amount received for its work as having been \$71,884, the largest sum ever reported in a single year. It had the care of 21 home-mission churches, while much activity was manifested in State organizations. The foreign work was carried on in Mexico, where a further development of the schools was advised, and in Japan. The sum of \$2,183 had been loaned in the Church Election Department, in behalf of which increased interest appeared to be manifested in the churches.

The treasurer of the Woman's Board of Foreign Missions reported that the receipts for the year had been \$15,267, or including the balance from the previous year, \$18,685.

The sixty-fifth General Assembly met in Meridian, Miss., May 16. The Rev. M. B. De Witt, D. D., of Missouri, was chosen moderator. An appeal was presented from Nolin Presbytery, asking for a reopening of the case of Mrs. Woosley, which arose in the General Assembly of 1893, and for a deliverance as to her rights as an ordained preacher. Two reports were presented. The majority report denied the validity of the



action of the Kentucky Synod declaring Mrs. Woosley's ordination invalid and also of the action of the General Assembly, and advised that the case be not reopened. The minority report held that the General Assembly at Eugene, Oregon, did, by consent of Mrs. Woosley and those who agitated the question, take jurisdiction of the subject, that it confirmed the action of the Kentucky Synod and declared the ordination of Mrs. Woosley invalid, and that its decision was final. The conclusion was reached that Nolin Presbytery had not regarded the authority of the higher courts, and hence the appeal should be dismissed. The minority report was adopted. A minute was adopted referring to the theological faculty a proposition contemplating the delivery of a course of lectures on the Holy Spirit, and declaring that the nomination of professors by the General Assembly would not be in keeping with the original agreement concerning the selection of professors; also expressing pleasure at efforts that were being made by the Synod of Illinois to found a divinity school in connection with Chicago University for the proper training of Cumberland Presbyterian young men. A declaration was made in favor of systematic and proportionate giving in the proportion of at least one tenth of the giver's income for the support of Christian work, and measures were advised for encouraging the general adoption of the plan. The report on temperance declared it to be the duty of Christian citizens to vote and labor for the suppression of the liquor traffic. The Assembly advised that a Christian Endeavor union be formed in every presbytery, disapproved of Union Christian Endeavor societies, and suggested that a series of books or tracts for the young people be prepared on the subjects of the history of the Cumberland Presbyterian Church, a statement of Christian doctrine and the doctrine of the Cumberland Presbyterian Church, systematic giving, the history and claims of the Church enterprises, Sunday schools and Sunday-school work, the history of Cumberland Presbyterian Endeavor work, and brief biographies of the men and women of the Church. The report on Sabbath observance recommended that ministers, church officers, and members pledge themselves to be more careful in keeping the Sabbath day holy; declared pastors and elders to be largely responsible for the growing neglect of the Sabbath; and condemned Sunday railroad trains, Sunday newspapers, and Sunday visiting. On the subject of Presbyterian federation the Assembly declared that no gain would come to the Church by entering the proposed federation, while it would involve additional and needless machinery and expense, and therefore declined to approve the plan. Presbyteries were instructed, under penalty of censure, and if necessary of dissolution, to demand that all candidates for ordination shall have proper training and education.

The General Assembly of the Cumberland Presbyterian Church, Colored, met in Nashville, Tenn., May 6. The Rev. Pinkney Price, of Topeka, Kan., was elected moderator. About 25 commissioners were in attendance, 19 of whom were ministers. Twelve presbyteries, in the States of Tennessee, Kentucky, Alabama, Kansas, Missouri, and Illinois, were represented. A

committee was appointed to select a place for a denominational school and put the school in operation.

#### VI. Presbyterian Church in Canada.—

The following is a summary of the statistical reports of this Church presented to the General Assembly in June: Number of churches and stations, 2,339; of sittings, 517,517; of families, 93,635; of communicants, 179,579; of persons engaged in Sabbath-school work, 17,443; of members of Sabbath school and Bible classes, 154,639; of baptisms during the year, 1,368 of adults and 11,029 of infants; of additions on profession, 12,922. Amount of contributions: To the Home Mission fund, \$63,703; to the Augmentation fund, \$31,407; to French evangelization, \$25,239; to the Foreign Mission fund, by congregations, \$59,688; through the Woman's Foreign Missionary societies, \$98,770; to the Aged and Infirm Ministers' fund, \$9,607; to the Endowment fund, \$6,005; to the Widows' and Orphans' fund, \$5,654; to the Assembly Expense fund, \$3,906. Stipends received from all sources, \$898,248, of which \$828,785 were paid by congregations alone. The total payments for congregational objects were \$1,719,988; payments to the college funds, ordinary, were \$24,242; and to the special fund, \$17,685.

Sixteen presbyteries reported 1,888 Sabbath schools, with 17,527 officers and teachers and 153,013 pupils; while the contributions of the schools were returned at \$82,008.

The total receipts for French evangelization were \$34,115. Twenty-five pastors, ordained missionaries, and licentiates, 10 student missionaries, 7 colporteurs, and 23 teachers were employed in the work, in 36 mission fields, with 93 preaching stations. Two hundred and three members, 50 of whom were English, had been added during the year; and the whole number of members was 1,105. The Sabbath schools had been attended by 918 pupils. The 20 mission day schools returned 600 enrolled pupils.

The total receipts for home missions, including what had been expended by the presbyteries for the work, had been \$115,714. The receipts of the Eastern section—\$12,280—showed a threefold increase in ten years. This section returned 255 laborers at work. The board of the Western section had 344 mission fields, with 325 missionaries, 14,500 communicants, and 36,000 persons, representing nearly 12,000 families, attending the weekly services. The sum of \$69,000 had been contributed for the support of the "ordinances."

The foreign missions included those to the New Hebrides and Trinidad, for which \$27,485 had been received; those in Formosa, where were 4 ordained missionaries, 60 native unordained preachers, and 1,738 communicants; Honan, China, and India; those to the Indians, on 21 reserves in Manitoba and the Northwest Territories, with the Alburni mission as a special work; the Chinese mission in British Columbia; and the Jewish mission in Palestine.

The General Assembly met in London, Ontario, June 13. The Rev. James Robertson was chosen moderator. On the subject of Church union the Assembly reaffirmed its earnest desire to promote, on a scriptural basis, the union of churches which "hold the Head" and are

rendering faithful service to him; expressed its readiness to co-operate with all evangelical churches "in advancing all those holy and beneficent ends for which the Church of Christ has been instituted"; and reappointed its Committee on Union, as in past years, giving it power to confer with any similar bodies representing other churches, regarding matters relating to unions or corporations, as opportunity might offer. The report on Sabbath observance represented that the subject was pressing upon public attention with increasing intensity as vitally identified with the welfare of society and the progress of religion. The Assembly recommended that general conferences be held upon it in every presbytery, and urged the importance of influencing legislators, through deputations or otherwise, to "right views of the Sabbath in relation to national welfare." In reference to the difficulties in the province of Manitoba in connection with the matter of public education, the Assembly resolved:

1. That it belongs to the state to see that the people receive such a measure of education as shall qualify them for the ordinary duties of citizenship. 2. While the duty of giving definite and detailed religious teaching must rest, above all, on the parent and the Church, yet the system of public instruction should be based upon and pervaded by the principles of Christianity, and should give distinct place to the reading of the Scriptures and prayer. 3. The General Assembly does not regard the system of separate schools with favor, and is strongly opposed to this system in Canada. The Assembly would therefore deplore any attempt to interfere with the freedom of Manitoba in determining and regulating its own educational affairs. Such a course in the judgment of the Assembly could result only in evil, and is not, we believe, demanded by any supposed compact between the province and the Dominion, or between different classes of people in the province itself. 4. The General Assembly hopes that this view will prevail with the authorities of the Dominion, and would rejoice should conference between the province and the Dominion lead to a proper and harmonious adjustment in accordance with the view above expressed.

The report on temperance, reiterated the expression of previous Assemblies that "so far as legislation is concerned, nothing short of prohibition, rigidly enforced by the proper authorities, should ever be accepted as final and satisfactory."

**VII. Free Church of Scotland.**—The General Assembly of the Free Church of Scotland met in Edinburgh May 28. The Rev. Dr. J. Hood Wilson was chosen moderator. With reference to union with the United Presbyterian Church, the Assembly declared that it recognized that union could not be wisely taken until an earnest conviction in favor of it pervaded both Churches, and directed the appointment of a committee to consider the subject, and to embrace every opportunity of placing itself in communication with the United Presbyterian Church. The report on disestablishment maintained that disestablishment and disendowment were acts of justice to the Scottish nation, and that the establishment was the only substantial hindrance to union; and it insisted upon the urgency of the question and reiterated the claim upon the Government for an early and final settlement of it.

In answer to an overture asking the Assembly to inquire into the views of Prof. Drummond as

expressed in his book "The Ascent of Man," the Assembly declared that it could not find grounds for action. It was observed by Principal Rainy, in the discussion on this subject, that ministers and elders were scarcely equipped for dealing with the scientific questions raised, and must allow some liberty of action to a man whom they had placed in a chair the work of which had to run on scientific lines. The Church should not at this time be compelled to formulate its position toward modern scientific theories.

**VIII. Church of Scotland.**—The summary of the income of the schemes and funds of the Church of Scotland for 1894 shows that the total income was £167,641, as against £62,896 in 1893.

The General Assembly met in Edinburgh May 28. The Rev. Dr. Donald MacLeod was chosen moderator. The report of the Colonial Committee called attention to the great good that might be done in South Africa if an attempt was made to meet the spiritual needs of Scotchmen who were there seeking fortune and adventure. The expenditure for home missions had been £65,000. A larger number of agents had been employed. The Committee on Foreign Missions represented that a reduction of expenditure of £2,344 would be required to avoid debt. The report on Church interests declared that as a principle of united action religious equality did not at present exist. The men who had participated in a voluntary conference of members of the 3 largest Presbyterian churches of Scotland (see below) could be honored for the part they had taken, but they should remember that they were not messengers from the Church, and that they were bound to abide by the declarations of the Assembly. The negotiations, whatever might be their result, must not be allowed to affect the policy of the committee.

**IX. United Presbyterian Church of Scotland.**—The Synod of the United Presbyterian Church in Scotland met in Edinburgh May 7. The Rev. David Kinnear was chosen moderator. An occasion having been afforded by the presentation of a protest against the act of a minister who had admitted the Rev. David Macrae, of Dundee, excluded, to his pulpit, the Synod, waiving the consideration of personality, expressed disapproval of any minister of the Church allowing any one who had been declared no longer a minister of the Church to occupy his pulpit. A resolution was passed expressing regret that the Government had not been able to introduce its bill for disestablishment and disendowment; regarding as a sign of progress the second reading of the Government's disestablishment bill for Wales; avowing the determination to maintain and advance the voluntary principles of the Church; and pressing on the Executive Committee to do all in its power to hasten the legislative triumph of religious equality.

**Conference of Scotch Presbyterian Churches.**—A number of representative men of the 3 Presbyterian Churches of Scotland held several conferences during the year relating to the question of union, the aim of which was to draw out and present in a distinct form the extent of agreement existing even on questions coming within the region of controversy. The various findings are given in the published re-



port of the results, under three headings, the first of which relates to reformation and revolutionary statutes. While approving of these statutes in so far as they contain a rejection by the state of the usurped claims of the papal Church, the conferences disapproved of them as embodying persecuting principles. It was found that all the members of the conference were agreed in holding that the civil courts are not entitled by the word of God to interfere in the spiritual acts of the Church, and that the rights of the Church in matters spiritual are based not on civil statutes, but on the foundation laid by Christ. "Christ," the finding says, "has conferred on the people individually a spiritual freedom which neither civil nor ecclesiastical authorities are entitled to violate and abridge." The third heading relates to national religion, and here the articles of agreement of the Free and United Presbyterian Churches formulated in 1869 are adopted as a reasonable basis from which to start negotiations for union. An additional statement to these articles contains the assertion: "In order that religion may have national recognition and that a nation may give expression to the homage which it owes to God and to his laws, religion ought to be acknowledged by the state in its Constitution, legislation, and conduct."

**X. Presbyterian Church in Ireland.**—The statistical returns of the Presbyterian Church in Ireland for 1894 give the number of ministers as 652, with 56 retired ministers; of congregations as 559, with 104,578 members, representing 82,662 families; and of Sabbath schools as 1,092, with 115,202 members, including those in Bible classes. The whole amount of contributions in 1894 was £193,507.

The General Assembly met in Dublin, June 3. The Rev. G. Buick, LL.D., of Cullybackey, was chosen moderator. The principal topic of discussion concerned the use of hymns in worship. The policy of the Church since its organization by the Union of Synods in 1841 had been to give its sanction of authorization only to the Psalms of David, but to permit congregations to use, on their own responsibility, paraphrases and hymns. A motion was made to withdraw this permission, but was defeated by a large majority, and the Assembly decided that uninspired hymns might be used.

**XI. Presbyterian Church in England.**—The Synod of the Presbyterian Church in England met at Newcastle-on-Tyne April 29. The Rev. Richard Leith was chosen moderator. The predominant subject of interest at the meeting was a proposition to remove the college from London to Cambridge, which was carried. A site, together with the sum of £50,000, had been offered the institution at Cambridge. Five ministers were authorized to be set apart for evangelistic work during the year. The appointment was authorized of an agent who should devote his whole energy to the organization of a church building fund, for which £50,000 were desired. Expressions of regret, to be embodied in a pastoral address, were made at the lack of spiritual vigor and aggressiveness in some parts of the Church indicated in the returns, and at the spirit of indifference manifested outside. The temperance society connected with the Church

was represented as making rapid progress. The instruction of youth by Bible teaching in families was commended. The income for foreign missions had been £22,168, showing a deficiency of £3,000. The work of the missions in China had not suffered by the war. It included 125 preaching stations in Amoy, Swatow, Formosa, and Singapore, with 56 European agents, 117 native evangelists, 13 native pastors supported by their congregations, 10 hospitals, and 4,464 communicants. The native Christians were sending missionaries to their countrymen. The Women's Missionary Association had 23 missionaries (included in the previous enumeration) in China. The society has also small missions in India, and to the Jews in London and in Syria. The total amount raised in the Church from all sources during the year was £234,343. Four hundred and fifty Sunday schools returned 7,532 teachers and 82,596 pupils. An increase of 1,412 was reported in the number of communicants.

## **XII. Welsh Calvinistic Methodist Church.**

—The following is a summary of the statistics of this body which were presented to the Assembly in June: Number of churches, 1,308; of chapels and preaching stations, 1,486; of ministers, 720; of communicants, 145,094; of children in the churches, 66,431; of probationers, 2,931; total in the churches, 214,456; of Sunday schools, 1,602, with 195,354 pupils and teachers; of adherents, including communicants, 306,669; total amount of collections, £230,101. The year's increase in church membership was 37,670.

The General Assembly met in London June 10. The Rev. Griffith Ellis was chosen moderator. The parliamentary committee presented a report embodying a plea for disestablishment, which was adopted. The report included a statement of the comparative strength of the 4 principal nonconformist denominations in the principality and of the Established Church in the 4 Welsh dioceses, from which it appeared that among less than 2,000,000 of people the 4 denominations have 381,795 communicants and 888,357 adherents; and the Established Church has 118,756 communicants and 258,902 adherents; majority in favor of the nonconformists, 263,039 communicants and 622,455 adherents. Further, that the nonconformists provide sittings for more than 1,100,000 people, and the Established Church for 450,000; that since 1816 nonconformist chapels have increased from 993 to 4,252, or 428 per cent. in less than eighty years; that between 1872 and 1892 there was an increase of more than 100,000 nonconformist communicants; and that between 1870 and 1893 the contributions of the Calvinistic Church increased 90 per cent. A report on the Welsh abroad showed that between 150,000 and 160,000 Welsh-speaking people were residing in England and that 28,000 people who spoke Welsh lived in London, of whom 8,000 attended Welsh churches, while it was believed that about 4,000 attended English churches, leaving 16,000 speaking Welsh who neglect the means of grace. The financial report showed that the liabilities of the connection were cleared off every six years, while by continued church extension, etc., its debts were kept in the neighborhood of £300,000; and this feature was regarded as a mark of prosperity and enterprise. The "Forward Evangelical Move-

ment," a new scheme of preaching to the masses of people outside the churches is called, now three years old, had 17 evangelists at work, and congregations numbering in the aggregate 6,000 people, with an annual income of £2,000. Eighteen centers of operations had been instituted in the most populous districts of South Wales, and 1 in London, and 2 new ones were to be opened.

### **XIII. Presbyterian Union in Australia.**—

A scheme for the Federal Union of the Presbyterian Union of the Presbyterian churches of Australia and Tasmania was agreed upon at a Federal General Assembly held in Sydney in 1895. The acceptance was advised as a basis of union of the Holy Scriptures as the supreme standard and the Confession of Faith as a subordinate standard, with a declaratory statement.

**PRINCE EDWARD ISLAND**, an eastern province of the Dominion of Canada; population, about 110,000.

**Government.**—The Executive Council in 1894-'95 was as follows: Premier and Attorney-General, Hon. F. Peters; Treasurer and Commissioner of Public Lands, Hon. A. Macmillan; Commissioner of Public Works, Hon. J. R. McLean; members of Council without portfolio, Hon. D. Farquharson, Hon. A. Laird, Hon. P. Sinclair, Hon. J. W. Richards, Hon. G. Forbes, Hon. A. McLaughlin.

**Finances.**—The receipts for the year ending Dec. 31, 1894, were as follows: Dominion subsidy, \$183,029.37; public lands, \$36,250.08; provincial land tax, \$30,499.38; income tax, \$6,221.53; commercial traveler's license, \$3,825; incorporated companies, \$3,900; ferries, \$5,154.05; probonotary offices, \$2,386.83; registry offices, \$5,281.99; county courts, \$1,387.88; miscellaneous, \$4,531.87; total, \$282,467.98.

The ordinary expenditure for the year was \$280,595.90, and the special expenditure, mainly for bridges, was \$22,036.29, leaving a deficit of \$20,000. The imposition of new taxes, in 1893, on certain classes of traders, on incomes, on certain incorporated companies, and on successions, did not make ends meet, as was hoped.

**Legislation.**—The second session of the thirty-second Assembly was opened at Charlottetown by Lieut.-Gov. Howlan, March 21, 1895. J. H. Commiskey was re-elected Speaker. The following acts, among others, were passed:

To provide for the incorporation of cheese and butter manufacturing associations.

Respecting seduction.

To empower the Government of this province to sell certain lands.

For the reclamation of marsh lands.

To prevent the spread of black knot on plum and cherry trees.

**Education.**—The educational affairs of the province are under the control of a Board of Education appointed by the Government, and of a chief superintendent. The Government expenditure in 1894 was \$122,077, and that of the districts under school-board assessments was \$37,854. It was estimated that there were 24,000 children of school age, of whom 22,221 attended school during some part of the year. The figures show 401 schools, compared with 387 in 1892 and 395 in 1893; 401 teachers, 16,036 pupils, and an average attendance of 8,709.

**Fisheries.**—The province had 151 fishermen in vessels and 3,178 in boats during 1894. Its vessels, boats, wharves, nets, and general fishing appliances were valued at \$468,736, an increase of \$342,000 in eleven years. The value of the yield was \$1,119,738, and the exports of the province \$447,813.

The distribution and value of the catch in 1894 were as follow: Salmon, \$2,025; herring, \$203,909; haddock, \$6,002; hake, \$28,899; halibut, \$820; oysters, \$96,220; mackerel, \$145,625; cod, \$107,892; lobsters, \$380,770; pollock, \$28,899; smelts, \$36,683; others, \$113,893.

The registered seagoing tonnage carrying cargo into and out of the province was 104,710 tons during 1894. The imports of dutiable goods in 1894 were valued at \$354,153, with a duty of \$161,836; free goods at \$196,839.

### **PROTESTANT EPISCOPAL CHURCH IN THE UNITED STATES.**

Comparison of the diocesan statistics for 1894 and 1895 shows a gain during the year in every particular, except that the number of deacons ordained was 28 fewer than last year. The general summary is as follows: Number of dioceses, 58; missionary districts in the United States, 19; missionary jurisdictions in foreign lands, 7; clergy (bishops, 79; priests and deacons, 4,603), 4,682; parishes and missions, 6,118; candidates for holy orders, 558; ordinations, deacons, 193; ordinations, priests, 181; baptisms, 64,752; confirmations, 45,796; communicants, 622,194; marriages, 17,257; burials, 32,677; Sunday-school teachers, 45,635; Sunday-school pupils, 422,984; total of contributions, \$13,507,429.70.

The General Convention met in Minneapolis, Minn., Oct. 2. Little of note in the way of direct legislation was accomplished. Five new dioceses were formed by the division of the sees of Maryland, California, and Kentucky, and by the erection of the missionary jurisdictions of Northern Texas and Northern Michigan into dioceses. Two new missionary jurisdictions were formed by setting off portions of the dioceses of Minnesota and North Carolina as missionary jurisdictions of Duluth and Asheville, respectively. Wyoming and Idaho were made independent missionary districts, with the present bishop in charge of both. Western Colorado was put under the charge of the Bishop of Nevada and Utah, whose title becomes Bishop of Nevada, Utah, and Western Colorado. Part of the territory under the Bishop of Western Texas was added to Northern Texas, and part to New Mexico. The title of the Missionary Bishop of Oklahoma was changed to Missionary Bishop of Oklahoma and the Indian Territory. The Rev. Peter Trimble Rowe was elected Missionary Bishop of Alaska. The revision of the constitution and canons was referred back to the Constitutional Commission, to report again to the General Convention of 1898, which was appointed to meet in Washington the first Wednesday in October, 1898. The pastoral letter issued on Oct. 18, 1894, which solemnly affirmed the virgin birth of our Lord and the inspiration of the Holy Scriptures as matters of faith which no Christian man could question, was reaffirmed by the pastoral issued from Minneapolis.

**Missions.**—The Board of Missions, consisting of the 2 houses of the General Convention and



of the Board of Managers, convened, Oct. 4, in Minneapolis, Minn., for the triennial meeting, and adjourned on Oct. 18. Resolutions of sympathy with the Armenian Christians, with the missionaries in China, and with the societies of the Church of England whose workers suffered in the recent massacre at Kucheng, and with the Bannock Indians as innocent victims of aggressive outrages, were adopted. The number of members constituting the Commission for Work among the Colored People was reduced from 21 to 15, and it was resolved: "That it be recommended to the Board of Managers to consider the feasibility of appointing at least 1 colored man, a communicant of the Church, on the commission." The following resolutions also were adopted:

That all women hereafter receiving appointment under the Board of Missions shall be required to have at least six months' training in one of our Church training schools or some kindred institution, unless the Board of Managers or the bishop to whose jurisdiction she is to be sent has personal knowledge of her fitness.

That every parish and mission of this Church is expected to contribute to the treasury of our Missionary Society annually for the next three years.

That every parish and mission which has contributed during the past year is expected to contribute annually during the next three years a sum at least one fourth larger than it gave last year.

That the Board of Missions requests the House of Bishops to commit to a special committee of its own number, to report to the next General Convention, the question of redistricting the whole of our domestic missionary territory.

The last resolution was the result of an expression of opinion by the Committee on the Reports of the Boards of Managers.

From the report of the Board of Managers the following is taken:

With regard to educational subsidies, the board has within the past year adopted the following resolution:

That in the judgment of this board it is inconsistent with the position taken by the Board of Missions in 1892 in regard to Government appropriations, for any school occupying a building or buildings owned by this Church to receive grants of money from the United States.

The gross receipts of the society for the fiscal year, including those for specials and for miscellaneous purposes, amounted to \$727,284.09. The contributions for the work of the society were \$443,813.23. Compared with the previous year, there was an increase of offerings for general missions of \$65,486.56, an increase of offerings for foreign missions of \$9,311.55, and a decrease for domestic missions of \$1,158.93. The amount received from legacies, exclusive of items for investment, was \$59,262.39. The total amount at the discretion of the board toward meeting its appropriations was \$503,075.62. In addition to this, legacies amounting to \$11,000 were received for investment. The amount received for specials (which do not help the board in meeting its appropriations) was \$44,413.45.

The number of parishes and missions on the board's books is 5,484; and of these, 3,506 (432 more than in any previous year) contributed to the work of the society during the fiscal year. The Lenten offering from Sunday schools,

amounting to \$67,471.91, was made by 2,578 schools, or 336 more than last year, the increase in offerings being \$9,363.

On account of domestic missions, the society paid out during the fiscal year \$138,797.17; Indian missions, \$48,235.02; colored missions, \$57,514.46; total, \$244,546.65. For foreign missions \$173,181.94 were paid out. The cost of administration and collection was \$26,158.43; of printing, \$14,374.13. The cash on hand Sept. 1, 1895, was \$68,551.16.

The trust funds of the society amount to \$906,550.55 at par value, or \$910,326.55 at market value. The income collected from these was \$39,901.44. The Missionary Enrollment fund amounts to \$167,596.03.

The Convention, in 1895, adopted this resolution:

That the Board of Managers is hereby directed to use so much of the Enrollment fund as it may deem necessary, and to employ such agency as it may think best for the establishment as speedily as may be, at such place as it may select, of a school for the education and evangelization of the colored people.

For domestic missions the receipts were as follow: Balance in treasury Sept. 1, 1894, \$37,504.96; cash received during year (including \$22,620.16 for Indian missions and \$15,782.04 for colored missions), \$151,042.69; half of the general offerings to the society, \$92,143.44; legacies to domestic missions, \$34,245.17; legacies for investment, \$5,500; specials, \$44,413.45; half of personal loan, \$32,500; total receipts, \$397,349.71. Expenditures in 18 missionary jurisdictions and 37 dioceses (including \$48,235.02 for Indian missions and \$57,514.46 for colored missions) were \$244,546.65; specials, \$42,957.42; interest (half), \$421.15; half cost of administration and collection, \$13,079.21; half cost of printing "Spirit of Missions," reports, etc., \$7,187.15; legacies deposited for investment, etc., \$5,650; returned to Trust fund, \$19,000; return of personal loan (half), \$32,500; balance Sept. 1, 1895, for domestic missions and specials, \$32,008.12; total, \$397,349.71.

The whole number of missionaries, clerical and lay, receiving salaries or stipends during the year was 837 (a decrease since last year of 9), and the amount appropriated for the whole work was \$269,635.

The Commission on Work among the Colored People reports the number of colored clergy as 75, an increase of 7 since last year. Of these, 44 are in priests' orders, and 13 are employed in Northern cities. The commission has confined its grants to the 16 Southern or old slave States—now divided into 23 dioceses and missionary jurisdictions—containing a population of more than 7,000,000 of persons of African descent. Last year the amount received in all was \$56,158.05, and the expenditure \$55,801.46. The returns, as far as they can be obtained, show that there are at least 130 chapels and mission stations, with 6,710 communicants, in charge of about 131 clergy, of whom more than 60 are white.

Of the 5,484 parishes and missions of the Church, 3,250 contributed to foreign missions, 635 more than last year, the amount given being by far the largest in any year. The financial condition for 1894-95 is reported as follows:

Balance Sept. 1, 1894, \$28,290.60; cash received during the year, \$108,483.66; half the general offering to the society, \$92,143.44; legacies, \$13,485.45; undesignated legacies applied to foreign missions, \$10,893.72; specials for Africa, China, Japan, etc., \$38,985.18; legacies for investment, \$5,500; withdrawn for time being from trust funds, \$21,189.48; half personal loan, \$32,500; total, \$351,471.53. Expenditures on account of missions, \$173,181.94; specials for Africa, China, Japan, etc., \$34,167.91; interest (one half), \$421.14; half cost of administration and collection, \$13,079.21; half cost of printing "Spirit of Missions," reports, etc., \$7,187.15; legacies for investment, \$5,650; return to trust funds, \$32,189.48; half personal loan, \$32,500; balance Sept. 1, 1895, for foreign missions and specials, \$53,094.69; total, \$351,471.53.

The Missionary Bishop of Cape Palmas reports that because of territory having been ceded to the French, as was mentioned last year, 35 of the principal stations and preaching places of the mission have been lost, leaving 63 stations and substations under the care of the 16 clergy connected with the Western Africa Mission, the number of communicants being 1,241, and of Sunday-school pupils 1,450.

In Japan the repairs to buildings damaged by the earthquake last year have been finished, and the construction of the Tokio hospital, St. Paul's College, and other institutions is progressing. In his report the bishop says:

One result of the war between Japan and China has been a kindlier feeling toward Christianity, a lessening of the suspicion that a Japanese can not be at the same time a good Christian and loyal to his Emperor. A way has been opened which gives us new opportunities for knowing and influencing the Japanese soldiery. The ministers of war have given every encouragement and assistance to missionaries and other Christian workers to preach and distribute Bibles and tracts to the garrisons throughout the empire. Six native Christians received official permission to go with the army as chaplains and "comforters." This permission was sought by and refused to Japanese Shinto priests.

The principal events of the year in China are the printing of a Chinese Church hymnal, the conclusion of the first portion of the revision of the Prayer Book, and the opening of the new building of St. John's College.

The work of the Church in Hayti was commended by the President of the republic in his last annual message. The formal opening of the Church of the Holy Trinity at Port au Prince took place Aug. 11, the debt upon it having been extinguished.

**The Woman's Auxiliary.**—At its triennial meeting in Baltimore in 1892 this organization resolved "That the Woman's Auxiliary place before itself, for its united offering at the next triennial, the endowment of the episcopate in a missionary jurisdiction." At the triennial service of the Auxiliary in 1895 an offering of \$55,000 was made, and later it was further resolved "That the Woman's Auxiliary set before itself as its object for the next three years the raising of a still larger sum than that of 1895 as an offering, to be a gift from the Woman's Auxiliary to the Board of Missions, to be used for the train-

ing and support of women workers in the missionary fields."

A summary of the work accomplished by the Auxiliary and its junior department in 52 dioceses and 13 missionary jurisdictions Sept. 1, 1894, to Sept. 1, 1895, shows contributions: Under appropriations for domestic missions, \$22,878.83; for foreign missions, \$23,169.67; specials for domestic missions, \$39,443.22; for foreign missions, \$51,390.30; boxes, 8,312, valued at \$181,571.91; total value of contributions, \$349,215.26, of which amount the junior department contributed \$36,427.23. Within the past three years 7 woman workers have been sent into the mission field by the Woman's Auxiliary as regular missionaries of the board—2 to Africa, 3 to China, and 2 to Alaska. The first Church hospital in the Indian Territory, the first Church hospital in Arizona (for the benefit of the Navajo Indians), and lace schools among the Chipewa Indians of Minnesota have been established.

The American Church Missionary Society, as the foreign field under its charge, has the island of Cuba and the southern division of Brazil. In Cuba the work has been suspended by the civil war. In Brazil there were 62 baptisms during the year and nearly 200 communicants, and the churches in Brazil contributed \$3,281.52, more than one third of the whole amount contributed to the support of missions through the society. The total receipts of the society were \$33,830.48, and the balance Sept. 1, 1895, was \$4,708.73. Its securities amount to \$117,293.05.

The Society for promoting Christianity among the Jews reports an increase of toleration toward its missionaries, but states that Jewish converts are expelled from their homes, deprived of a means of livelihood, and subjected to all manner of personal indignities. Its cash receipts during the year amounted to \$9,744.17; balance from old account, \$1,763.15; total, \$11,507.32. The disbursements were \$10,902.63; balance on hand Sept. 1, 1895, \$604.69.

**Building Fund Commission.**—On Sept. 1 this fund amounted to \$275,077.70, an increase during the year of \$14,022.82. Gifts, 19 in number, amounting to \$2,500, were made, and 13 other gifts, amounting to \$1,650, were voted. The total amount of gifts paid to September, 1895, is \$7,403.50. Since the last report 15 loans have been paid off and 35 new loans made. The amount that has been once loaned and returned to the fund by 105 churches is \$152,000. The total amount now outstanding on loan is \$175,247.67.

**Prayer-book Distribution.**—The Prayer-book Distribution Society, whose object is to promote the distribution of the Book of Common Prayer among the people throughout the United States, this year made its first triennial report, from which it appears that since the adoption in 1892 of the revised Prayer Book about 1,000,000 copies of that book have been published and report has been made of the grant of 195,800 copies of the prayer book and 94,488 copies of the hymnal.

**Religious Orders.**—To the religious orders for men heretofore enumerated has been added the Brotherhood of the Good Shepherd, founded in 1895, whose objects are the same as those of



the Brothers of the Church, and the Community of St. Benedict, founded in New York in 1894 and reorganized in 1895 under the rule of St. Benedict. This community is dependent for support upon voluntary contributions. Its objects are thus set forth :

To aid in revival of three of the special characteristics of the Holy Catholic and Apostolic Church in all ages and lands :

1. Honor and devotion to our blessed Lord in the blessed sacrament of his holy body and blood.

2. Honor and invocation of the holy mother of God and all saints.

3. Continuous worship of God and intercession for the peace and salvation of souls in ways only possible within the cloister.

The only requirement for admission for priest or layman is the vocation.

The Sisterhood of All Angels, Wilmington, Del., was founded during the year. In the list of diaconal communities should be included the Diaconal Community of St. Martha, Louis-

ville, Ky., organized in 1875 as a sisterhood, and reorganized as a community of deaconesses in 1881, and the Diaconal Community of St. Katharine of the diocese of Georgia, Macon, Ga., organized in 1881.

**Miscellaneous.**—Four bishops have died during the Church year. These are William Bell White Howe, sixth Bishop of South Carolina; David Buel Knickerbacker, third Bishop of Indiana; Elisha Smith Thomas, second Bishop of Kansas; and Mark Anthony De Wolfe Howe, first Bishop of Central Pennsylvania. The death of 79 clergymen is also reported. The deposition of 10 presbyters was found necessary, and 2 were restored to the ministry. John Hazen White was consecrated Bishop of Indiana, and Frank Rosebrook Millspaugh Bishop of Kansas. An event of much importance was the completion by the learned and venerable Bishop Schereschewsky of his translation of the Scriptures into the Wenglish or literary language of China.

## Q

**QUEBEC**, an eastern province of the Dominion of Canada.

**Government.**—The resignation of Hon. J. S. Hall, provincial Treasurer, on account of the loan of \$5,000,000 which had been placed in Paris during the summer, and, as he claimed, unnecessarily, was a blow to the ministry. The Premier, Hon. L. O. Taillon, assumed the treasuryship himself and appointed M. F. Hackett, of Stanstead, to be President of the Council and A. W. Morris, of Montreal, a member of the Executive without portfolio.

**Finances.**—The finances of Quebec are not easy to manage, and during the period of extravagance that lasted from 1886 to 1892 the net debt of the province increased from \$6,000,000 to \$15,000,000, and the gross debt from \$19,068,023 to \$28,731,263. In 1894 this gross indebtedness was \$30,215,272. In 1894-'95 the expenditure was \$4,195,727, and the receipts \$4,322,028.

On Nov. 26, 1895, Mr. Taillon delivered the annual budget speech. He stated that for the fiscal year ending June 30 \$187,314 had been obtained from judicial stamps instead of the \$175,000 estimated; the building fund yielded \$29,477 instead of \$10,000; the tax on commercial corporations \$160,756 or \$20,756 more than the estimate; and the tax on successions \$162,535 instead of \$40,000. Those taxes that fell short of the estimate included the Crown Lands Department, \$35,767; license law, \$35,996; manufacturing and trading licenses, \$128,067; transfers of real-estate tax, \$74,129. The expenditure on the public debt had been estimated by his predecessor at \$1,527,296; it was only \$1,486,660, the difference being due to the better credit of the province and consequent lower rates on its maturing loans.

**Legislation.**—The Legislature was opened at Quebec, Oct. 30, 1895, by Lieut.-Gov. Chapleau in a speech from the throne, of which the following passages are the most important :

My Government has endeavored as much as possible to direct dairy operations, and in order to pre-

vent overstocking of the cheese market has specially favored butter-making, and awarded prizes for creameries working in winter. The quantity of butter manufactured in winter has more than doubled during the three years that these prizes have been granted. This question of equilibrium in production having been placed on a satisfactory basis, my Government has striven to restore the reputation of butter from the province of Quebec in England, a reputation which has greatly suffered from shipments made under unsuitable circumstances. The results hitherto obtained have been most satisfactory. Butter from the province is now classed in England among the best products of a similar nature of the whole world. The exports of this article, which fell off in 1894, have again increased. The total production of our dairies of the province of Quebec, which did not amount to \$3,000,000 in 1890, exceeded \$7,000,000 in 1894.

While the progress which is being made in every branch of agriculture is attracting the attention of our sister provinces and of foreign countries to our province, new regions are being opened to agricultural settlement. The fertile plains of the Metapedia, of Lake St. John, Temiscamingue, and the section north of Montreal are being colonized by settlers from the old parishes, and even from some of the cities of Canada and the United States.

The state of our finances will enable my Government to propose to you the abolition of "the manufacturing and trading licenses, and the direct taxes on certain persons," but the financial situation can not be definitely settled until the railway enterprises now being carried on have been completed or abandoned, nor until the commission appointed to arbitrate upon the disputed accounts between the Government of Canada and the governments of Quebec and Ontario has completed its task.

The Legislature adjourned Jan. 12, 1895. The important measures passed were these :

Respecting abuses prejudicial to agriculture.

Respecting railway subsidies.

To amend the laws respecting public instruction and asylums for the insane and the Quebec license law.

To establish the Laurentides National Park and the Trembling Mountain Park.

To amend "the twelve-children act."

To prevent bribery and corruption in municipal and civic corporations.

To amend the law respecting the subdivision of cadastral lots.

For the protection of forests against fire.

To amend the tariff of tolls on timber and lumber making use of improvements on streams.

To amend the act respecting taxes on subsidies to railways.

Concerning the cultivation of the sugar beet.

**Agriculture.**—The annual report of the Department of Agriculture shows that in 1893 141,251 pounds of butter, valued at \$31,537, were manufactured; in 1894, 255,868 pounds, valued at \$60,094; in 1895, 562,061 pounds, valued at \$118,013. It also shows that, while the manufacture of cheese in the province in 1890 was only 4,924,504 pounds, it had increased in 1894 to 31,554,746 pounds—a difference in value and revenue to the farmers of \$4,000,000. In 1891 there were 345,789 horses, 970,887 cattle, 722,025 sheep, and 348,397 swine in the province.

**Education.**—During the year ending June 30, 1894, the Roman Catholic population of the province maintained 4,727 schools, or one school for every 273 persons, and the Protestant population 955 schools, or one to every 206 persons.

There were also 9 schools of arts and manufactures and 6 of agriculture and dairy pursuits. The total number of pupils enrolled in the province was 284,047; the average attendance 214,960. The Roman Catholic schools were attended by 1,291 Protestant pupils, and the Protestant schools by 2,699 Roman Catholics.

The pupils of French origin learning English numbered 48,253, and those of English origin learning French were 18,542. Agriculture was studied in the public schools by 49,245 pupils. The male lay teachers numbered 395, of whom 284 were Catholics and 111 Protestants. The female lay teachers numbered 5,353, of whom 4,224 were Catholics and 1,129 Protestants.

The total expenditure for education in the province was \$2,642,481.

**Forests and Timber.**—The forest and woodland area of Quebec is 116,521 square miles. The timber cut under license in 1893 was 428,-

598,000 feet of pine saw logs, 257,140,000 feet of (chiefly) spruce saw logs, 1,131,079 cubic feet of square white pine, and smaller quantities of red pine, boom timber, railway ties, etc. The receipts from timber dues was \$645,655, and the ground rents \$153,005.

**Fisheries and Shipping.**—In 1894 there were 409 men in vessels and 11,672 men in boats engaged in the fisheries of Quebec. Under an act passed by the Dominion Parliament in 1882 a bounty is paid for the encouragement of sea fishing and the building of fishing vessels. It is paid on the basis of \$3 a ton to vessels, \$3 a man to boat fishermen, and \$1 a boat to the owners. The total value of the vessels, boats, nets, traps, smoke and fish houses, piers, and wharves, etc., used in these Quebec fisheries during the year was \$904,811, or an increase of nearly \$200,000 in ten years. The value of the yield was \$2,303,386. The distribution and value of the catch in 1894 was as follows: Salmon, \$165,303; herring, \$206,493; haddock, \$4,207; halibut, \$13,774; sardines, \$7,050; mackerel, \$125,762; cod, \$1,156,077; lobsters, \$163,734; smelts, \$10,108; miscellaneous, \$450,989. The tonnage of Quebec shipping during 1894—in and out—was 2,587,044. Of this, 2,029,777 tons was British, 126,292 Canadian, and 430,975 foreign. The tonnage of the coasting trade was 5,681,961, compared with 4,433,307 tons in 1893.

During 1894 the imports of Quebec were valued at \$34,175,559, paying a Dominion duty of \$7,723,380, and \$24,555,510 free of duty. It must be remembered that Quebec contains the principal port of entrance to Canada via the St. Lawrence and receives the bulk of British goods, just as Ontario does of American goods. According to the trade and navigation returns, 81,086 head of cattle were exported from Quebec in 1894, but 90 per cent. of these were actually from Ontario. On June 30, 1894, there were 3,024 miles of railway in Quebec, 6 lines centering in Quebec city and 7 in Montreal. The population of the province is 1,500,000, of whom 1,290,000 are Roman Catholics.

## R

**REFORMED CHURCHES. I. Reformed Church in America.**—The Committee on the State of Religion reported to the General Synod statistics of this Church, of which the following is a summary: Number of churches, 618; of ministers, 652; of candidates, 9; of families, 55,934; of communicants, 103,316; of baptized noncommunicants, 41,549; of catechumens, 37,201; of members received during the year on confession, 5,828; of baptisms during the year, 5,837 of infants and 1,389 of adults; of Sunday schools, 892, with 116,389 enrolled members; amount of contributions for denominational purposes, \$187,234; for congregational purposes, \$1,028,366; for other purposes, \$124,063. The number in communion is 2,508 larger than in 1894, while the amounts of contributions are less.

The Widows' fund was reported in a satisfactory condition. Annuitants had been paid during the year \$8,350.

The Committee on Publication reported that the board was free from liabilities, and that the receipts—from 144 churches—all that had contributed—amounted to \$1,739. The churches were requested by the General Synod to contribute to the board.

A continued shrinkage in the balance of the Disabled Ministers' fund was reported.

The treasurer of the Board of Home Missions reported to the General Synod that the whole amount of gifts, legacies, and interests was \$77,956. The total of offerings from the living to the Missionary fund had been \$58,154. During the year 202 churches and 134 missionary pastors had been aided. These churches and missions included 8,309 families, 12,456 members, and 16,012 members of Sunday schools, and returned 1,212 members added during the year on confession. A mission among the North American Indians in the Indian Territory had been



undertaken by the Women's Executive Committee. The same committee had raised \$16,593 for the purposes of home-mission work, and had helped build 4 churches, repair 6, build 9 parsonages, and had paid the salaries of 3 classical missionaries in the West and of 10 students during the summer months.

The year's receipts of the Woman's Board of Foreign Missions had been \$29,717, and for the twenty years of the board's existence \$286,210.

The General Synod met in its eighty-ninth annual session at Grand Rapids, Mich., June 5. The Rev. Peter Stryker, D. D., of New York, was chosen president. The report of the Committee on the State of Religion showed that in the eleven years since the General Synod had met before at Grand Rapids there had been a marked advance in nearly every respect; it was illustrated by a gain of 98 churches, 103 ministers, 10,536 families, 176 Sunday schools, 26,081 members of Sunday schools, and of \$94,374 in contributions for religious and benevolent purposes and \$90,176 in those for congregational purposes. These gains were nearly equivalent to 19 per cent. in the number of churches and of ministers, more than 26 per cent. in communicants, and nearly 43 per cent. in benevolent contributions. The Committee on Overtures reported that of the proposed amendments to the constitution sent down to the classes, those relating to the election of professors and to the calling of extraordinary meetings of the General Synod had been approved, the latter unanimously. These were declared adopted. The proposed amendments relating to the ecclesiastical standing of professors and the declarative action of the General Synod had been disapproved by the majority of the classes, and were therefore defeated. Twenty-three classes had voted in favor of the proposed plan of federation, and 10 classes, comprising the Holland classes, against it. The plan was declared adopted. A question had risen in the previous General Synod concerning the use of a certain series of Sunday-school-lesson-helps, and the subject was referred to a special committee. Upon the report of this committee the Synod recommended the use of the "International Series of Sunday-school Lessons," and expressed its judgment that "no series of lessons or lesson helps should be introduced or used in which it is not distinctly taught according to the historic faith of the Reformed Church (Conf., Art. V) that the Scriptures are wholly true and the veritable word of God." The scope of the standing Committee on Sunday Schools was so enlarged as to give them authority to review from time to time such publications as may be designed for the use of the Sunday schools with the intent of advising against such as may seem dangerous in their tendency. Sympathy was expressed with the aims of the Franco-American Committee of Evangelization; it was recommended to the support of the people; and the celebration of the two hundred and tenth anniversary of the revocation of the edict of Nantes on the third Sunday of October, 1895, was mentioned as affording a suitable opportunity for an offering in aid of the Huguenot churches. A number of overtures having been received asking amendments to the constitution relating to the eccle-

siastical standing of theological professors, the Synod resolved to defer the whole subject until the Church can be more in harmony as to the method of effecting such changes as are desired. The objects and purposes of the Christian Endeavor League were commended to all the young people's societies of the Church, and grateful acknowledgment was made of the assistance rendered by the Christian Endeavor Societies in building 4 Christian Endeavor churches.

## II. Reformed Church in the United States.

—The statistical returns of this Church for 1895 give it 953 ministers, 224,443 church members, 191,992 communicants, and 1,636 Sunday schools, with 172,208 pupils. The number of confirmations was 11,881, an increase of 592 from the previous year; amount of benevolent contributions, \$205,234 (decrease, about \$50,000); amount contributed for congregational purposes, \$1,015,983. The Board of Home Missions has enlarged its missions among the Hungarians in the United States, having brought 2 missionaries from Hungary and licensed a third. The board was embarrassed by a debt of between \$8,000 and \$10,000. The receipts of the Board of Foreign Missions were \$30,620. The mission at Sendai, in northern Japan, returned about 2,000 communicants. An effort was making to obtain \$25,000 for the erection of college buildings at Sendai.

## III. Christian Reformed Church in America.

—This Church is composed chiefly of recent immigrants from the Netherlands. According to its yearbook for 1895, it numbers 122 congregations, with 16,037 members and 76 pastors. It has a theological seminary at Grand Rapids, Mich., in which preparatory and theological instruction are given, and with which are connected 3 professors and 2 assistants, with 20 theological and 27 preparatory students. Several pastors were brought over from the Netherlands during the year. Negotiations with the United Presbyterian Church with a view to union have been carried to the extent that an agreement has been made to co-operate in the work of foreign missions. Difference in language is mentioned as presenting a serious obstacle to complete organic union.

## REORGANIZED CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS.

The forty-third annual conference of this sect (see "Annual Cyclopædia" for 1893, page 668), was held in Independence, Mo., April 6. Among those present were Joseph Smith, the prophet and leader of the sect, and Mrs. Catharine Salisbury, a sister of Joseph Smith, "the Nauvoo Seer." Reports showed that the Church had purchased a gospel boat for service on the Pacific coast and to bear missionaries to and from the Sandwich and Society Islands; that the Church had organized 31 new societies, gained 4,015 members, and lost by death and expulsion 322 during the previous year; and that it now had 5,000 elders, priests, and teachers, besides many ordained ministers. President Smith decided a question that has been argued by the Church for several years, declaring that adultery is the only cause for divorce, and that hereafter all members of the Church must live up to this decision. After the conference, a number of the delegates, headed by J. E. Julian, of San Francisco, began

searching for a suitable location in Missouri for a colony of Mormons to be gathered in California, Arizona, and Utah. The promoters believe that the time prophesied for the gathering together of Zion has come, and they declare that the colony will in part carry out the plan outlined in the revelation of 1830 for the order of Enoch, and erect factories and shops for the employment of those among them who are mechanics.

**REUNION OF CHRISTENDOM.** The Grindelwald Conference for the Promotion of the Reunion of Christendom opened for 1895 at Grindelwald, Switzerland, Sept. 1. The opening address of the president, Dr. H. S. Lunni, contained a retrospect of the work done and the results achieved by the 3 reunion conferences that had already been held. The general service of prayer for reunion held on Whitsunday in response to the appeals of the conference and the co-operation of many churches in it and movements for union among British and Australian Methodist Churches and among Scottish Presbyterian Churches were cited as evidences of progress. The principal discussions of the conference touched upon questions of union between Anglicans and nonconformists in England, the attitude of the Holy See toward reunion, and the possibility of an educational concordat (concerning religious instruction in state schools). An address was adopted in answer to the letter on reunion which the Pope had addressed to the English people. In this letter the Pope, after referring to the early history of the Church in England and the subsequent relations of that country to the Holy See, had remarked with gratification on the attention given there to social questions, in the shape of movements for the benefit of the working classes, in behalf of religious instruction, temperance, social purity, the defense of religion against rationalism and materialism, various forms of charity, the strict public observance of Sunday, and the general spirit of respect to the Scriptures; recognized the influence of the British nation as a civilizing agency and champion of liberty; and emphasized the power of prayer as supplying the most direct and efficient means of leading to the unity desired. The address in reply of the conference avowed the persuasion that "our Lord Jesus Christ himself is the only possible center of Christian unity, and that the indwelling Spirit of the Father and of the Son in every Christian heart not only constitutes a spiritual unity which man can neither create nor destroy, but furnishes the conditions of that manifested unity for which our blessed Lord prayed"; and the belief "that unity must be obtained not by the absorption of Christians in any one communion of the divided Catholic Church, but by such a union as will conserve all the elements of Christian truth and practice which in the providence of God the various Christian communions have severally exhibited and defended." The president of the conference was commissioned to present this address to the Pope. He visited Rome, but was not received. The Pope expressed a willingness to receive him in a private capacity, but not as the president of a religious body outside of the Church. The Pope having addressed an encyclical to the Eastern Churches on the subject

of reunion, the Patriarch and Holy Synod of Constantinople answered it in an address to the Eastern Churches. The address consists of 25 clauses, in which the position of the Eastern Orthodox Church with respect to the Pope and Church of Rome is set forth. Having shown the impossibility of accepting the Pope's invitation to reunion, the address proceeds:

And as regards the sacred object of reunion, the Eastern Orthodox and Catholic Church of Christ is ready, if perchance she have allowed anything to be perverted or lost, to accept everything which the Eastern and Western Churches held in common before the ninth century; and if the Western Church can prove from the teachings of the holy fathers or the divinely assembled œcumenical councils, that the Roman Church, then orthodox in the West, ever before the ninth century read the Creed with the additional (*filioque*), or used unleavened bread, or that it accepted the teaching regarding purgatory, sprinkling instead of immersion, the immaculate conception of the Ever-Virgin, the temporal power, or the infallibility, or the absolute rule of the Bishop of Rome, we have nothing to say; but if, on the contrary, it be clearly shown, as even the lovers of truth among the Latins admit, that the Eastern Catholic and Orthodox Church of Christ holds the primitive traditional doctrines then commonly acknowledged both in the East and the West, and that the Western Church corrupted them by various innovations, it is then evident to children that the more natural way toward reunion is the return of the Western Church to the primitive, dogmatic, and administrative condition, seeing that the faith is in no way changed by time or circumstances, but remains always and everywhere the same, that there is "one body and one spirit, even as ye are called in one hope of your calling; one Lord, one faith, one baptism, one God and Father of all, who is above all and through all and in you all."

**RHODE ISLAND**, a New England State, one of the original thirteen, ratified the Constitution May 29, 1790; area, 1,250 square miles. The population, according to each decennial census, was 68,825 in 1790; 69,122 in 1800; 76,931 in 1810; 83,015 in 1820; 97,199 in 1830; 108,830 in 1840; 147,545 in 1850; 174,620 in 1860; 217,353 in 1870; 276,531 in 1880; and 345,506 in 1890. By the State census of 1895 it was 384,758. Capitals, Newport and Providence.

**Government.**—The following were the State officers during the year: Governor, D. Russell Brown, succeeded in May by Charles W. Lippitt; Lieutenant Governor, Edwin R. Allen; Secretary of State, Charles P. Bennett; Attorney-General, Edward C. Dubois; General Treasurer, Samuel Clark; Adjutant General, Elisha Dyer, succeeded at his resignation, in February, by Frederick M. Sackett; Auditor, A. C. Landers; Superintendent of Education, T. B. Stockwell; Commissioner of Roads, Charles F. Chase; Shellfish Commissioners, J. M. Wright, Benj. Brown, J. C. Church, J. T. Northrup, E. F. Dyer; Railroad Commissioner, E. G. Freeman; Chief Justice of the Supreme Court, Charles Matteson; Associate Justices, John H. Stiness, Pardon E. Tillinghast, George A. Wilbur, Horatio Rogers, W. W. Douglas, all Republicans.

**The State Census.**—The population of Providence is 145,472; of Pawtucket, 32,577; of Newport, 21,537; of Warwick, 21,168; of Woonsocket, 24,468; of Central Falls, 15,828; of Johnston, 11,203; of Cranston, 10,575; of East Providence, 10,170.



The following table shows the distribution and increase of population according to the census of 1895 :

COUNTIES.	TOTAL POPULATION.	
	1885.	1895.
Bristol.....	11,340	12,224
Kent.....	21,614	30,050
Newport.....	28,280	30,972
Providence.....	220,606	286,776
Washington.....	22,444	24,786
State.....	304,284	384,758

The number of male adults in the State is 112,800; of these the possible voters number 86,709; the qualified voters, 69,770; and those that voted in April, 43,763.

The adoption of the Bourn amendment to the Constitution has caused a great increase in the number of naturalized voters. In 1885 there were 4,824; in 1889, 12,908; and in 1895, 24,615. The number of aliens in 1895 was 22,304. The percentage of foreign male adults in 1885 was 37.23 of the whole population; in 1890 it was 40.02, and in 1895 it had increased to 42.29.

**State Institutions.**—The statistics of the Workhouse and House of Correction for the year show that Jan. 1, 1896, there were present 200 men and 76 women; remaining Dec. 31, 1895, 204 men and 63 women. At the Asylum for the Insane the statistics were: Number of inmates Dec. 31, 1894, 310 males, 299 females; committed during the year, 108 males, 91 females; number remaining Dec. 31, 1895, 314 males, 314 females—628.

At the Almshouse Dec. 31, 1894, the number of inmates was 114 men, 126 women, 19 boys, 18 girls; admitted during the year, 142 men, 110 women, 20 boys, 13 girls; remaining Dec. 31, 1895, 137 men, 146 women, 28 boys, 18 girls—329.

The statistics of the State Prison for the year were: Number of men in prison Jan. 1, 1895, 134, women 1—135; committed during the year, 77 men, 1 woman—78; number of inmates Jan. 1, 1896, 153 men, 2 women.

At the Sockanosset School for Boys 196 boys were received and 173 discharged. Dec. 31, 1895, there were 265 boys at the school.

The Oaklawn School for Girls reports 31 girls at the institution Jan. 1, 1895; admitted during the year, 16; number at the school Jan. 1, 1896, 26.

The report of the Rhode Island Hospital for the year ending Sept. 30 shows that the number of patients admitted was 2,046—males, 1,279; females, 767. The number of patients in the hospital Sept. 30, 1894, was 129; Sept. 30, 1895, it was 143.

The total receipts were \$65,862.20 and the expenditures \$69,493.43.

Some changes have been made in Providence in the manner of enforcement of the laws regulating commitments for insanity, which have materially reduced the number of commitments and have also caused controversy between judge and physicians. The law requires that two physicians shall certify to the insanity of the patient who shall be committed by the district judge. It has been customary for the regular physician

of the family interested to certify, together with such other physician as the family may call in; but the court of the Sixth District of Providence issued an order providing that all commitments must be signed by one of three experts appointed by the court, who must also sign the request for a private examination if such should be necessary. As a result, a stop has been put to the practice of committing persons who, while having mental peculiarities, could not be called insane. The result of the rule has been that where formerly 3 or 4 were committed every week, only 4 were committed in two months.

**Education.**—At the one hundred and twenty-seventh commencement of Brown University, in June, about 65 students received the degree of Bachelor of Arts, of whom 7 were women; 30 that of Bachelor of Philosophy, of whom 4 were women; and 4 received the degree of Civil Engineer.

The granite building known as College Hall, at the Rhode Island College of Agriculture and Mechanic Arts, at Kingston, was destroyed by fire Jan. 27. The students rescued about \$4,000 worth of property belonging to the institution, many leaving their own belongings to burn while they saved those of the State. The Legislature appropriated \$35,000 to rebuild the dormitory.

**Insurance.**—No life insurance companies are incorporated in Rhode Island. There are 29 companies incorporated in other States doing business there, and the 2-per-cent. tax paid by them in 1894 for business done in 1893 was \$47,991.75.

**Industries.**—The cotton-goods industry in the State was not in satisfactory condition at the end of the year. The causes are given as follows:

Raw cotton costs almost one third more than it did about a year ago, and there are few mills which are not now using new cotton bought at the advanced prices. Wages are higher, too, and there is practically no demand for goods. A year ago or more very cheap raw material and lower-priced labor permitted a profit to the mills at a low range of values on goods.

The advance in the latter has not been sufficient to cover the greatly increased cost of production, and no fresh orders for product are coming in.

There was a long-continued strike, involving the operatives of many mills, at Olneyville, beginning in April. There were also strikes at Central Falls, Burrillville, and Westerly.

The Board of Agriculture expended \$25,000 during the year in the prosecution of its work, an important part of which is the detection and destruction of tuberculous animals; of these, 577 were killed, of which 504 were cows and 59 hogs; post-mortem examinations showed that only 12 of these were not infected.

**Central Falls.**—This village, in the town of Lincoln, has been incorporated as a city, and the municipal government was inaugurated March 18. It is the fifth city in the State, and is very small territorially and very compact, being less than a square mile in extent, with nearly 16,000 inhabitants. Its total valuation is nearly \$7,000,000.

**Pawtucket.**—The citizens of Attleboro, Mass., residing in its extreme southwestern corner, have desired to be annexed to Pawtucket for some time, and this year prepared a petition to the

General Court of Massachusetts, asking that the boundary line between the two States be so deflected as to make it pass along the northeastern line of their settlement. A similar petition was prepared to be sent to the Rhode Island Legislature after the first should have been acted upon.

**Block Island.**—The great Salt pond, Block Island, was formally opened Sept. 21 as a harbor of refuge. The State appropriated \$60,000 for work on the harbor, and the town \$45,000, of which \$70,000 has been expended. The harbor is a natural formation of extensive proportions, and from 25 to 35 feet at low water. A low stretch of sand separates it from the ocean.

**New Statehouse.**—Ground was broken Sept. 16 for a new Statehouse on Smith's Hill in Providence. The commission to do the work was appointed at the January session of 1893. The city appropriated \$200,000 for a site, provided one were selected within certain limits. The design was made by New York architects, and calls for marble as the material. The contract price for construction is \$1,576,000.

**Legislative Session.**—The January session began Jan. 29 and ended May 25. Among the more important bills was one called the "Strike act," amending and adding to the chapter "Of Offenses against Private Property," providing fines and imprisonment for willfully obstructing a street railway company in the use of its tracks or willfully and maliciously delaying or obstructing the passing of its cars or carriages thereon, and for willfully and maliciously cutting, destroying, or injuring any machine, appliance, or apparatus used for generating electric currents, or any electric wire or other appliance or apparatus used for the purpose of conducting or transmitting electric currents for using and furnishing power, motive power, light, heat, or used for the purpose of transmitting intelligence, etc.

It was prohibited, under penalty of \$25 to \$100, to "display the flag or emblem of any foreign country on any State, county, city, or town building or public-school house within the State: Provided, however, that when any foreigner shall become the guest of the United States, or of this State, the flag of the country of which such public guest shall be a citizen or subject may be displayed upon public buildings, except public-school houses."

An addition was made to the statutes on birds, forbidding the killing or trapping of carrier pigeons.

A report was received by the Committee on Roads and Public Highways appointed at the January session in 1892. The committee in examining the principal highways of the State found little to commend. In the western part many of the highways traverse very steep hills. A relocation of many of these roads is recommended.

The total number of miles of highways in the State is about 2,420, of which 248 miles are of macadam and 312 of gravel, the rest being common dirt roads. Acts making provision for improvement of the roads and for maintaining and repairing them were passed, and the office of State Superintendent of Highways was created.

The statute on oyster fisheries was amended so as to provide that the Legislature shall elect

5 commissioners of shellfisheries, 1 from each county. The statute on inland fisheries was also amended, and fines imposed for setting traps, weirs, etc., during the close season.

Providence was authorized to borrow \$600,000 for highway work, \$400,000 for school purposes, and \$150,000 for park purposes. A board of canvassers and registration for the city of Providence was created. The Mayor was authorized to contract with the Rhode Island Hospital for the construction and maintenance of a hospital for the cure of contagious diseases. Other acts of the session were:

Providing for a standard form of fire insurance policy.

Regulating the admission of foreign building and loan associations, and providing for reports and supervision of such associations.

Amending the game laws with reference to birds.

Requiring signboards at railroad crossings in letters at least 9 inches long—"Railroad Crossing: Stop, Look, and Listen."

An act was passed providing for biennial elections as an amendment to the Constitution, to be submitted to the popular vote if also passed at the May session.

Among the appropriations were the following:

Public schools, \$120,000; Normal School, \$18,000; traveling expenses of students of the Normal School, \$2,000; teachers' institutes, \$500; evening schools, \$5,000; Rhode Island School of Design, including the annual sum provided by the public laws and tuition fees of beneficiaries, \$3,000; purchase of school apparatus, as provided by the public statutes, \$3,000; education of blind and imbecile children, as provided by the public laws, \$12,000; free public libraries, \$5,500; State home and school, \$20,000; support of the indigent insane, \$12,000; State printing, \$30,000; State binding, \$5,000; advertising and publishing public laws, \$10,000; militia and military affairs, \$37,500; armory rents, \$6,700; heating and lighting armories, \$1,750; State library, \$250; law library, \$2,000; State Historical Society, \$1,500; Newport Historical Society, \$500; State Board of Health, \$3,500; State Board of Charities, \$225,000, besides moneys received by them which are appropriated to their use; Society for the Prevention of Cruelty to Children, \$2,500; Prisoners' Aid Association, \$500; State Board of Agriculture, \$15,000; Society for the Prevention of Cruelty to Animals, \$1,000; Soldiers' Relief fund, \$13,000; Soldiers' Home fund, \$22,000; Agricultural College, \$10,000; Institute for the Deaf, \$15,000.

The May session opened at Newport, May 28. The 2 branches were organized, the ballots cast for State officers at the April election were counted, the officers-elect were sworn in, and the new Governor was inaugurated. During the two days of the session the bill for submitting the proposed biennial-elections amendment was passed, additional appropriations were made for the expenses of the State Government, as well as one of \$10,000 for taking the census, \$10,000 for the Board of Agriculture, \$10,000 for use at the armory at Bristol, \$500 for a bounty on wild foxes, and \$10,000 for having the State properly represented at the various expositions to be held in Mexico and other places.

**Political.**—The Republican State Convention was held in Providence, March 14. The resolutions, after declaring in favor of the party policy on national questions, favored the plan for biennial elections. All the State officers except the Governor were renominated. The new candi-



date for the governorship was Charles Warren Lippitt.

The Democratic Convention met the same day, and confined itself to resolutions on the one State issue as follow :

We pledge ourselves to a constitutional convention as the only way to meet the demands of the people of this State. We denounce the proposed biennial amendment to the Constitution as a partisan fraud upon the people, unfair and designed to perpetuate the present enemies of the people in power, and call upon all to devote their energies to its defeat.

The ticket was as follows: For Governor, George L. Littlefield; Lieutenant Governor, Augustus S. Miller; Secretary of State, George W. Greene; Attorney-General, George T. Brown; General Treasurer, John G. Perry.

Prohibition and Socialist-Labor candidates also were nominated.

At the election in April the Republican ticket was successful, the vote for Governor being as follows: Lippitt, Republican, 25,098; Littlefield, Democrat, 14,289; Quimby, Prohibitionist, 2,624; Boomer, Socialist-Labor, 1,730. The Republicans elected 35 Senators and 67 Representatives: the Democrats, 3 Senators and 5 Representatives. A special election was held Sept. 25 to vote upon the biennial-elections amendment, and the result was its defeat by a vote of 7,449 in favour to 10,603 against.

**ROMAN CATHOLIC CHURCH.** The reunion of Christendom is the subject uppermost in the mind of Leo XIII, and by way of encouragement to effort in that direction at the outset of 1895 he issued an encyclical which is largely an appeal to Christians to eschew nonessentials and gather in Christ's name in one fold under one pastor.

The great temple to the Blessed Virgin to be erected conjointly by the Catholics of all rites in accordance with the resolution passed at the Eucharistic Congress of Jerusalem—the starting point of the reunion of the Greek and Western Churches—was formally begun during the year, the corner stone being laid at Patra, in Ochala, not far from the place where Christianity formerly flourished under Mary's auspices. Leo XIII gave the first contribution and called for subscriptions from the whole Catholic world to carry out the pledge made by his representatives at the congress.

Later in the year was issued another encyclical, similar in tenor, in which for the separated brethren of the East and West increased devotion was asked of the faithful to the rosary that all creeds, classes, and nations "may be reunited under the beautiful protection of the Blessed Virgin Mary." But the most important pronouncement from the Vatican was probably the apostolic letter issued on April 14, addressed to the English people, who seek the kingdom of Christ in the "unity of the faith, health, and peace in the Lord." In this remarkable document Leo XIII says:

God is our witness how keen is our wish that some effort of ours might tend to assist and further the great work of obtaining the reunion of Christendom; and we tender thanks to God, who has so far prolonged our life, that we may make an endeavor in this direction. But since, as is but right, we place our confidence of a happy issue principally and above

all in the wonderful power of God's grace, we have with full consideration determined to invite all Englishmen who glory in the Christian name to this same work, and we exhort them to lift up their hearts to God with us, to fix their trust in him and to seek from him the help necessary in such a matter by assiduous diligence in holy prayer.

Then follows a historical summary of the relations between Rome and England and of the love and care of the pontiffs from the days of Gregory. While he was nuncio in Belgium, the Pope says, he approved of a society whose object was prayer for the return of England to the fold of Peter, and the thought has ever been with him that the united and humble supplications of so many joined in this holy league must be hastening the time of God's merciful designs toward the English people. The improvement of the condition of the people must indirectly help this forward. "We have heard," he says, "with singular joy of the great attention which is being given in England to the solution of the social question and of the establishment of the benefit and similar societies whereby on a legal basis the condition of the working classes is improved." This, the works of charity, the strict public observance of Sunday, and the general spirit of respect for the Holy Scriptures, the innumerable agencies and movements working for the kingdom of God on earth, are all signs of better days, and it but needs prayers whereby human effort is supernaturalized in order to produce vigorous and lasting results." But especially does he urge upon Catholics prayer to the Blessed Virgin, whose aid is asked in the following prayer, which he asked all the faithful to repeat continually:

O Blessed Virgin Mary, Mother of God and our most gentle Queen and Mother, look down in merey upon England thy "dowry" and upon us all who greatly hope and trust in thee. By thee it was that Jesus our Saviour and our hope was given unto the world; and he has given thee to us that we might hope still more. Plead for us thy children, whom thou didst receive and accept at the foot of the cross. O sorrowful Mother! intercede for our separated brethren, that with us in the one true fold they may be united to the Supreme Shepherd, the Vear of thy Son. Pray for us all, dear Mother, that by faith fruitful in good works we may all deserve to see and praise God, together with thee, in our heavenly home. Amen.

An answer to this impassioned appeal came in the form of a letter to his Holiness, signed by eminent divines of all denominations in England, followed by a personal visit from Lord Halifax, President of the Anglican Church Union Conference, and a resolution by the same body seconding the Pope's desire.

Leo XIII called Cardinal Vaughan to Rome to consult with him as to practical steps in the indicated direction, but did not find him at all enthusiastic for systematic action. He found in Abbé Duchesne, dictator of the French School of History, Rome, a more valuable ally, that distinguished *savant* contending for the validity of Anglican orders, and being supported by Prof. Bouquillon, of the Catholic University, Washington. The Belgian Benedictines opposed the proposition to condemn these opinions, and the Pope ordered silence on the subject. As another evidence of his sympathy, he sent a subsidy to

the "Review Anglais," a new periodical published by French priests in Paris, for free distribution among the ministers of the Anglican Church.

Cardinal Vaughan, in addressing the annual Catholic Conference at Bristol, in September, said the question of corporate reunion of the Churches did not rest upon the validity of Anglican orders, as some supposed. He believed that that subject would be authoritatively decided by Rome in the near future, and he desired it understood that, if it be necessary for the good of religion that the actual archbishop and bishops should efface themselves, gladly would they do so. (See article REUNION OF CHRISTENDOM, in this volume.)

The canonization of Mary Queen of Scots was reported favorably on by the Westminster tribunal in March, and the case was brought to the attention of Rome, the question being simply whether she died a martyr to her faith.

**Statistics.**—Official tables given out for 1895 by the Propaganda press show the Catholic population of the world to be about 300,000,000, distributed among 1,060 sees. The work of Leo XIII, since his accession to the See of Peter includes the creation and re-erection of 1 patriarchate in the West Indies, 29 archbishoprics, 85 bishoprics, 2 abbots, 59 vicariates, and 2 apostolic delegates, making in all 194 new titles.

The Sacred College was invaded by death during the year, the demise of 10 cardinals, twice the usual number, being reported. In this list were Cardinals Francis Benaïvides y Navarette, of Padua, Archbishop of Saragossa, aged eighty-five; Cardinal Lucien Bonaparte, second cardinal priest in the order of precedence, aged sixty-seven; Julian Florian Desprez, Archbishop of Toulouse, aged eighty-eight; Hamilcar Malagola, Archbishop of Fermo, aged fifty-five; Louis Russo-Silla, aged fifty-five; Benedict Sazy Fores, Archbishop of Seville, aged sixty-seven; Cardinal Persico, once Bishop of Savannah, Ga.; and Cardinal Paul Melchers, former Archbishop of Cologne, aged eighty-two.

There were 63 cardinals at the end of the year, including the following 9 elevated at the Consistory of Nov. 29: Adolph Louis Albert Perraud, Bishop of Autun, France, born at Lyons, Feb. 7, 1828; Sylvester Sembratowlez, Archbishop of Lemberg (Greek-Ruthenian rite), born at Dosanico, Oct. 3, 1836; Francis Satolli, Titular Archbishop of Lepanto, Delegate Apostolic to the United States, born at Marcesiano, diocese of Perugia, July 31, 1839; John Otaller, Archbishop of Salzburg, born in St. Martin, Passeyer, diocese of Trient, April 30, 1825; Anthony Maria Caseajares y Azara, Archbishop of Valladolid, Spain, born at Colanda, Saragossa, May 2, 1834; Jerome Maria Gotti, O. C. C., Inter-Nuntius to Brazil, Titular Archbishop of Petra, born at Genoa, March 29, 1834; Achilles Manara, Archbishop of Ancona, born at Bologna, Nov. 20, 1829; Salvator Cassanas y Pages, Bishop of Urgel, Spain, born at Barcelona, Sept. 5, 1834; Johan Peter Boyer, Archbishop of Bourges, France, born at Paray la Monial, diocese of Autun, July 27, 1829.

**Italy and the Papacy.**—The celebration, on Sept. 20, of the anniversary of the entrance of Garibaldi into Rome was noted for the univer-

sal protest that it brought from the Catholic world and the speech of Crispi, in which he enthusiastically eulogized the spiritual character of the papacy, but credited its renewed potency in the affairs of nations to the attitude of the Italian Government. The speech was taken at the Vatican as the culmination of the secret negotiations by which it has been sought to bring the Pope into alliance with Humbert in opposition to the internal conspiracies undermining Italy. Catholic participation in parliamentary elections was the immediate end aimed at by Crispi, and following his address came an almost overwhelming pressure on Leo XIII to withdraw his pronouncements against that participation. While the partisans of compromise between the Vatican and Quirinal went about proclaiming the confession of Crispi, the Pope quietly analyzed the situation, and, recognizing under all the intrigue and all the counsel offered him an attack upon Cardinal Rampolla, he wrote a letter to his faithful Secretary of State reiterating his inexorable resolve never to recognize the act by which the papacy was robbed of its temporal rights and independence, and reassuring the vacillating and timid of ultimate victory in the ascendancy of a Rome that will not be a mere capital of a little political state, but a Rome in truth and in entirety the patrimony of St. Peter, the Catholic and international city wherein the whole world shall be represented and heard. In the letter to Cardinal Rampolla, dated Oct. 9, Pope Leo says:

We have been reduced to become almost immediate witnesses of the apotheosis of the Italian revolution and the spoliation of the Holy See. That which most afflicted us is the design to perpetuate rather than to terminate the conflict, of which no one can measure the disastrous effects. The final object of the occupation of Rome was not to complete political unity, but in destroying the walls of the temporal metropolis to attack more closely the spiritual power of the popes. The object was to change the destinies of Rome, return it to paganism, and give birth to a third Rome and a third era of civilization. . . . Nothing will ever confer veritable independence upon the papacy so long as it does not have temporal jurisdiction.

Peter's pence showed the effects of the industrial depression throughout the world, the average of \$1,000,000 yearly being most markedly reduced. France, which furnished three fifths of this, gave evidence of the discontent of a larger portion of the hierarchy, clergy, and people with the papal support of the republic by contributing less than at any time in twenty-five years. There was no change in Pope Leo's policy, however, he refusing to recognize the actions of the Church-hating *coterie* as expression of either the Government's will or that the republic does not fully represent the will of the French nation. In consequence of the revenue losses, measures of economy were decreed at the Vatican. The consulting members of the congregations have been dispensed with, and the salaries of the members themselves considerably reduced.

**The Armenian Question.**—Mgr. Azarian, the Armenian patriarch resident in Constantinople, in his advices to the Pope, declares that few of the 150,000 Catholic Armenians have taken part in the uprisings of the year, and that



consequently they have not suffered as much as the Schismatic Catholics and Protestant Christians, although the movement toward Catholic reunion has been somewhat disturbed in consequence. At his Consistory in November, however, the Pope took occasion to refer to the unhappy condition of Armenia and to appeal to Europe in behalf of the whole nation. He contributed 70,000 liras toward the relief of the sufferers by the Turkish barbarities.

**Korea.**—Persecution of Christians in Korea was reported by Mgr. Mutal, head of the Catholic missions, who declared that 15,000 of his congregation were being hunted like wild beasts, and were compelled to find refuge in the mountains. All the missionaries in the province of Tchyong-Tchyeng were compelled to flee to the coast under the protection of French gunboats.

**Russia.**—A most cordial understanding between the Czar and the Pope was foreshadowed by the visit of Prince Lebanoff to the Vatican, bearing an autograph letter from Nicholas II to Leo XIII at New Year's. On Dec. 30, 1894, the prince and M. Alexander Tswolsky, the new Russian minister to the Holy See (and the first since the breaking of friendly relations between the two courts twenty-eight years ago on account of the persecution in Poland), had a protracted interview with the Holy Father. After presenting the Czar's letter, Prince Lebanoff said he was happy to fulfill an office that enabled him to express his veneration for the Pope and to convey the good will of his Majesty the Czar, whose policy was pacific. The Pope replied that he always supported the principles of order and peace, such as inspired the Czar.

Cardinal Rampolla gave a dinner in honor of the envoy the day following, and later the courtesy was returned by the Russian minister. It was announced that the revocation of the anti-Catholic decrees in the ukase of 1865 was to be permanent. A rupture of these pleasant relations was threatened by the news of fresh outrages in Poland in the autumn; but new assurances being received at Rome, the Pope decided to send a cardinal as envoy to represent him at the *fêtes* in honor of his coronation in the spring of 1896.

"The Primacy of the Christian Churches" is the title of an encyclical, on which the Holy Father puts in most of his spare time, and which he considers the crowning effort of his work for Christian reunion.

**Church and State.**—The conflict between Austria and the Vatican continued unabated throughout the year, the Austrian Government insisting upon the recall of Mgr. Agliardi, papal nuncio at Vienna, who sustains the Hungarian hierarchy in their determination to resist the civil marriage laws and other obnoxious measures, and the Pope steadfastly refusing to accede to the Government demand. At the close of the year there were indications of a better feeling, the Pope, in answer to Emperor Joseph's most urgent request, intimating that he might make the recall for good when he creates Mgr. Agliardi a cardinal at the March Consistory.

The Church troubles in Guatemala caused negotiations to be begun by Monsignor Satolli, looking to a resumption of friendly relations.

The papal delegate, in February, addressed the Government, requesting that it, too, like Nicaragua—which has sent Dr. Modesto Barrios as its envoy extraordinary and minister plenipotentiary to the Holy See—send a representation to Rome, and thereby take the readiest means of securing a perfect understanding between Church and state.

**The Church and Evolution.**—Rev. Dr. Zahm, Professor of Physical Sciences at Notre Dame, Ind., started quite a discussion by his address before the Catholic Summer School, in which he held that there is nothing in Catholic dogma which precludes the view that man is descended from the ape or some other animal should science in its search at last reveal the missing link. He cited St. Thomas to justify Darwin, and St. Gregory in defense of Laplace.

The Church in America was formally addressed in an encyclical under date of Jan. 6. At the outset the planting of the cross by Columbus at San Salvador is referred to, the papal assistance in the commemoration of that event at Chicago, the Church's concern for the full fruition from a religious point of view of the discoverer's mission, the explorations and services of its missionaries, the achievement of constitutional liberty by the colonies with Catholic aid, the friendships of Archbishop Carroll and Washington—all these and more are pointed to as evidences that the United States ought to be conjoined in concord and amity with the Catholic Church. The prosperity of the Church is credited "to the equity of the laws which obtain in America and to the customs of the well-ordered republic"; but it is argued that the conclusion must not be drawn that it is the type of the most desirable status of the Church, "or that it would be universally lawful or expedient for state and Church to be, as in America, dissevered and divorced." The two specific objects by which he has endeavored to preserve and more solidly establish among the American people the Catholic religion, says the Pope, have been (1) the advancement of learning; (2) a perfecting of methods in the management of Church affairs. Speaking of science, the document says: "Catholics ought not to be followers, but leaders in the praiseworthy keen competition of talents. This in every age has been the desire of the Church. Upon the enlargement of the boundaries of science has she been wont to bestow all possible labor and energy, . . . so . . . that it should be regarded as the fixed law of the new university to unite erudition and learning with soundness of faith and to imbue its students not less with religion than with scientific culture."

The point most dwelt upon is that dealing with the apostolic delegation, in which Monsignor Satolli's power is defined as being to correct errors and make the rough way plain for the faithful; not as an obstacle, but as an aid to the authority of the bishops, who, however, while ruling their own dioceses must not interfere or clash with each other. The indissolubility of marriage, the corruption of morals and of kingdoms through divorce are impressed; and the virtue of temperance, the use of the sacraments as aids to the ideal of an upright life, the observance of the just laws and institu-

tions of the republic are among the things the clergy are exhorted to inculcate. The industrial workers are warned against violence while seeking to improve their condition, and are admonished to shun the dangerous secret societies condemned by the Church. Catholic journalism is encouraged, but unanimity among journalists and due respect for episcopal authority must be maintained.

**The United States.**—The summary of the Church's status in the United States at the close of 1895 shows the number of archbishops to be 14; bishops, 69; priests, 10,348; churches with resident priests, 5,853; missions with churches, 3,648; stations and chapels, 5,393; universities, 9; seminaries (secular), 26; students, 1,968; regular seminaries, 82; students, 1,713; high schools for boys, 187; high schools for girls, 633; parishes with schools, 3,361; children attending, 796,348; orphan asylums, 243; orphanages, 33,064; charitable institutions, 836; total children in Catholic institutions, 933,944; Catholic population, 9,410,790; Catholic papers and magazines, 249. Death carried off 1 archbishop and 4 bishops, 233 priests, and 170 religious.

Rt. Rev. John M. Farley, Vicar General of New York, in answer to the request of Archbishop Corrigan, was created auxiliary bishop of the diocese on Oct. 9.

The mission built nine years ago by Miss Kate Drexel on Crow Creek Indian Reservation, South Dakota, was destroyed by fire, Oct. 3, several of the Indian children narrowly escaping death.

The resignation of Rt. Rev. Mgr. Denis J. O'Connell as rector of the North American College was supposed to have some bearing upon the ecclesiastical controversies going on in the United States for some years, Mgr. O'Connell being known as a friend of Archbishop Ireland. The elevation of Rev. Dr. Thomas O'Gorman, of the Catholic University, to a bishopric was, on the other hand, quoted as an offset to any supposed significance in the resignation, the latter being the *alter ego* of the archbishop. Mgr. O'Connell was succeeded by Rev. William O'Connell, of the archdiocese of Boston, whose position is announced as that of a strict neutral in all matters affecting ecclesiastical prestige in the United States.

The Catholic Historical Society marked the resting place in St. James's churchyard of Peter Turner, the Catholic pioneer of Brooklyn, by a marble bust erected with notable ceremonies, presided over by Bishop McDonnell and Mayor Schieren.

Bishop McQuaid, of Rochester, incurred the censure of Rome, in January, for his pulpit attack on Archbishop Ireland in December.

The Rev. Dr. Edward McGlynn was formally installed as pastor of St. Mary's Church, Newburg, N. Y., the first Sunday of January; and with the promise of Archbishop Corrigan to give him the first charge equal to old St. Stephen's that may become vacant, one of the most remarkable misunderstandings in American ecclesiastical history closes. Rev. Dr. R. L. Burtzell, counsel for Dr. McGlynn, appealed to Rome from the decision of the archbishop transferring him from a permanent rectorship in the city to an

up-country parish, but it was decided against the priest.

The elevation of Mgr. Satolli to the cardinalate, in November, was taken as the crowning act in the establishment of the Apostolic Delegation at Washington.

The Catholic Temperance Convention held at Carnegie Hall, New York, in August, was a remarkable demonstration in favor of the Sunday-closing movement in that city. It was addressed by Mayor Strong and Police-Commissioner Roosevelt.

Two institutions of learning were dedicated during the year—the McMahon Hall of Philosophy of the Catholic University, in October, and the magnificent theological seminary of St. Paul, the gift to Archbishop Ireland, by James J. Hill, a Protestant admirer, Sept. 4.

The Catholic summer-school idea appears to have taken hold in earnest, not only that at Plattsburg, N. Y., being successful, but two others at Pittsburg, Pa., and Madison, Wis., bidding for favor.

The first Eucharistic Congress held in America was opened in Washington, Oct. 2, by Mgr. Satolli.

The missions to Protestants, by the Rev. Walter Elliott, of the Paulist Fathers, in the West, have proved successful, and a new society in support of them, called the Apostolate of St. Francis de Sales, was approved by Bishop Horstmann, of Cleveland, in October.

Rev. Dr. Fred. C. Rooker, Secretary to Mgr. Satolli, gave the Catholic view of education and religion by request at the centennial commencement of Union College, Schenectady, N. Y., June 23, in the presence of a distinguished assemblage of Protestant ministers.

**Great Britain.**—The foundation stone of the projected cathedral for Westminster was laid by Cardinal Vaughan June 29. It is on the site of the old Tothill Field's Prison as secured by Cardinal Manning. The edifice will be 350 feet long, 156 feet wide, and 90 feet high, with a 300-foot tower. The Duke of Norfolk subscribed £10,000 toward the work. The cathedral will be placed in charge of the Benedictines.

A vicar apostolic for Wales was appointed in July. He is the Rev. Father Francis Mostyn, of the diocese of Shrewsbury, England, and his new charge covers 12 counties.

**Germany.**—The third German Catholic Congress at Bingen, Hesse, June 30, was attended by 10,000 persons. Among the resolutions passed were the following:

"The independence of the Pope and the Holy See," "Free exercise for ecclesiastical power in Hesse," "Re-establishment of the religious orders," "Restitution in favor of Catholics by statutory guarantees," "Liberty of teaching in schools," "Peace and Christian solution of the social question," "Development of the Catholic press."

**Portugal.**—The International Catholic Congress at Lisbon, which began June 13 and continued to the end of the month, was held in commemoration of the seventh centenary of St. Anthony of Padua, and the like of it has not been seen in Portugal since the Middle Ages.

**Australia.**—Catholic progress here is shown by the new census, which places the Catholic strength as 21.10 per cent. of the population.



**Canada.**—The Manitoban school question developed into considerable proportions during the year, the Dominion standing by the guarantee of separate schools for Catholics, but Manitoba, on the contrary, voting in the autumn elections, by an overwhelming majority, against it. The controversy still goes forward. The Episcopal Synod of Fredericton, New Brunswick, resolved in June to unite with Catholic and other denominations in a demand for religious teaching in the public schools.

**Ireland.**—The centennial celebration of St. Patrick's College, Maynooth, June 25, was the occasion of a gathering of Irish priests from every part of the world. It lasted three days. Cardinals Lague and Vaughan participated.

A memorial altar to the illustrious Archbishop Hughes of New York was consecrated Sunday, Jan. 20, in the parish church of his native Omagh, County Tyrone. A movement was started and £700 subscribed in April toward a suitable memorial to Rev. Thomas N. Burke, O. P., the great Dominican preacher, in Galway, where he was born. All Hallows' College, Drumcondra, the great missionary college, was almost totally destroyed by fire in May.

The Irish bishops, at their October meeting in Maynooth, issued a pronouncement against the antireligious writings of the Parnellite factional newspapers.

**ROUMANIA**, a constitutional monarchy in eastern Europe, comprising the former Turkish provinces of Wallachia and Moldavia, which became tributary principalities in 1859 and were united in 1861, declared independent of Turkey in 1877, and erected into a kingdom in 1881. The Legislature consists of a Senate, of 120 members, elected for eight years, and a Chamber of Deputies, containing 183 members, elected for four years. Suffrage is in three degrees. The reigning King is Carol I, born April 20, 1839, a prince of Hohenzollern-Sigmaringen who was elected Domn of Roumania in 1866. The Cabinet in the beginning of 1895 contained the following members: President of the Council and Minister of the Interior, L. Catargi; Minister of Agriculture, Industry, Commerce, and Domains, P. P. Carp; Minister of Foreign Affairs, A. Lahovari; Minister of Finance, M. Germani; Minister of Public Works, C. Olaneseo; Minister of Public Instruction and Worship, Take Jonesco; Minister of War, Gen. C. Poenaro; Secretary of the Council, A. Diamandeseo. Roumania covers 48,307 square miles and has a population estimated at 5,800,000. The number of births in 1894 was 227,469; of deaths, 176,483; of marriages, 50,323.

**Finances.**—The revenue for 1894 was 219,597,336 lei, or francs, and the expenditure was 199,261,160 lei. The budget for 1896 makes the total receipts 209,800,000 lei, of which 32,390,000 lei come from direct and 63,410,000 lei from indirect taxes, 48,700,000 lei from state monopolies, 28,436,000 lei from domains, and the remainder from the various departments. Of these revenues the public debt absorbs 73,975,262 lei, 41,016,134 lei are spent on the army, 26,161,920 lei go for public instruction, 21,350,642 lei are allotted to the Interior Department, and 25,650,186 lei are required for financial administration, 5,950,349 for the administration of the domains, 6,318,500 lei for the administration of public

works, 6,625,976 lei for justice, and 1,725,741 lei for diplomaey.

The debt, which was contracted mainly for the purchase of railroads, the transfer of feudal estates to the peasants, and war purposes, amounted in 1895 to the capital sum of 1,275,568,960 lei, bearing mostly 4 or 5 per cent. interest.

**The Army.**—Military service is obligatory, and, while service with the colors for three years may be required and enough men are drawn by lot to keep up the peace establishment of 42,000 men, all men on leave and the reserves are called out every autumn for the manœuvres, and the territorial troops, who have not served with the colors, are also summoned then and are called out in the spring too for drill and rifle practice. There are 3,020 officers. The active army has 8,200 horses and 366 guns. The territorial army numbers 65,000 men. Roumania possesses a protected cruiser, a school ship, and a river fleet of gunboats and torpedo boats.

**Commerce.**—The total value of imports in 1894 was 422,142,287 lei; of exports, 294,198,384 lei. The imports of metals and metal manufactures were 104,000,000 lei; of textile manufactures and materials, 143,300,000 lei; of fruits and vegetables, 34,900,000 lei; of hides and leather, 18,000,000 lei. The exports of cereals were 256,000,000 lei in value. Of the imports, 116,374,000 lei came from Germany, 114,805,000 lei from Austria-Hungary, 84,029,000 lei from Great Britain, 34,219,000 lei from France, 22,492,000 lei from Belgium, 21,079,000 lei from Turkey and Bulgaria, 9,123,000 lei from Russia, and lesser amounts from Italy, Switzerland, and Greece. Of the total exports, 58,084,000 lei went to Germany, 78,842,000 lei to Great Britain, 42,838,000 lei to Austria-Hungary, 61,359,000 lei to Belgium, 25,071,000 lei to Turkey and Bulgaria, 10,045,000 to France, and 7,011,000 to Russia.

**Communications.**—The railroads, all of which belong to the state, have a total length of 1,617 miles, besides which 395 miles are building and 623 miles projected.

The post office in 1894 forwarded 13,243,501 letters, 7,081,397 postal cards, and 12,179,363 printed inclosures.

The telegraphs have a total length of 4,002 miles, with 9,140 miles of wire. There were 1,400,727 paid domestic messages transmitted in 1894 and 451,657 international and 62,287 transit messages. The expenses of the post office and telegraph service were 7,675,703 lei, while the post office took in 4,974,640 lei and the telegraph bureaux 2,834,852 lei.

**European Commission of the Danube.**—The International Commission having charge of the navigation of the neutralized parts of the Danube has certain sovereign powers over the river below Braila. Austria-Hungary, France, Germany, Great Britain, Italy, Roumania, Russia, and Turkey have each a representative. The tolls and other receipts in 1894 amounted to 4,673,850 francs and expenses to 4,247,876 francs. The number of vessels that entered the Sulina mouth in 1894 was 1,716, of 1,619,703 tons. Of these, 733 were English steamers, of 1,034,097 tons; 133 were Greek steamers, of 180,426 tons, and 118 were Greek sailing vessels, of 32,178 tons; 65 were Turkish steamers, of 48,207 tons, and 352 Turkish sailing vessels, of 57,789 tons;

Austrian steamers numbered 65, of 65,891 tons; and there were 99 French steamers, of 43,347 tons; 37 Russian steamers, of 45,774 tons; 42 German steamers, of 42,537 tons; 26 Norwegian steamers, of 30,880 tons; 18 Italian steamers, of 20,486 tons; and 9 more steamers from Belgium, Spain, and other countries, and 19 French, Austrian, Roumanian, and other sailing vessels. The export of wheat in 1894 was 3,491,000 quarters; of rye, 927,000 quarters; of maize, 4,516,000 quarters; of barley, 2,627,000 quarters.

**Politics and Legislation.**—The Legislature in the early part of 1895 passed new mining laws. For miners and quarrymen a pension fund and benefit associations were established, to which the men are compelled to give up 5 per cent. of their wages and the mine owners to contribute an equal sum. The Senate passed by a large majority a bill permitting foreigners to conduct mining operations in Roumania, reversing the traditional policy of the Conservative party, which has been opposed to the bestowal of privileges upon foreigners. The Government endeavored to curb the Roumanian agitation in Transylvania, and when a large number of Italian deputies sent a telegram expressing sympathy for the Roumanians who were subjected to Magyarizing measures no notice was taken of it by the Government or the Chamber. The Roumanians in Turkey generally regarded the Macedonian agitation as dangerous to the preservation of their nationality, and the Government took rigorous measures to suppress an attempt of Bulgarian and Russian agitators to gain men and money for the revolution. Two merchants were arrested in Bucharest with arms in their possession, and many foreign agitators were expelled from the country. The Roumanians in Macedonia have much more wealth than the Bulgarians and, next to them, are the most numerous element.

In October the coalition Cabinet was broken up by the resignation of its Junimist members—Carp, Marghiloman, and Germani. The Premier asked the King to sanction a dissolution, and when this was refused the whole Cabinet resigned. The King sent for Demeter Sturdza, who, on Oct. 15, formed a Liberal Cabinet, composed as follows: Premier Minister and Minister of Foreign Affairs, Demeter Sturdza; Minister of Justice, E. Stasesco; Minister of Public Instruction and Worship, P. Poni; Minister of War, Gen. C. Budisteano; Minister of Finance, Georg C. Cantacuzino; Minister of Agriculture, Industry, Commerce, and Domains, G. D. Palade; Minister of the Interior, M. Flevea; Minister of Public Works, C. J. Stoicesco. The new Premier declared himself an advocate of the abolition of the oppressive taxation and the improvement of the condition of the peasantry. Elections to the Chamber and Senate were held in December. The Conservative party, which has been dominant since the creation of the country, was almost exterminated. The Government won all the seats except 2 in the Senate and 3 in the Chamber.

**RUSSIA**, an absolute monarchy in northern Europe, hereditary in the dynasty of Romanoff-Holstein-Gottorp in the order of primogeniture. The Emperor, called the Czar, is assisted by a Cabinet of Ministers, each having charge of an

executive department; a Council of State, which examines and passes upon projects of law submitted by the ministers; a Ruling Senate, which superintends the judiciary and watches over the general administration; and a Holy Senate, which directs religious affairs. The reigning Emperor is Nicholas II, born May 6, 1868, who succeeded his father, Alexander III, on Nov. 1, 1894. The ministers who were in office at the beginning of 1895 were: Minister of the Imperial Court and of Domains, Count J. J. Vorontsoff-Dashkoff; Minister of Foreign Affairs, Nicholas de Giers; President of the Council, N. C. de Bunge; Minister of War, Gen. P. S. Vannovsky; Procurator General of the Holy Synod, K. P. Pobedonostzeff; Minister of Education, Count J. D. Delianoff; Minister of Ways of Communication, M. Krivoshein; Minister of Agriculture and Domains, A. S. Yermoloff; Controller General, T. J. Filippoff; Minister of Justice, N. V. Muravieff; Minister of the Interior, J. D. Durnovo; Minister of Marine, Admiral N. M. Tchikhatcheff; Minister of Finance, S. J. Witte. D. M. Solsky, M. Ostrovsky, M. de Plehve, and N. J. Stoyanovsky were ministers without portfolios, and the Grand Dukes George, heir apparent, and Vladimir, Alexis, and Michael were members of the Council of Ministers. After the death of M. de Bunge, the presidency of the Council was assigned to J. N. Durnovo, who was succeeded as Minister of the Interior by J. L. Goremykin. When M. de Giers died, also in January, Assistant-Minister Shishkin took charge of the Department of Foreign Affairs provisionally until it was committed, on March 19, definitely to Prince Lobanoff-Rostovsky. The Ministry of Ways of Communication was transferred to Prince Khilkoff early in January. Gen. Count Protassoff entered the Council as adjunct to Admiral Tchikhatcheff.

**Finances.**—The budget estimate of ordinary receipts for 1895 was 1,142,957,006 rubles, besides which 2,000,000 rubles of extraordinary receipts were counted upon and 69,421,024 rubles were available from the 3-per-cent. loan of 1891 to balance the expenditures, estimated at 1,214,378,030 rubles, including 94,283,092 rubles of extraordinary expenditure for railroad construction. Of the ordinary receipts, 101,557,788 rubles come from direct taxation; 584,170,741,896 rubles from indirect taxes; 63,582,700 rubles from stamps, etc.; 42,297,106 rubles from mines, posts, and telegraphs; 248,712 rubles from railroads, domains, and other state property; 87,776,325 rubles from repayments of loans to peasants; and 78,442,150 rubles from repayments of other advances and from other sources. Of the ordinary disbursements, 227,417,014 rubles are for the public debt, 2,368,873 rubles for the superior Government bodies, 13,648,893 rubles for the Holy Synod, 11,769,264 rubles for the Ministry of the Court, 4,895,749 rubles for the Ministry of Foreign Affairs, 271,161,313 rubles for the Ministry of War, 54,923,509 rubles for the Ministry of Marine, 144,346,392 rubles for the Ministry of Finance, 31,409,378 rubles for the Ministry of Domains, 86,782,146 rubles for the Ministry of the Interior, 23,600,125 rubles for the Ministry of Public Instruction, 152,745,292 rubles for the Ministry of Roads and Communications, 26,148,870 rubles for the Ministry of



Justice, 5,386,928 rubles for the Controller General, 1,501,192 rubles for the imperial stud, and 12,000,000 rubles for unforeseen expenses.

The extraordinary expenditure of 94,283,092 rubles on railroads includes 49,816,515 rubles for the Siberian Railroad, 2,160,309 rubles for works connected with it, 32,306,268 rubles for other railroads of general utility, and 10,000,000 rubles for local roads of simplified construction.

There was a free balance in the treasury on Jan. 1, 1894, of 259,902,389 rubles. The gold accumulated in the treasury amounted to 237,000,000 rubles. A law was promulgated on May 29, 1895, permitting gold contracts, which have heretofore been forbidden.

**The Army.**—The empire is divided into 13 military circumscriptions, each of which can put an independent army into the field, 6 in Europe and the Caucasus, and 7 in Asia. The European troops are organized in 22 army corps, each containing 2 divisions of infantry, except the guards and the grenadier corps, which have 3 divisions. The active army of Europe and the Caucasus comprises 48 divisions of infantry, 22 divisions of cavalry, 48 brigades of field artillery, and 44 batteries of horse artillery. Outside the corps formations are 39 squadrons and sotnias of cavalry, 74 battalions of riflemen, 36 batteries and 8 companies of artillery, 7 brigades of engineers, and 5 battalions of train. In 1895 2 new regiments were created in Siberia, and 4 mortar batteries and 22 batteries of light artillery were formed, with 196 pieces. The Berdan rifle of the infantry is being replaced by the repeating rifle of the model of 1891, having a caliber of 7.62 millimetres and a magazine for 5 cartridges. The whole army will have been supplied before the middle of 1896. The Czar sent in August, 1895, to the Prince of Montenegro a cargo of 30,000 of the Berdan rifles, with 15,000,000 cartridges, cannon, machine guns, dynamite, and other war material as a present. The cavalry is armed with the Berdan carbine and the saber, and the men in the front ranks carry lances. The nominal strength of the army is as follows: 17,943 infantry officers and 878,636 men, 3,396 cavalry officers and 100,048 men, 2,505 artillery officers and 85,226 men, and 668 engineer officers and 26,350 men, constituting the field army of 24,512 officers and 1,090,260 men; 14,359 officers and 788,450 men of all arms in the reserve; 2,340 infantry officers and 143,550 men, 1,288 artillery officers and 75,554 men, and 206 engineer officers and 7,236 men, making altogether 3,834 officers and 226,340 men garrisoning the fortresses, and 5,285 officers and 300,412 men in the second reserve. The war footing has been estimated to be 2,532,496 officers and men, with 577,796 horses and 5,264 guns.

**The Navy.**—The fleet in the Baltic Sea comprises 8 armor-clad turret ships ("Peter Veliky," "Alexander II," "Nicolas I," "Navarin," "Sissoi Veliky," "Sebastopol," "Petropavlovsk," and "Poltava"), of from 8,750 to 12,000 tons displacement and 14 to 18 inches of armor, and armed with 2 or 4 12-inch guns, with a subsidiary armament of 6-inch guns and numerous quick-firing guns: 1 casemated armor-clad ("Gangout"), of 6,628 tons; 2 new monitors; 3 floating batteries; 4 turret ships; 12 old monitors; 8 armored cruisers ("Rurik," "Admiral

Nakhimoff," "Pamjalj-Azova," "Vladimir Mon-amach," "Dmitry Donskoi," "Minin," "Duke of Edinburgh," and "General Admiral"), of from 4,600 to 10,000 tons, carrying 8-inch, 6-inch, and quick-firing guns, and from 2 to 7 torpedo ejectors; 5 torpedo cruisers; 4 coast-guard gunboats; 10 older gunboats; 2 deck-protected cruisers; 10 clippers; 2 school ships; 6 yachts; 7 transports; and 28 first-class and 82 second-class torpedo boats. Two large cruisers ("Rurik" and "Ross-ya") with triple screws and a powerful armament are nearly completed; also 3 novel coast-defense armor-clads ("Admiral Oushakoff," "Admiral Senyavin," and "Admiral Apraxin").

The Black Sea fleet consists of 6 armor-clad turret ships ("Catherine II," "Tehesna," "Sinope," "Twelve Apostles," "Georgy Pobedonozet," and "Tri Svetitelia"), of from 10,280 to 12,000 tons displacement, carrying 4 or 6 12-inch guns, and a full complement of smaller guns, quick-firers, and torpedo ejectors, and protected by from 14 to 16 inches of side armor; 2 circular monitors; 1 cruiser ("Pamjat Merkurija"); 3 torpedo cruisers; 13 transports; 2 school ships; 6 gunboats; and 17 first-class and 7 second-class torpedo boats.

In the White Sea there is a fleet consisting of 1 cruiser, 4 gunboats, 4 armed transports, and 15 torpedo boats, and on the Caspian there are 6 armed vessels.

**Commerce and Production.**—The mining and manufacturing industries of Russia have increased in rapid progression. The yield of gold, which is found in Siberia and the Ural mountains, was 1,167,453 ounces in 1894. The product of zinc in 1892 was 5,059 tons; of copper, 4,199 tons; of pig iron, 995,000 tons; of coal, 6,800,000 tons. The products of the manufacturing establishments, of which there were 22,669, employing 878,580 hands, were valued in 1891 at 1,349,101,000 rubles. The product of the cotton mills increased from 240,000,000 rubles in 1880 to 487,000,000 in 1889. The product of cast iron increased between 1881 and 1893 from 8,810,000 to 22,830,000 hundredweight; iron, from 5,770,000 to 9,700,000 hundredweight; steel, from 6,030,000 to 9,610,000 hundredweight; rails, from 3,960,000 to 4,440,000 hundredweight; manganese ore, from 200,000 to 4,900,000 hundredweight; coal, from 64,770,000 to 148,360,000 hundredweight; salt, from 15,600,000 to 28,000,000 hundredweight; naphtha, from 6,900,000 to 108,700,000 hundredweight; raw cotton, from 293,000 to 1,225,000 hundredweight; and sugar, from 5,030,000 to 11,470,000 hundredweight. The number of cotton spindles grew from nothing to 6,000,000. The product of the distilleries is declining. In 1894 the Government undertook the business of retailing alcoholic drinks, beginning with the eastern provinces. The trade with Asia is increasing rapidly. Extraordinary efforts are being made to extend Russian trade into Manchuria, Mongolia, and western China.

**Railroads.**—While new railroads are being constructed by companies by the aid of Government guarantees and loans, the Government is steadily acquiring all the existing lines that remain in private hands. The principal new lines are in northern Russia. A railway that is being built from Tzaritzin, on the Volga, to Tchoretz, connecting with the Caucasus system, is ex-

pected to divert a large part of the grain exports of St. Petersburg to the Black Sea; but the trade of the capital and the prosperity of northern Russia will derive advantages from the important new line from Vologda to Archangel, from one that will furnish an outlet for the products of the Government of Viatka, from one that will run from St. Petersburg to Kemi, in Lapland, and from others that have been begun or are projected. A direct line connecting St. Petersburg with the terminus of the Siberian Railroad is in contemplation.

The entire line of the Siberian Railroad, which is divided into 7 sections, is 7,112 versts, or 4,713 miles. The appropriation made for its construction is 350,210,482 rubles. The work is being pushed from Cheliabinsk and Vladivostok, the termini, and from Irkutsk east and west. The work on the eastern sections, which have been advanced more rapidly than the other parts, was done partly by hired Chinese and Korean laborers and partly by convicts, who receive immunities and pay for their labor. The work of criminals on the middle sections has been satisfactory, but the engineer of the Ussuri section preferred Koreans, and sent back 2,000 convicts that were sent from Saghalien. As there was an expenditure of 15,000,000 rubles beyond the estimate on this section, a commission was appointed to investigate the matter.

**Posts and Telegraphs.**—The post office in 1893 carried 189,830,000 domestic and 25,006,000 foreign letters, 32,920,000 domestic and 4,597,000 foreign postal cards, 172,663,000 domestic and 18,106,000 foreign newspapers and circulars, and 15,225,000 domestic money letters with a declared value of 15,281,607,000 francs. The receipts of the post office were 94,107,432, and of the telegraph service 47,724,832 francs, while the expenses of both services were 98,351,448 francs.

The telegraphs had in 1893 a total length of 78,416 miles, with 154,762 miles of wire. The number of internal messages was 10,603,020, and of foreign messages 796,111 were sent and 826,011 received.

**Finland.**—The Grand Duchy of Finland has a Legislature in which the 4 estates of the nobility, the clergy, the burghers, and the peasants are represented. Gen. Count Heyden is the Governor General and Commander in chief of the troops of the circumscription of Finland. The population consists of 2,112,000 Finns, 332,000 Swedes, 6,700 Russians, 1,750 Germans, and 1,140 Lapps. The number of marriages in 1893 was 14,095; of births, 75,150; of deaths, 53,122. The revenue for 1895 is estimated at 67,635,174 marks or francs, and expenditure at the same figure. The public debt is 73,180,430 marks. The imports in 1894 were valued at 138,700,000 marks, and exports at 136,000,000.

**Politics and Legislation.**—The new Czar made it clear at the outset that he did not intend to alter the internal policy instituted by his father. Although Gen. Gourko was relieved from the governor generalship of Poland and was replaced by a diplomatist (Count Shuvaloff), the Czar made the retiring Governor General a field marshal, and publicly thanked him for what he had accomplished by his rough meth-

ods in the way of making Poland Russian and orthodox. The removal of the Jews from their homes outside the pale was renewed after an intermission, and the emigration movement thus received a fresh stimulus. Orders were issued closing the health resorts and mineral springs of Russia and the Caucasus to Hebrew invalids. The students of St. Petersburg, Moscow, and other universities wished to petition the Czar to change the obnoxious regulations lately introduced in the higher educational institutions, but were compelled by the authorities to desist. The police brutally mishandled some riotous students in St. Petersburg; and later some of the police officials sought to gain credit by making many arrests of supposed Nihilists and reviving the political prosecutions. When representatives of Zemstvos waited upon the Czar, expecting a declaration of his sentiments regarding the mooted question of local self-government, he expressed himself to the delegations on Jan. 29 in a way that disappointed the advocates of constitutionalism:

I am pleased to see here the representatives of all classes assembled to express their feelings of loyalty. I believe in the sincerity of these sentiments, which have always been characteristic of every Russian. But I am aware that in certain meetings of the Zemstvos voices have lately been raised by persons carried away by absurd illusions about the participation of the Zemstvo representatives in matters of internal government. Let all know that, in devoting all my strength to the welfare of the people, I intend to protect the principle of autocracy as firmly and unswervingly as did my late and never-to-be-forgotten father.

The Government control over the commercial, industrial, and social activities of the country is extending. The peasantry are being assisted in new ways, and the financial affairs of the nobility are being taken under the supervision of the Government. The pawnshops have been brought under Government direction, as well as the drink traffic. New banking laws empower Government officials to dictate to banks regarding the management of their affairs and the loaning of their funds. Stringent regulations have also been imposed upon the operations of stock speculators and all the transactions of the bourse. The laws of factory inspection and regulation, already very strict, have been thoroughly revised.

A new penal code, on which experts have been at work since 1881, was completed in 1895. The commission collated all the penal laws of the empire and those of the most enlightened countries, and studied the theories of scientific penology; and, after preparing a general outline of their scheme, submitted it to expert jurists of various countries for criticism. The first result of the commission's work was the enactment of laws in 1884 and 1885 for suppressing workhouses and houses of reclusion. Corporal punishment in prisons was abrogated, and at the suggestion of the commission laws were enacted against usury and the fraudulent acts of officials.

A commercial treaty was concluded with Greece; and on June 11 one between Russia and Japan was signed at St. Petersburg, similar in its provisions to those already made by Japan with Great Britain, the United States, and Italy.



## S

**SALVADOR**, a republic of Central America. The legislative power is vested in a single Chamber of 42 members, elected for each annual session by direct universal suffrage. The President is elected by universal suffrage for four years. Gen. Rafael Antonio Gutierrez was proclaimed Provisional President in June, 1894, by the army that expelled Gen. Carlos Ezeta, and was afterward elected for the term beginning March 1, 1891, with Dr. Prudencio Alfaro as Vice-President. The Cabinet was constituted as follows: Foreign Affairs, Justice, and Public Instruction, Dr. Jacinto Castellanos; Interior, Dr. Prudencio Alfaro; Finance and Public Works, Dr. Cornelio Lemus; War and Marine, Estanislao Perez. The area of Salvador is 8,100 square miles. The population was 803,354 at the end of 1894.

The treasury accounts for 1894 make the revenue \$8,818,000 in silver, of which \$4,004,000 came from import duties, \$902,000 from the export duty on coffee, \$1,978,000 from the impost on brandy, \$66,000 from stamps, and \$1,868,000 from other sources. The disbursements were \$8,569,000, of which \$2,675,000 were spent by the Minister of War, \$1,138,000 by the Minister of the Interior, \$3,378,000 by the Minister of Finance, \$213,000 by the Minister of Justice, \$137,000 by the Minister of Public Instruction, \$651,000 by the Minister of Public Works, \$78,000 by the Minister of Foreign Affairs, and \$299,000 by the Minister of Public Safety. The internal debt on March 31, 1894, amounted to \$11,000,000, and the external debt to £254,000.

The imports in 1894 were valued at \$2,171,000, and the exports at \$6,611,000. The exports of coffee amounted to \$5,035,000; indigo, \$1,120,000; tobacco, \$100,000; ores, \$82,000.

There are 54 miles of railroad and 1,803 miles of telegraph wires.

**Political Disturbance.**—A futile attempt at a counter-revolution was made in 1895 by the followers of Carlos and Antonio Ezeta. On Feb. 1 a conspiracy to proclaim Gen. Antonio Ezeta President was discovered. Col. Delfino Berrios and other leaders were ordered to be shot. Col. Angel Vasquez, the former chief of police, was taken from jail and lynched. Florencio Bustamante, after remaining for some time in Mexico plotting for the return of the Ezetas, afterward went to Nicaragua, where he was arrested by the authorities and escorted on board an American passenger steamer, the "City of Sydney." When this vessel entered the port of La Libertad the Salvadorean authorities demanded the surrender of the refugee, and the captain finally gave him up. In September ex-President Ezeta, who had been collecting arms and carrying on a brisk correspondence with his partisans, left San Francisco for Mexico with the intention of joining his supporters there and entering Salvador to head a revolution. An insurrection was started at Sonsonate, but it was speedily suppressed after a fight in which most of the leaders were killed or captured. Some of the weapons that Ezeta had were taken from him by the Mexican au-

thorities, and when he found that President Gutierrez was informed of his movements and able to hold in check his adherents in Salvador he relinquished his design.

**SALVATION ARMY.** Attention was called in the twenty-eighth year's report of the Salvation Army for 1895 to the fact that, with an increasing expenditure on foreign and heathen work, the management expenses of the central headquarters had rather decreased than otherwise; also, that apart from the gifts of the Salvationists themselves, the income of the army in proportion to its responsibilities was "positively insignificant." The general income and expenditure account for 1894 amounted to £28,145; while £18,483 were raised for the Jubilee fund. The army had 11,335 officers, who preached in 29 languages at 4,633 stations or towns, and 36,126 voluntary officials specially selected and appointed to take definite work. Russians in Finland and the scattered populations of Queensland, California, and the Northwest Provinces of Canada were reached by means of mounted outriders. Much work was done for the army and navy in England and India. The operations and accounts of the "Darkest England" scheme were not included in this report.

The Salvation Army in the United States returned in December, 1895: Number of corps and outposts, 664; of officers accepted, candidates, and persons employed, 2,009. Besides the 587 corps and 77 outposts, the army had 14 slum posts, 6 rescue homes, 3 food and shelter depots, 5 outriders' circuits, 20 training garrisons, and 2 labor bureaus. "Slum work" had been done in the cities of New York, Brooklyn, Boston, Philadelphia, Chicago, Buffalo, and St. Louis. The following summary is made of the work of six months:

Souls saved, 1,160; families visited, 33,011; saloons and dives visited, 45,241; persons dealt with on streets and in saloons, 74,098; meetings in saloons etc., 713; garments given, 9,209; children cared for, 5,483; houses visited, 12,535; persons attended meetings, 196,784; children attended meetings, 8,394; hospitals and persons visited, 148. The indoor attendance in halls of the army in the United States for one month was estimated at 713,037, while the week-night congregations numbered 1,089,844.

**SAMOA**, a monarchy in the Pacific Ocean, declared independent and neutral by a treaty concluded at the Samoan Conference in Berlin on June 14, 1889, between Germany, Great Britain, and the United States. King Malietoa Laupepa, who had been deported during the German occupation, was restored on Dec. 10, 1889. The Chief Justice, appointed under the treaty, is Henry C. Ide, of Vermont. The President of the Municipality of Apia and adviser to the King is E. Schmidt. These officials receive salaries of \$6,000 and \$5,000 respectively. The King's allowance is \$150 a month.

The area of the 14 volcanic islands forming the kingdom is 1,700 square miles. The native population numbered 35,565 in 1887. They belong to the Polynesian race, and profess the

Christian religion. There are 450 foreign whites and 800 or 1,000 contract laborers from other islands. The revenue collected from foreigners was 141,919 German marks in 1894, of which 20,913 marks came from direct taxes, 8,857 marks from a tax on buildings, 94,005 marks from import duties, and 18,144 marks from export duties. Of the total, Germans contributed 66 per cent., English 14 per cent., Americans 9 per cent., and other foreigners 11 per cent.

The dutiable imports in 1894 were valued at 1,791,540 marks, of which 912,231 marks were imported by German, 363,055 marks by British, 270,067 marks by American, and 246,187 marks by other houses. The exports amounted to 1,288,545 marks, of which the Germans exported 1,205,093 and the British 83,452 marks. The exports consist of copra, cotton, coffee, and fresh fruits.

The system of government and international control created by the Berlin final act has proved ineffective. The King has never been recognized by the Tumua party, and the people of his own party pay no attention to the edicts issued in his name. The President of the Municipality of Apia has neglected to pay him his allowance, leaving him often without the necessities of life. None of the islanders will pay the poll tax of \$1, and the revenue collected from foreign traders has diminished and trade is falling off because the natives under the lawless conditions that prevail get out less and less copra. Except on the German plantations, production has almost ceased. Arms and ammunition were smuggled in for the rebels from New Zealand. Tamasese and his allies attacked the tribes belonging to the King's party, but before November hostilities were at an end. The commission appointed to investigate the land claims of foreigners found that Germans had legally secured titles to a large part of the best land, but that many of the claims presented by British and Americans were invalid.

**SANTO DOMINGO**, a republic in the West Indies occupying the eastern part of the island of Hayti. The Congress, a single chamber of 22 members, and the President are elected indirectly for four years. Gen. Ulises Heureaux was re-elected for his third term in 1892.

The treasury receipts in 1894 were \$2,756,929, of which \$2,674,446 were derived from customs. The public debt on Dec. 31, 1894, amounted to £1,905,035 sterling, \$2,058,415 in gold and \$4,790,520 in currency.

The imports in 1894 were valued at \$2,898,653, and the exports at \$5,383,471. The principal exports are coffee, sugar, cacao, rum, tobacco, mahogany, logwood, lancewood, hides, fustic, and honey. The imports are cotton cloth, hardware, crockery, breadstuffs, and provisions.

Diplomatic relations with France were broken off in 1894 in consequence of the seizure by President Heureaux of \$60,000 in a French bank upon which the Government had a claim. The French Government demanded restitution and an apology, also an indemnity for a French citizen who was imprisoned for twenty-two months without trial, and for a French merchant at Samaná, Noel Cacavelli, recently murdered at the instigation, it was alleged, of the Dominican authorities. Santo Domingo proposed to submit

the differences to the arbitration of Spain, but the arrangement was not consummated. In January, 1895, French war ships went to Port au Prince, and thence the admiral telegraphed that unless a settlement was made at once he would proceed to Santo Domingo and seize the customhouse. President Heureaux replied defiantly and prepared for a bombardment. Meanwhile the United States Government intervened, intimating that it could not view with indifference military action against Santo Domingo. Negotiations were resumed, and in the end the Dominican Government agreed to apologize for breaking the seals placed by the French consul on the Banque Dominicaine and to restore the money seized, and refer the dispute with the bank to the arbitration of Spain; to pay Capt. Boimare 1,000,000 francs as compensation for illegal imprisonment; and to pay an indemnity of 225,000 francs to the family of Cacavelli, whose murderer had been executed already. The French minister arrived in Santo Domingo with Admiral Fournier on April 16, and they were received with honors by the President and welcomed by the populace. The dispute between Santo Domingo and Hayti regarding the boundary, which has often given rise to friction and hostile demonstrations, has been referred to the arbitration of the Pope.

An uprising against the Government occurred in the middle of October, at Banica, a town on the frontier of Hayti. President Heureaux promptly dispatched troops, who killed all the rebels, giving no quarter. In other places in the northern and eastern parts of the country where the people were organized for rebellion, numerous arrests were made, and many persons were court-martialed and shot.

**SEARCH LIGHT.**—The search light is not a modern invention; the principle involved in its construction has been familiar for centuries, though, like the telescope, its exact origin is uncertain. He who first placed a light in the focus of a concave reflector was its inventor. All headlights to locomotives are search lights, though, from the thinness of the material employed in their construction and their liability to change form because of expansion and contraction by heat and cold, and for other reasons, they are very imperfect ones.

Of the four curves that may be cut from a cone—the circle, the ellipse, the parabola, and the hyperbola—the last only will parallelize the rays from a light set at its focus. Until recently all lighthouse illumination was produced by the oil lamp greatly intensified by the Fresnel lens, but the more recent introduction of the electric arc light has wrought a revolution in the science of parabolized lighting, and has given a largely increased penetration through fog. The light thus produced, reflected from a parabolic mirror, has been named the search light, and is the most intense artificial light known, being limited only by the power of the dynamo generating the electricity therefor. At the introduction of the electric search light the rays were parallelized by parabolic reflectors of metal, and later by parabolic lenses, which soon displaced the long-used Fresnel lenses. The Mangin projector, as it was called, stood foremost among search-light projectors for many



years until, owing to its greater efficiency and cheapness, the parabolic glass mirror largely supplanted all other forms of projectors.

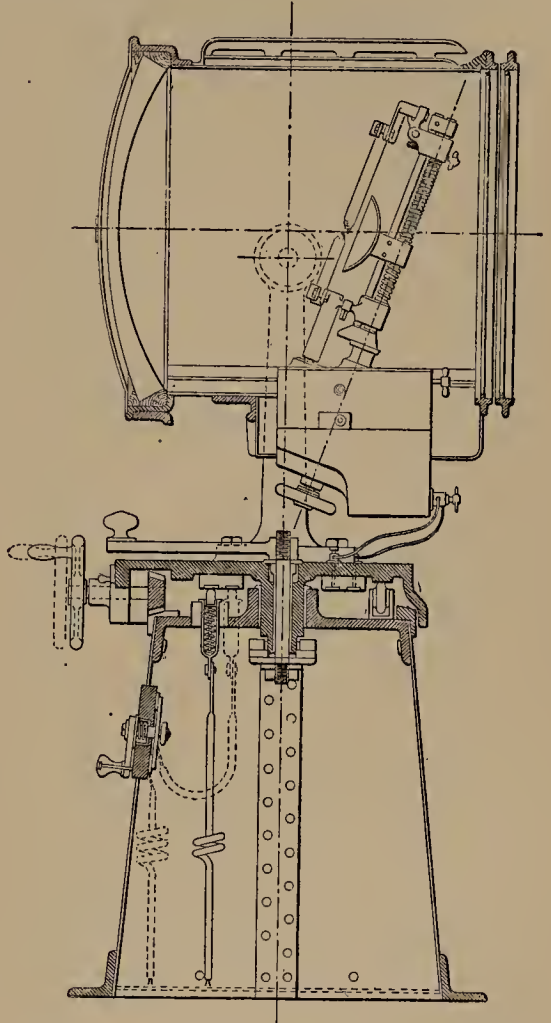
An incident ray from the arc light at the axis of the mirror and at its focus is on entering the mirror bent toward the normal and on its exit is turned away from it, so that the parabolic glass reflector gives less chromatic dispersion than the Mangin lens and also subtends a greater solid angle, reflecting all rays within an angle of  $145^\circ$ . For the greatest utilization of the light of the arc the crater on the positive carbon must be in focus and face the mirror.

The search light which attracted so much attention at the Columbian Exposition of 1893 and the Midwinter Fair of California in 1894 is now on Echo Mountain, Los Angeles County, where it commands the extensive San Gabriel valley, and its beam gives a light sufficient for the reading of a newspaper 35 miles distant. Not only this, but its piercing ray, though emanating 35 miles from the Pacific coast, is plainly visible at the island of San Clemente, 105 miles out at sea. How much farther the ray could be seen were it not for the convexity of the earth we can not know. As the construction is essentially the same in all, a description of the Echo Mountain search light, which, except for its greater size and penetrative power, is a counterpart of those used on shipboard, will suffice.

The reflector, made in Paris, is of optical glass, 5 feet in diameter and at the edge  $3\frac{1}{4}$  inches thick, though its center is only one sixteenth of an inch thick. Apparently it is free from spherical aberration and reflects the luminous beam sensibly parallel. Its weight is 800 pounds, and it is mounted in a metal ring weighing 750 pounds. The combined weight of mirror, ring, and cover is about 1,600 pounds. The tube, at one end of which this mirror is mounted, is like an immense drum, and its door consists of a metal rim in which are fixed plate-glass strips  $\frac{1}{16}$  inch thick and 6 inches wide.

The electric lamp, which slides upon ways attached to the bottom, is 6 feet high and weighs 400 pounds. Its carbons, manufactured especially for it, are brought from France. The upper or positive carbon is  $1\frac{1}{2}$  inch in diameter and  $22\frac{1}{2}$  inches long, with a  $\frac{1}{16}$ -inch core of soft carbon running from end to end through its center. The lower or negative carbon is  $1\frac{1}{4}$  inch in diameter, is 15 inches long, and has also a core of soft carbon through its center. The object of this cylinder of soft carbon is, in the positive carbon, to facilitate the formation of the "crater," and in the negative carbon, to prevent that of the "mushroom." The positive carbon is set a little in front of the negative, and thus nearly all the intense light of the incandescent crater is cast upon the mirror. The maximum current at which this lamp operates is 200 ampères, which gives the lamp a luminous intensity of 100,000 candles and the reflected beam a total luminous intensity of 375,000,000 candles. All the devices for adjusting the positions of the carbons and the lamp are brought through the drum to the outside, and are arranged in close proximity to one another at one side, so that all may be manipulated by the operator without moving from his position. The tube may be moved, both in azimuth and

declination, with great ease and rapidity, a necessary qualification in those designed for use in naval warfare. The illustration shows the internal arrangement. Its constructor was E. R. Knowles, C. E., at the Schuyler Electric Works, Middletown, Conn.



As yet we have no reliable data regarding the utility of the search lights of ships during naval engagements, though against the shocks and strains incident to rough handling they have been tried and found to stand the test.

The larger war ships are equipped with a sufficient number (differing in the navies of different nations) of search lights to illuminate the entire circle of the horizon and so detect the approach of torpedo boats.

To diminish the concussion from the firing of the guns, and in order to cover a larger area of water surface, the light should be placed as near the water line as possible. But this position of the search light is not certain to result to the advantage of the vessel using it, as the water line is the most vulnerable point of attack, and, while the beam will reveal objects at a distance of 3 miles, the ship from which it springs may be seen 25 miles away. But its use may, by the introduction of signals, prevent the confounding of friend with foe. And by the opening and closing of a shutter it will be quite possible

to telegraph Morse or cipher messages with important information from vessel to vessel.

Projectors of the following dimensions and powers are now common on our war ships: 30 centimetres diameter, 3,000 candle power; 40 centimetres diameter, 20,000 candle power; 60 centimetres diameter, 35,000 candle power; 90 centimetres diameter, 40,000 candle power.

Several nations, notably the United States and Germany, have made elaborate experiments on the visibility of the search light at sea in clear, cloudy, foggy, and moonlight nights, and have tested different colors. The result obtained by the German committee was that on a clear, moonless night a white light of 1-candle power was visible for 1·4 mile, and 1 mile on a rainy night. The American test showed that in very clear weather a light of 1-candle power could be plainly seen at the distance of 1 nautical mile; 1 of 3-candle power, at 2 miles; 1 of 10-candle power, at 4 miles; 1 of 29-candle power, faintly at 5 miles; while 1 of 33-candle power was seen plainly at that remove. With green light a 106-candle power was visible for only 4 miles. White light was found to be far more penetrating than any tinted light, especially through fog. Experience has demonstrated that no automatic device can take the place of a hand-controlled lamp. With automatic control two great difficulties occur which only hand control may remedy, viz., the shifting of the crater into an unfavorable position and the building up of an obtuse point on the end of the negative carbon, technically called a "mushroom," which the operator breaks off by bringing the carbons together, which no automatic control could do. Even were it possible to do this mechanically, the lengthening of the arc and probable extinction of the light would result. And yet, notwithstanding these objections, the automatic lamp has some advantages.

While, as we have seen this greatest among search lights, the Echo Mountain instrument, has a mirror 5 feet in diameter, those employed in the war ships of Germany have the standard size of 90 centimetres (about 35 inches), with a thickness of  $\frac{1}{16}$  inch, the two surfaces being parallel.

Metal reflectors, though as easy to construct as those of glass, are, from their rapid deterioration of luster, especially at sea, of little value. Though heretofore France and Germany have surpassed all other countries in the manufacture of these instruments, yet the success embodied in the greatest of search lights, described in this paper, must attest to the excellence of American work in this line.

**SERVIA**, a monarchy in southeastern Europe. The legislative body is a single Chamber, called the Skupstina, consisting of 134 members, elected by direct universal suffrage. The reigning King is Alexander I, born Aug. 14, 1876, who succeeded to the throne abdicated by King Milan, his father, on March 9, 1889, and assumed the royal powers, superseding the Regency by a *coup d'état*, on April 13, 1893. The following ministers were in office at the beginning of 1895: Premier and Minister of the Interior, Nikola Christich; Minister of Foreign Affairs, Milan Bogitshevich; Minister of Public Works, S. Zdravkovich; Minister of Public In-

struction and Worship, L. Klerich; Minister of Justice, M. K. Georgievich; Minister of Agriculture and Commerce, S. Losanich; Minister of Finance, V. K. Petrovich; Minister of War, Gen. M. Pavlovich.

**Finances.**—The budget for 1895 makes the revenue 63,755,600 dinars, or francs, of which 20,544,600 dinars are derived from direct taxation, 6,000,000 dinars from customs, 4,082,000 dinars from excise, 15,940,000 dinars from monopolies, 2,360,000 dinars from the law courts, 3,479,000 dinars from the post office, telegraphs, etc., 5,500,000 dinars from state railroads, 600,000 dinars from school and sanitation funds, and 5,250,000 dinars from other sources. The expenditures are estimated at 63,623,868 dinars, of which 1,200,000 are the civil list, 21,691,530 dinars the interest on the debt, 120,000 dinars the expenses of the Skupstina, 158,294 dinars the expenses of the Council of State, 226,800 dinars general expenses, 2,186,699 dinars pensions and subventions, 1,853,266 dinars the appropriation for justice, education, and worship, 1,170,526 dinars for foreign affairs, 2,482,720 dinars for the interior, 6,423,857 dinars for finances, 12,465,000 dinars for war, 4,885,055 dinars for public works, 2,980,666 dinars for agriculture and commerce, 396,571 dinars for the Board of Control, and 1,220,713 dinars for miscellaneous expenses.

The debt on July 1, 1895, amounted to 360,511,600 dinars.

**The Army.**—The active army in 1894 numbered 900 officers and 16,147 men, with 3,656 horses and 206 field guns. The army is organized in 5 divisions, and in case of mobilization 105,575 men constitute the field army, outside of which are 15,065 fortress artillery, guards, mountain artillery, sappers and miners, etc., and 27,382 depot troops and reserves, 125,516 men in the first ban, and 63,785 in the second ban, bringing up the full war strength to a total of 337,323 men.

**Commerce and Production.**—The exports of cattle and pigs reach 20,000,000 dinars a year; wheat and Indian corn about the same, and dried prunes in some years half as much, the product being from 20,000 to 40,000 tons. The total value of the imports in 1895 was 34,881,000 dinars, of which 20,529,000 dinars came from Austria-Hungary, 3,592,000 dinars from Great Britain, 2,814,000 dinars from Germany, 2,517,000 dinars from Turkey, 1,447,000 dinars from the United States, 1,183,000 dinars from Roumania, and smaller amounts from Russia, Italy, Switzerland, France, and Belgium. The exports were valued at 46,023,000 dinars, of which 41,116,000 dinars went to Austria-Hungary, 2,814,000 dinars to Germany, 2,517,000 dinars to Turkey, and the rest mostly to neighboring countries.

**Communications.**—The railroads have a total length of 336 miles. There are 1,916 miles of telegraph lines, with 4,073 miles of wire. The number of dispatches sent in 1894 was 898,535, of which 764,486 were internal, 119,192 international, and 14,857 transit dispatches. The post office carried 10,316,000 internal, 5,459,000 international, and 1,897,000 transit letters and journals. The receipts of the postal and telegraph department were 1,016,454 francs, and expenses 1,312,095 francs.



**Politics and Legislation.**—On Jan. 12, 1894, Ranko Taisieh, a Radical peasant leader and Deputy, Dimich Taushanovieh, Radical ex-minister, and three others were condemned to three years' imprisonment for high treason, and ex-Deputy Czebinatz, who had confessed and made revelations implicating the others, was sentenced for two years. They were convicted of having formed a plot to seize the young King and to place Prince Peter Karageorgevich, the head of the former ruling house, upon the throne.

The Radicals would not accept the forcible suspension of the Constitution of Jan. 2, 1889, and the stringent press laws and other repressive measures of the Christich ministry. They were unalterably opposed, furthermore, to the substitution of a centralized police for the old communal gendarmerie. Gen. Gruich and Pashich, their leaders, were supported by Ristich and many other Liberals, and even by a section of the Progressist party, headed by ex-Premier Pirotshanatz, in their demand for the convocation of a great Skupshtina for the restoration of the Constitution or its revision in a constitutional manner. They threatened to withdraw in a body from the Skupshtina, which would have been a dangerous form of protest, since 80 per cent. of the voters are adherents of the Radical party, although in the new Skupshtina, elected under the pressure and intimidation of the Belgrade authorities, the Progressists had a majority, and there were a considerable number of neutrals, who were the most obedient of ex-King Milan's followers. As the Radicals had generally kept away from the polls, very few of their candidates were elected. The ministry, in which Liberals held the most important places, had therefore to meet a Chamber in which it was not sure of a majority, although it had selected the members.

The Skupshtina was summoned to an early session on April 22, especially for the purpose of considering an arrangement for the unification of the debt that M. Petrovich had made with the syndicate of Paris, Berlin, and Vienna bankers who have negotiated all the Servian loans. The proposed conversion of 5-per-cent. bonds into a 4-per-cent. loan promised to save the treasury 7,000,000 dinars a year. Nevertheless the Finance Committee condemned, and the Skupshtina rejected the propositions of the bankers to which the Minister of Finance had agreed in Paris in December, 1894. The bargain was to issue to these bankers, at 70, a loan of 98,000,000 dinars, which was to take the place of several smaller loans bearing the higher rate of interest, and originally issued at 75. The syndicate assumed the responsibility of providing for the payment of the coupons for three years. The salt monopoly and newly established monopolies of petroleum, matches, and cigarette paper was the guarantee, the collection of these revenues to be controlled by special representatives of the bondholders. If the agreement was not ratified by the Skupshtina, the Government could not meet its immediate obligations, for the treasury accounts showed a deficit of 5,000,000 dinars, and no other provision had been made for the payment of the July coupons. But the majority of the Skupshtina thought that the

price offered for the new bonds was too low, and objected even more to giving to the syndicate the exclusive privilege of unifying the whole debt on similar terms, and yet more strongly to the form of the guarantees demanded, viz., a control over the customs and monopolies pledged for the loan, deeming such foreign control to be dangerous and dishonorable for Servia. Some of the Radical politicians raised the cry that the existing obligations were unfair and oppressive, and that the way to balance the budget was to cut down the capital of the debt to the value actually received, which would improve the security to such an extent as to warrant the reduction of interest to the rate paid by the strongest governments. This scheme of repudiation found no favor with responsible statesmen.

When his scheme was voted down, M. Petrovich resigned on May 4, and King Alexander provisionally intrusted the direction of the Ministry of Finance to M. Zdravkovich.

Before the Skupshtina adjourned it confirmed all the laws that were enacted or restored after the *coup d'état* of May 21, 1894. It also voted an annual allowance of 360,000 dinars to ex-King Milan in recognition of his high qualities and great services to the country. One of its first acts had been to revoke the decree of perpetual banishment enacted against both ex-King Milan and Queen Natalie. Milan had paid no attention to the decree, but the Queen mother insisted on having a legal right before visiting her son or taking up her residence again in the capital. She returned on May 10, and was greeted enthusiastically by the populace and welcomed by the parties that had deserted her in her disgrace and misfortune, but she refused to meet the ecclesiastical dignitaries who had sanctioned her divorce, since annulled.

On May 14 Stefan Popovich was appointed Minister of Finance. He entered at once into negotiations with the foreign bankers, after consulting with the leaders of all the parties, and concluded in June a new financial arrangement. As the Progressists would no longer work harmoniously with the Liberal ministry, M. Christich and his colleagues on July 3 tendered their resignations. After M. Simich had failed in an attempt to form a coalition ministry in which moderate Radicals should co-operate, one was constituted on July 7 of Progressist elements, as follows: Premier and Minister of Foreign Affairs, Stojan Novakovich; Minister of the Interior, Dimitri Marinkovich; Minister of Finance, Stefan Popovich; Minister of War, Gen. Franassovich; Minister of Public Works and Minister *ad interim* of Commerce, Michael Pektovich; Minister of Public Instruction, Prof. Ljubanir Kovacevich; Minister of Justice, M. Nineich. The first act of the new ministry was to pardon the prisoners who were convicted of treason in January. The Russian Government offered a loan to relieve Servia from her pressing financial difficulties. This the Government accepted, combining it with the conversion scheme. By the new arrangement with the syndicate, the committee charged with the supervision of the monopolies was to consist of representatives of the bondholders and a large contingent of Servian members. The bill was passed by a large majority on July 20.

When the Hungarian Government prohibited the entry of Servian pigs on sanitary grounds the Servians threatened to retaliate by breaking off commercial relations with Austria-Hungary. A modification of the regulation was secured in September, whereby pigs exported to Hungary were subjected to a week's quarantine, and those consigned to Italy were allowed to pass through to their destination.

When the Skupshtina met on Nov. 27 a bill was announced for the reform of the Constitution, with the aim of securing stability. The financial difficulties were surmounted by the aid of the Russian Government, and guarantees were secured for the payment of the interest on the debt and its amortization, and for the conversion and unification of the principal loans.

**SLOYD.** Since 1872 the study of sloyd in the public schools of Sweden has created intense interest. The sloyd, a system of manual training in wood and metal work, is taught as an optional study in 1,500 schools there to boys of the age of ten to fourteen years. The Nääs system, arranged by Otto Salomon, director of the Nääs Normal College, has been universally adopted. This has been called the sloyd system. Its object is solely educational. The faults of the old method of teaching only theoretical subjects being recognized, the best ideas of the teachers in this field were studied, and a method was formulated which combines hand and head work in the simplest way possible.

In speaking of the sloyd system, it is necessary to avoid confounding the sloyd series of models with the system itself. The two are entirely distinct. A series of models is never more than the outward expression of an idea. Models of almost any kind could be constructed on the principles that underlie those of the Nääs series, and, though very different in form, they might have equal educational advantages, and might even be more applicable in certain instances.

The word sloyd (Swedish, *Slöjd*) is from the Icelandic, and means dexterity or skill. Old Swedish has the adjective *slög* (artistic or skillful). In the Low German dialect the word *Klüttern* has a similar signification. There is in Sweden a distinct class of workmen known as sloyders, whom we would call "jacks-of-all-trades," as they are able to do various kinds of odd jobs about a house. The Swedish word *Slöjd* exists in other languages, but has a more restricted meaning, referring to the educational idea. In English it is synonymous with manual training as distinct from technical and industrial training.

The sloyd has for its first object to give an indirect preparation for life by teaching branches of certain trades and by imparting a general dexterity to the hand. The Swedes set out to accomplish this by teaching the boys in the schools the rudiments of special trades; but they discarded that system some years ago, adopting the present one in its stead. Experience taught them that the boy was not old enough to know what particular trade he should choose. Again, usually only one trade could be taught, and this, of course, did not accomplish the aim with which the instruction was given. It was impossible to teach any one trade thoroughly in the short time that could be devoted

to it at school, and, as a result, many children left the school impressed with the notion that they were competent workmen.

The second object of the sloyd is to develop the mental faculties and, at the same time, to impart positive useful information. It embraces the doctrine that educators and teachers have been preaching for a long time—that of giving a practical direction to mental activity. Man is not only born to think, but also to do. He is a creative animal; he can and must embody his ideas in form.

The third object of the sloyd is to make it a means of intensifying intuitions, thereby giving a clearer insight into the nature of things. As Herbart desired to see instruction more concentrated—all the subjects closely interwoven, the one serving to aid in the comprehension of the other—so the sloyd, in combining the theoretical and practical, by teaching the elements of the arts and sciences and the method of construction and illustration, aims to excite the intuitive faculty.

Sloyd aims to cultivate dexterity in the manipulation of tools. This is considered one of its secondary aims. Too much stress must not be laid upon the use of tools, as the pupil is apt to lose interest in the work if he does not see a full and quick result for his labor. In France, at one time, the children were taught various exercises in the use of tools, and models were not made at all. In the Danish system the making of models is considered of secondary importance. Very few are made, and these only because they necessitate certain useful exercises of the tools. The use of many tools should be taught, but should serve rather as a means than an end to this instruction.

Primarily, sloyd is to be used as a means of formal education—formal, as opposed to material. A material education seeks to impart a definite knowledge of things for their own sake. A formal education seeks chiefly to develop the innate mental powers, and selects and imparts knowledge in order to strengthen character, will power, memory, perception—in short, all those faculties of the mind which at birth are dormant, and which through education become characteristics of the individual.

Sloyd has for its aims, as a means of formal instruction, to instill a love for work in general; to create a respect for rough, honest, bodily labor; to develop self-reliance and independence; to train to habits of order, exactness, cleanliness, and neatness; to teach exacts of attention, industry, and perseverance; to promote the development of the physical powers; to train the eye to the sense of form; and to cultivate dexterity of hand. The following are the principles which have served as guides in the choice of the models:

1. All articles of luxury have been excluded.
2. The objects have a practical value; that is, they can be used.
3. The objects can be finished by the pupils themselves without any help.
4. The objects are such that they can be made entirely of wood. This does not mean that the requisite fixings, such as screws, hangers, and hinges, may not be employed, but that the child should not be required to make these things.
5. The work is not to be polished. This refers to



the use of clear varnishes, French polish, etc.; sand-paper may be used. The object is to encourage the children to work well, and not to think too much of the surface appearance.

6. As little material as possible is to be used. The lesson to be enforced is that the value of the model depends not upon the material used, but upon the amount of real work expended upon it.

7. The pupils are to learn to work both in hard and soft wood. It is not wise to have them work too much in the hardest kinds of wood, as it is a great strain upon their physical strength.

8. Turning and carving are to be used as little as possible, although both may be included. Experience has shown that they are not as valuable as the carpentry sloyd. The time for manual work in the public school is of necessity limited, and to teach turning and carving for educational purposes would require as much time as is necessary for the sloyd. Carving in all cases ought to be left for the end of the course.

9. The models must develop the pupils' sense of form and beauty. In order to attain this object, the series should include examples of form, such as spoons, ladles, and other curved objects.

10. The whole series must be arranged so as to teach the pupils the use of all the necessary tools and to know and perform the most important manipulations connected with woodwork. Each model ought to complete the preceding ones and to teach the use of some new tool or some new kind of wood. The models constitute a series only when there is a logical connection between all of them, each one being the supplement as well as the complement of its predecessor.

In the arrangement of the models the following points have been kept in view:

1. The series must progress without break from the easy to the difficult, from the simple to the complex.

2. There must be a refreshing variety both in the exercises and in the models.

3. The first models of the series should be of such a nature that they can be executed quickly. The tasks must be such that results will speedily follow, so that the children by degrees will gain sufficient confidence to undertake work requiring more extended time.

4. In making the first models only a small number of tools should be used.

5. The models must follow in a progressive order, so that by means of the preceding work the pupils will have attained the necessary aptitude to make the succeeding without any direct help from the teacher, and, consequently, it will not be more difficult to make one model than another. The making of the 49 previous models should render No. 50 no more difficult than No. 1 was at the outset.

6. The models must be of such a nature that the child is able to make an exact copy, and not only an approximate one.

7. The knife should be used as the fundamental tool. As nearly every child knows how to use the knife, we have hereby a means of enabling the pupil to proceed from the known to the unknown.

8. Rather hard wood should be used for the first models, as it is more difficult to work with the knife upon soft wood.

It is desirable that each pupil have a set of tools and be held responsible for keeping them in good order. A special cupboard should be placed in the room, wherein most of the tools can be put away after school hours. Each tool should be numbered according to the bench to which it belongs. The art of sharpening tools must be taught.

An opinion has prevailed that the tools used in the school should be smaller than those of the trades, and this idea was carried out in Denmark,

as well as in France, until within recent years. But experience shows that children of the age of eleven to fourteen years are quite capable of using full-sized tools, and even manage to work better in consequence thereof, since the weight of the tool frequently assists in the doing of the work, as, for instance, in planing. Furthermore, if small tools are used, the parents and the children are not apt to regard the work as real.

The Nääs system is not suitable for children under ten years of age. In Sweden the sloyd is taught in the public school to boys of the age of eleven to fourteen years. The amount of time that is devoted to it is from four to six hours a week, or about one hundred and twenty-five hours a year.

It has been found best to extend the duration of each lesson to two hours. Manual work is perhaps best taught in the middle of the morning, as it then serves to break the monotony of book studies, and yet the children are not too tired to take an interest in the exercise.

The teacher is the most important factor in education. The earnest spirit of the teacher working amid poor surroundings will bring about better results than fine premises, external advantages, and expensive apparatus. The teacher must assume a great responsibility, and for this reason artisans who are not teachers should not be employed to give instruction in manual woodwork. The greatest recommendation for the artisan is his superior technical skill. The principle that must not be lost sight of is that this instruction is an educational means, and that only a skillful teacher can properly impart his knowledge and impress it upon the child's mind. It is necessary for the teacher to take a course in manual work and to become sufficiently acquainted with the manipulation of tools to be able not only to understand the method, but also to make the models.

In 1870 the sloyd was first taught in some of the primary schools of Sweden. Secretary-of-State Carlsson, who at that time was also at the head of the Ecclesiastical Department, took a great interest in this subject, and in 1877 he introduced a bill in the Riksdag suggesting the adoption of a system of manual work for the schools throughout the kingdom. As a direct consequence of his resolution, there appeared on Sept. 11 of that year a royal mandate to the effect that to each school where the sloyd had been taught a yearly stipend of 75 kronor (\$21) should be paid. This was intended to meet the expense of the material to be used. At this time a grant of 1,500 kronor was paid each year to about 200 schools. The number of schools in which the sloyd was taught increased so that 1,278 schools received a subvention in 1889.

In 1876 a private normal sloyd school was established in Karlstad, and in 1877 the Government laid a proposition before the Riksdag to introduce the sloyd in all the public seminaries for teachers. At this time, as well as in 1880 (when the same question was moved by individual members), the Riksdag rejected the proposition, and it was not until 1887 that it was agreed to introduce the work in 3 public normal colleges—Karlstad, Lund, and Hernösand.

The Landsting (State Assemblies), the Hus-hållningssällskap (Industrial and Agricultural As-

sociation), and several private persons had worked zealously for this purpose. The Board of Aldermen of Stockholm introduced the sloyd in the city schools in 1876. In Gothenburg it had been introduced on a small scale in 1872, and five years later it was taught in all the schools.

At first the work consisted in teaching the elements of the various trades. In Stockholm the transition to a regular educational manual-training system took place in 1882, and in Gothenburg in 1887. In Gefle, Norköping, Linköping, Malmö, and other towns, the educational sloyd was taught from the outset.

At the Nääs Sloyd Normal College the method of instruction was originally worked out. Though the sloyd is not a compulsory subject, there are in Sweden nearly 1,500 schools, out of a possible 3,800, which have introduced the teaching of the Nääs system. At the Nääs College, established in 1875, up to September, 1890, 1,349 teachers (1,060 of them being Swedes) had taken courses.

In Norway the Storthing of 1866 accepted the proposition of the Government, and decided to give to every public school in which sloyd was taught the sum of 80 kroner. The sloyd is taught in 6 public normal colleges, and also at the Fredrikshåldssloyd-forenings Arbeidsskole (Fredrickshall Sloyd Association Working School). The instruction in all the schools is in wood sloyd, and the pupils who have had at least two hundred hours' instruction and have done the required amount of work receive a special mention of this fact in their diplomas. According to the new Norwegian school law, the sloyd is compulsory for boys of the age of twelve years, and optional for younger or older pupils.

By the statute of May, 1866, manual work was made obligatory for the country schools of Finland, and optional for the city schools. In all teachers' seminaries some manual work is taught. In the public schools there are many woman teachers, and special courses have been arranged for them. The Finnish Hushållningssällskap encourages this work by giving yearly stipends and distributing models and drawings.

Educational sloyd is of recent date in Denmark. In the autumn of 1885 a Danish Sloyd Union was formed, which assisted the establishment of a Teachers' Sloyd School in Copenhagen, and the introduction of this work into 10 private high schools. It is generally in the high schools that the sloyd has been carried on. In 1882 the Kjöbenhavn-Husflidsforening (Copenhagen Home Industrial Society) established a large sloyd school for the children of the Kommuneskolerne (public schools).

In Germany the Deutscher Verein für erziehlische Knaben-handarbeit (German Association for Educational Manual Work for Boys) has been very successful in its propaganda in behalf of this movement, especially so when we take into consideration the conservatism that has always existed among German teachers. The governments of Prussia, Saxony, and Alsace-Lorraine have given both moral and material support to the system. Sloyd schools have been organized in many cities, and the German Government, which yearly calls a congress of the friends of sloyd instruction, has founded a normal college in Leipzig.

In southern Austria-Hungary, and in Bohemia,

the movement has progressed very rapidly. The sloyd has been introduced as an elective subject in the elementary schools. In Hungary this work dates from 1870, when the Minister of Public Instruction issued an order that instruction be given in at least one of the following subjects to all the boys of the primary schools, viz., agriculture, gardening, silk cultivation, or sloyd. In 1881 manual training was made compulsory in 24 state seminaries for teachers, and in the Normal College of Buda-Pesth a three years' course was introduced.

In Russia, in the State Normal College of St. Petersburg and in several other teachers' seminaries of that city, since 1884 sloyd has been taught. For lack of means the work has progressed but slowly. In the Baltic provinces much has been done to further the Swedish system.

The local governments of several of the cantons of Switzerland have, during the past seven years, supported private efforts for establishing sloyd courses for teachers.

About four years ago a commission of 17 gentlemen was sent by the Italian Minister of Public Instruction to study the manual-training systems of Europe, and more especially the Swedish system of sloyd instruction. Each member of this body took a course at Nääs, and since then has personally directed a class for teachers at home.

The French law of March 28, 1882, made manual training compulsory in all normal as well as public elementary schools. At that time the École Normale Speciale pour l'Enseignement du Travail Manuel (Special Teachers' Seminary for Manual-training Instruction) was established. Though this instruction has been abolished, the study of the subject is carried on in about 100 schools of Paris.

The officers of the late Liberal Government of Belgium had begun to make arrangements to introduce the sloyd in normal and primary schools when, through the election of 1884, they were compelled to go out of office. The members of the present Clerical ministerial party expressed their views in 1887, at which time the Minister of Public Instruction said he had had the greatest sympathy with the movement, and the Government would soon take active steps in the matter. As a result courses for teachers were formed, all of which have been largely attended. Two societies have worked for its introduction in the public schools.

In England a very active propaganda in favor of the adoption of the Swedish sloyd has been going on. The most recent school laws are strongly in sympathy with the movement, and many school boards have made arrangements for the introduction of the system. A great many teachers have studied at Nääs, and several societies have been organized by those interested in the matter. The new school law of Scotland is even stronger in its sloyd clause than the English law.

American teachers have shown a deep interest in educational manual work, and various systems of manual training have been introduced in the school courses. In New York, Boston, San Francisco, and other cities the Swedish sloyd has been introduced in private institutions.



The Argentine Republic, Chili, and Uruguay have sent representatives to Nãas to study the sloyd, with a view to adopting it in their primary schools.

Holland, Spain, and Brazil have likewise taken steps in this direction.

**SOUTH CAROLINA**, a Southern State, one of the original thirteen, ratified the Constitution May 23, 1788; area, 3,750 square miles. The population, according to each decennial census, was 249,073 in 1790; 345,591 in 1800; 415,115 in 1810; 502,741 in 1820; 581,185 in 1830; 594,398 in 1840; 668,507 in 1850; 703,708 in 1860; 705,606 in 1870; 995,577 in 1880; and 1,151,149 in 1890. Capital, Columbia.

**Government.**—The following were the State officers during the year: Governor, J. Gary Evans; Lieutenant Governor, W. H. Timmerman; Secretary of State, D. H. Tompkins; Attorney-General, William A. Barber; Treasurer, W. T. C. Bates; Comptroller, James Norton; Superintendent of Education, W. D. Mayfield; Adjutant General, J. Gary Watts; Superintendent of Agriculture, T. H. P. Allison; Railroad Commissioners, W. D. Evans, J. C. Wilson, H. R. Thomas; Dispensary Commissioner, F. M. Mixson—all Reform Democrats; Chief Justice of the Supreme Court, Henry McIver; Associate Justices, Eugene B. Gary and Y. J. Pope, Democrats.

**Finances.**—The balance in the treasury Oct. 31, 1894, was \$203,256.24. The receipts during the year ending Oct. 31, 1895, were \$1,971,892.29. The payments amounted to \$1,902,952.52; and the balance remaining was \$272,196.01. The principal sources of receipt were: Taxes, \$845,708.54; dispensary, credited dispensary account, \$802,231.01; dispensary, appropriation of, December, 1892, refunded general account, \$50,000; phosphate royalty, \$93,308.71; privilege tax on fertilizers, \$30,135.93; loans effected under acts of 1893-'94, \$100,000.

The expenditures included: Education, \$225,018.99; charitable, penal, and sanitary expenses, \$130,511.60; interest on public debt and expenses, \$269,140.05; dispensary, \$750,323.58; printing, \$19,607.52; pensions, \$51,109.70; maintaining militia, 1893-'94 and 1894-'95, \$20,000; election expenses, \$18,549.71; Constitutional Convention appropriation, \$3,306.62.

The cash balance Dec. 31, 1895, was \$229,972.70. The new Constitution changes the close of the fiscal year from Oct. 31 to Dec. 31. The balance against the State Oct. 31, including consol bonds, balances of appropriations undrawn, etc., was \$7,044,916.58. The Constitution requires \$75,000 yearly of the receipts from phosphate payments to be set apart as a cumulative sinking fund.

The taxable property in the State amounts to \$169,449,251, and the State taxes assessed against the counties to \$762,315. The total of poll taxes is \$251,155.

**Education.**—During the year ending Oct. 31, 1895, the number of white pupils enrolled in the free public schools was 103,729, and of colored 119,292. The total enrollment was 3,745 less than in 1894, but the total for that year was 3,616 greater than in any previous year. According to the reports of the county school commissioners, the expenditures for the year were

\$563,743.66, of which \$470,085.67 was for salaries. The cost *per capita* ranged from \$10.11 in Charleston County to 85 cents in Horry; the average was \$1.77. The average length of session was four and three tenths months.

The Winthrop Normal and Industrial College for Women, at Rock Hill, was opened Oct. 15 with an enrollment of 304, which was soon increased to 310, the full capacity of the institution. About 100 applications for admission had to be refused. The expenses for the year of nine months at the college are \$93.50, not including tuition, which is \$40 to those that are able to pay it. The cost of the institution was \$200,000, of which Rock Hill gave \$60,000.

Clemson Agricultural College had a total enrollment of 372. The income was \$107,788.17, of which \$15,000 came from the Hatch fund and \$10,000 from the Morrill fund. The *per capita* support amounts to \$267.17. The privilege tax on fertilizers is devoted to this institution.

The South Carolina College had an enrollment of 180 for the year against 160 in 1894 and 68 in 1893. The college was opened to women this year, and 13 were in attendance. The estimate of expenses for the year was \$34,000. A summer school held at the college for four weeks had an average attendance of 265.

The Military Academy had upon its rolls 146 cadets, of whom 68 were beneficiaries. The cost *per capita* for support of the beneficiaries was \$293.89.

Clafin University, for colored students, had an enrollment of 570. A class of 20 was graduated. Clafin College and Clafin University have been united and operating as one institution for many years; but by the new Constitution it is made necessary to separate them. The new institution will be known as the Colored Normal Industrial Agricultural and Mechanical College.

**Charities.**—The name of the lunatic asylum has been changed to Hospital for the Insane. The total number of patients under treatment during the year was 1,157; daily average, 827. The cost *per capita* was \$116.76, or about 32 cents a day.

The estimated cost of the Deaf and Blind Asylum for 1896 was, for support, \$17,500; for buildings for colored children, \$8,000; and for electric-light plant and other expenses, \$6,494.

**The Penitentiary.**—The report for the fourteen months ending Dec. 31, 1895, shows that at the beginning of that period there were 1,062 prisoners in the Penitentiary and the convict camps; the whole number in prison during the time was 1,697, and at the end of the period there were 990 remaining. The decrease in the number of prisoners is due to the sentencing of short-term convicts to the county chain gang. The aggregate receipts for the fourteen months were \$147,060.60; estimated value of crops on hand, \$15,000; amount due from convict hire and other sources, \$3,242.54; making a total of \$165,305.14. The disbursements were \$144,921.88.

**Industries and Products.**—Charters were issued during the year to corporations with an aggregate capital stock of \$5,267,700, against \$2,910,700 in 1894. The increase in cotton

manufacture was very great. In 1894 5 companies for the manufacture of cotton were chartered, the capital stock amounting to \$465,000. In 1895 20 were chartered, with a total capital of \$2,765,000.

At the beginning of the year (Sept. 1, 1894) the phosphate-mining companies had rehabilitated their plants from the effects of the cyclone of August, 1893, and they have added saving devices, so as to reduce the cost of mining to a minimum. The number of tons of rock shipped for the year ending Aug. 31, 1895, was 174,400.

The royalty paid to the State amounted to \$87,657.20. The whole number of tons mined during the year was 201,400.

The inspector's report says: The outlook of the business is gloomy in the extreme. Prices have sunk to a figure never before reached. It is impossible to get in Europe now even as high as 6*d.* a unit. The companies are unable to net more than \$2 a ton. South Carolina no longer has a monopoly of this business, deposits having been discovered in Florida, Tennessee, France, Algiers, and Venezuela.

There was a large decrease during the year in the acreage devoted to the cotton crop, and at the same time there was an immense gain in the acreage devoted to the living crops.

There was a great increase in the tobacco acreage. The estimated yield of rice was 850,000 bushels.

The receipts of cotton at Charleston, up to July 5, were 427,447 bales, against 405,031 at the same date in 1894.

**Railroads.**—The roads that were in the hands of receivers have been reorganized. The entire mileage in the State is owned or controlled by the Southern Railway, the Seaboard Air Line, and the Atlantic Coast Line. The freight charges on fertilizers were deemed too heavy, and the Railroad Commissioners fixed a rate which they considered just; but the companies obtained an injunction. The South Carolina and Georgia Railroad has become a bonded line.

**The Dispensary.**—The report of the State Liquor Commission for the year is thus summarized:

The local dispensaries sold liquor to the value of \$1,076,963.95, on which the towns and counties netted a profit of \$106,131.28. The profits to the State itself were \$133,467.77 on sales to the local dispensaries amounting to \$903,055.63. The report claims an additional outstanding profit for the State for the period under review of \$25,571.85, making a total profit to the State for eleven months of \$159,039.62. The profits of the towns and counties on retail sales were almost exactly 10 per cent., while the State's profits on wholesale dealings were about 16 per cent. The total profits to the State since the dispensary system went into operation, July 1, 1893, to Dec. 31, 1895, are placed at \$243,816.57.

The "dispensary war" continued in one form and another through the year. The principal event in it was a decision by Judge Simonton, of the United States circuit court, in reference to that part of the law forbidding persons to import liquors from other States, even for their own use. He held these provisions to be a violation of the United States Constitution, in that they are a discrimination against interstate commerce and against all citizens of South Carolina

other than the dispensary agents. This decision would not destroy the law as a whole, but only that part of it which prevents the individual from carrying liquor into the State for his own use; it would set aside the authority on which the constabulary have searched private houses for contraband liquors, and therefore remove the most objectionable feature of the law.

There was also an injunction from Judge Goff forbidding the seizure of liquor shipped into the State. As the order was disregarded, the commissioner and two constables were summoned to show why they should not be attached for contempt. In June 3 constables were sent to jail in Charleston. On the other hand, "contempt cases" were brought before the courts by the State authorities; in one case a man was sentenced by a circuit judge to eight months' imprisonment for selling liquors contrary to the order of another judge; he was also condemned to pay a fine of \$200. The case came before the Chief Justice of the Supreme Court, who discharged him without touching the constitutionality of the law, on the ground principally that the contempt proceedings were unconstitutional.

**The Constitutional Convention.**—The great event of the year in the State was the holding of a convention to revise the Constitution, which opened Sept. 10 and ended Dec. 4. An election was called for making choice of delegates, to take place in August. The constitutionality of the registration act, passed by the Legislature of 1894, had been called in question, and was in the State Supreme Court, no decision having been rendered. In April an order was obtained from Judge Goff, of the United States circuit court, granting a temporary injunction against the supervisor of registration of Richland County, to prevent him from carrying out the provisions of the act, some of which were averred to be "burdensome and harassing to the electors, and unreasonable and unnecessary, and the same so limit, abridge, and qualify the privilege of registration that they result in a practical denial of the right to vote to those electors who, by the operation of the unconstitutional provision of the General Statutes of 1892 and Revised Statutes of 1893, are now unregistered"; and in violation of the State Constitution "in this, that they add to the qualifications of electors provided for in the said Constitution, a further qualification not therein provided, to wit, registration as required by the several sections" of the act of 1894; and it was further declared that they "undertake to add to the qualification of the electors of the State of South Carolina qualifications not prescribed by the Constitution of the United States." In brief, the understanding of the law was that it was framed for the purpose of depriving the negro of his vote. Judge Goff also issued an order to the Governor, the commissioner of elections, and others, enjoining them from any action looking to the holding of the election. The case was argued in May. Judge Goff's decision was, that the election must be held with an open ballot. There was an effort to persuade the Governor to call an extra session of the Legislature for the purpose of passing a new registration law, but he refused, and issued a proclamation, May 14, from which the following are extracts:



The restoration of white supremacy in 1876 placed in office and in leadership of the affairs of the State Wade Hampton as Governor and afterward as United States Senator; Charles H. Simonton, chairman of the Judiciary Committee and leader of the House of Representatives, later district and circuit judge of the United States Court; and John C. Sheppard, Speaker of the House of Representatives, Lieutenant Governor, and afterward Governor. In 1882, under the leadership of these men, the Legislature passed the laws known as "the election and registration acts," designed to preserve white supremacy and a white man's government. These laws worked admirably, and up to this proceeding no complaint has ever been heard of their injustice, oppression, or criminality. The citizen who dared raise his voice against them was denounced as an enemy of his State. Those who were too young to hold office and take part in such affairs were taught to respect these men as patriots and their handiwork as the palladium of our liberties. This *régime*, becoming arrogant and distasteful to a majority of our people, and repugnant in their policy to our institutions, was overthrown, and the people in 1890, by the election of Benjamin R. Tillman, as Governor, declared that it was not their intention to create an oligarchy when in 1876 they threw off the yoke of the negro and the carpetbagger. Two appeals have been made to reverse this verdict of the sovereign people, but it has been sustained each time with vehement determination. South Carolina is enjoying an era of industrial improvement; factories are being built in greater number than elsewhere in the South; the credit of the State ranks higher than ever in its history, our bonds not being purchasable at a premium of less than 10 per cent. The march of progress is about to be stopped; the black pall of negro domination hovers over us. We must meet the issue like South Carolinians. There are only two flags—the white and the black. Under which will you enlist? It is fortunate that the issue comes at this time, when a Constitution is to be made, guaranteeing white supremacy once and forever. The Constitutional Convention must be controlled by white men, not white men with black hearts nor negroes. Constitution or no Constitution, law or no law, court or no court, the intelligent white men of South Carolina intend to govern her.

An appeal was taken to the United States Court of Appeals at Richmond, which resulted in the reversal of Judge Goff's decision, June 11. In the State Supreme Court the case against the law was dismissed, on the ground that the court had no jurisdiction, and that the complainant had adequate remedy at law; but the Chief Justice dissented from the opinion of the majority of the court, holding that it had jurisdiction; and, going into the merits of the case, he gave as his opinion that "the many provisions and requirements set forth in the registration laws as prerequisites to the right of the ballot are burdensome and unreasonable, and could not have been intended to merely regulate the right of suffrage, but, upon the contrary, the effect of the provisions of the law are to abridge and impede the citizen in registering and voting."

There were 160 delegates to the convention, of whom only 40, as was reported, were out-and-out opponents of the Reform, or Tilden Democracy, in control of the State government. Six were negroes.

Gov. Evans was made president of the convention.

The most important work of the convention, and that which was waited for with greatest interest, was the section prescribing the qualifications for suffrage. It was understood that

these would be such as to disfranchise the greater part of the negroes, and that the Mississippi plan, or a modification of it, would be adopted. Senator Tillman was chairman of the Committee on Rights of Suffrage. The following statement of the action of the convention on this and other important subjects is taken from the Governor's message to the Legislature of 1896:

The requirements of the Constitution are "residence in the State two years, in the county one year, and in the polling precinct in which the elector offers to vote four months, and the payment six months before any election of any poll tax then due and payable. Ministers of the Gospel and school-teachers are entitled to vote after six months' residence in the State.

Registration which shall provide for the enrollment of every elector once in ten years, and also an enrollment during each and every year of every elector not previously registered.

All male persons of voting age applying for registration who can read any section of the Constitution submitted to them by the registration officers, or understand and explain it when read to them.

These are the requirements up to January, 1898. After that time a person applying for registration, if otherwise qualified, must be able to both read and write any section of the Constitution submitted to him by the registration officer, or show that he owns and has paid all taxes collectable during the previous year on property in the State assessed at \$300 or more. The payment of all taxes, including poll tax, is a prerequisite to voting.

It is incumbent upon you to prescribe the manner of holding elections and of ascertaining the results of the same. There is no necessity for any change at this time in our law in this particular. Our people are accustomed to the eight-box law, and there can be no just or valid objection to the manner of obtaining the results of elections. We have been served with notice that this article of our Constitution would be tested before the United States Supreme Court, and while I have no fears as to the result and am fully convinced of its constitutionality, still should another Goff come along, whose "inclinations made it his duty" to set aside our registration the day before election, in such an emergency our eight-box law would be some protection.

The sessions of your honorable body have been changed to the second Tuesday in January, with a time limit of forty days. This limitation does not apply to the first 4 sessions under the new Constitution.

You are expressly forbidden to enact local or special laws upon the following subjects:

1. To change the names of persons or places.
2. To lay out, open, or work roads or highways.
3. To incorporate cities, towns, or villages or change, amend, or extend the charters thereof.
4. To incorporate educational, religious, charitable, social, manufacturing, or banking institutions not under the control of the State.
5. To incorporate school districts.
6. To authorize the adoption or legitimization of children.
7. To provide for the protection of game.
8. To provide for the age at which citizens shall be subject to road or public duty.
9. To fix the amount of compensation to be paid to any county officer, etc.

It is your duty to enact laws limiting the number of acres of land which any alien or any corporation controlled by aliens may own within this State.

You are required to provide by legislation for the punishment of any officer, State, county, or municipal, and for his removal from office, from whom a person in his lawful custody has been seized or taken, through his negligence, permission, or connivance, by a mob or other unlawful assemblage of per-

sons, and who has suffered bodily violence or death, and also to provide for the maintenance of a civil action for damages against the county in cases of lynching when death ensues, and further for an action by the county for the damages against the parties engaged in the lynching. There have occurred during the last year 4 cases of lynching within the State, and not one has been for the crime generally regarded as justifying such action.

It is your duty to provide a general system for the assessment of property for taxation, and this assessment shall be taken by all municipalities and other subdivisions of the State as their basis for taxation. You are authorized to impose a graduated tax upon incomes and a license on occupations and business.

The people are to be congratulated upon the liberal manner in which the Constitution has provided for the common schools of the State. The common schools are required to be separate and distinct for white and colored children, and pupils of either race are prohibited from attending the schools so set apart for the other race.

All the net income to be derived by the State from the sale of licenses for the sale of intoxicating liquors, all gifts to the State where the purpose is not designated, all escheated property, the net assets or funds of all estates or copartnerships in the hands of the courts of the State where they have been no claimants for the same within the last seventy years, and the direct-tax fund are set apart as a permanent school fund.

It is made the duty of your honorable body at your first session after the adoption of the Constitution to provide such proper and liberal legislation as will secure an annual pension to every indigent or disabled Confederate soldier and sailor of this State and of the late Confederate States who are citizens of this State, and also to the indigent widows of Confederate soldiers and sailors.

By a vote of almost 2 to 1, a provision was introduced that divorces from the bonds of matrimony should not be allowed in the State. After an exhaustive debate, a section was passed providing that "the marriage of a white person with a negro or mulatto or person who shall have any negro blood shall be unlawful and void, and the parties to such marriage, upon conviction, shall be punished as the General Assembly may prescribe."

There was a lively contest over the name to be given to a new county, "Butler" and "Saluda" being the names proposed. The petition of the people of the new county gave the name "Saluda"; but it was sought by some members of the convention to honor the family of which ex-Senator Butler is now the representative by giving its name to the county. The debate lasted for three hours, with bitter personalities on both sides, after which the county was named Saluda. The Constitution was ratified by the convention itself, and will not be submitted to a vote of the people.

**SOUTH DAKOTA**, a Western State, admitted to the Union Nov. 3, 1889; area, 77,650 square miles; population, according to the census of 1890, 328,808. Capital, Pierre.

**Government.**—The following were the State officers during the year: Governor, Charles H. Sheldon, Republican; Lieutenant Governor, Charles N. Herried; Secretary of State, Thomas Thorson; Treasurer, Kirk G. Phillips; Auditor, J. E. Hipple; Attorney-General, Coe I. Crawford; Adjutant General, George A. Silsby; Superintendent of Public Instruction, Frank Crane; Commissioner of Labor Statistics, F.

A. Wheeler; Railroad Commissioners, G. A. Johnston, E. F. Conklin, Jay Manson; Chief Justice of the Supreme Court, Dighton Corson; Associate Justices, Alphonso G. Kellam, Howard G. Fuller; Clerk of the Supreme Court, Ivan W. Goodner.

At the beginning of the term of office of the present State Treasurer, Jan. 9, 1895, the books showed cash on hand amounting to \$367,020.59, which amount the former Treasurer, W. W. Taylor, failed to turn over, and it appeared that he had absconded with the State's moneys. After several months' absence he voluntarily returned, and upon arraignment in the circuit court, under charge of embezzlement of public funds, pleaded guilty, and was sentenced to five years' imprisonment. On appeal to the Supreme Court, the term was reduced to two years, on the ground that the crime committed was misuse or appropriation of public funds. Before Taylor was committed to the Penitentiary in October he had made over to the State \$127,552.24 in cash and property valued at \$70,000.

One consequence of this defalcation was the appointment, by joint resolution of the Legislature, of a committee to investigate the action of Thomas H. Ruth, ex-Commissioner of School and Public Lands. The report of the committee severely criticised the ex-Commissioner of Public Lands for inattention to duty, for neglect of the statutory provisions, and for neglect of State interests in favor of his own. It charged that through his neglect the State lost a large sum of interest in 1893, and that, as the result of his failure to apportion the money as required by law in 1894, Taylor robbed the school fund of \$20,000. Accordingly, suit was brought for \$27,000.

**Finances.**—By action of the Legislature of 1895 provision was made for annual instead of biennial reports from the Treasurer and the Auditor. From the report of the former, covering the period between June 30, 1894, and July 1, 1895, the following statements are gathered: On taking office the Treasurer found that the State was without funds to meet any of its obligations, and that funding warrants to the amount of \$220,000 were due Jan. 1, 1895. An extension of their time of payment for one year was secured, and, from revenues collected, \$100,000 of the warrants were paid prior to July 1, and provision will be made for the redemption of the \$120,000. To meet the immediate requirements of the State for funds, the Legislature authorized the issuing of funding or revenue warrants based upon revenues assessed but not yet collected. Of these, \$304,600 have been issued to defray the current expenses, \$204,600 of which will become due April 1, 1896, and \$100,000 April 1, 1897. State bonds to the amount of \$98,000, bearing interest at 4½ per cent. per annum, were also issued and sold and the proceeds applied to make good the deficiency in the school fund, occasioned by W. W. Taylor's defalcation.

The Treasurer makes his report in two parts to cover the period from July 1, 1894, to Jan. 9, 1895, when W. W. Taylor was Treasurer, and the period from Jan. 9, 1895, to June 30, 1895. At the beginning of the first period there were



in the treasury \$433,026.58; the receipts were \$288,725.82; the disbursements were \$354,731.81; the unexpended balance, Jan. 8, 1895, was \$367,020.59, which balance was the amount of Taylor's defalcation. The receipts during the second period were \$822,712.75; disbursements, \$502,222.94; balance July 1, 1895, \$320,489.81. Of this amount, \$22,746.39 was paid over by W. W. Taylor.

The indebtedness of the State July 1, 1895, was as follows: Coupon bonds, \$870,700; registered bonds, \$267,500; funding warrants, \$424,600; total indebtedness, \$1,562,800.

The valuation of railroads in 1895 was \$9,193,247; of telegraphs, \$127,116; of telephones, \$34,750; express companies, \$51,500; sleeping-car companies, \$12,000, making a total of \$9,418,613. The valuations of lands was \$74,918,478; of town lots, \$16,863,655; of personal property, \$20,550,405. The total valuation in 1895 was \$121,751,151.

The amount of taxes paid by insurance companies direct to the State was \$5,456.86, making the total receipts from insurance companies \$24,657.92, against \$27,583.60 for 1894. Reports filed in 1895 give the ratio of losses paid to premiums received as 53.2 per cent.

The appropriations from the general fund made during the year amounted to \$746,160.77; warrants issued, \$718,923.86; unexpended balance July 1, 1895, \$27,236.91. Appropriations from the interest and income fund were \$308,983; warrants issued, \$308,273.47; unexpended balance, \$709.53.

**Education.**—The regents have eight institutions under their charge: The State University, at Vermillion; Agricultural College, at Brookings; United States experiment station, at Brookings; State School of Mines, at Rapid City; State normal schools, at Spearfish, Madison, and Springfield; and the State Geological Survey. The State appropriates for their support about \$60,000 annually, and the United States \$36,000.

The fiscal year of all now ends June 30. The enrollment at the university Dec. 1 was 224; at the Agricultural College, 250; the Spearfish and Madison normal schools had about 170 students each, and were crowded. The Springfield normal has no other existence than that involved in a "location" by an old-time Legislature, an assignment of 40,000 acres of public lands by the last Legislature, and a board of 5 trustees.

**Railroads.**—The Railroad Commissioner in December furnished the following figures: The number of railroad companies doing business in the State is 14, with a total mileage of 2,860; the number of men employed in the State is 5,046; total compensation for the year, \$2,950,507; people killed during the year, 8; people injured, 49; number of elevators and warehouses doing business, 657. About 20 new elevators and warehouses have been erected in the eastern part of the State.

**Yankton Reservation.**—The lands ceded by the Yankton Sioux Indians, being 168,000 acres in a rich farming country in the southern part of the State, were in April opened to settlement. An attempt was made by the State to take possession of a large part of these lands for the normal schools and other institutions, under

a general congressional act of March 2, 1895, which in terms permits States to select school lands from the surplus of surrendered Indian reservations. In the case of the Yankton reservation there was a special enactment by Congress, dated Aug. 15, 1894, which provided for the disposal of the surplus only under homestead and town-site laws. In an argument before the Secretary of the Interior it was concluded that the general law of 1895 did not set aside the special treaty-confirming law of 1894, and a decision to that effect was rendered.

**Legislative Session.**—The Legislature met on Jan. 8, and sat until March 8. The revenue laws were modified and the railroad laws were amended to strengthen the hands of the Railway Commissioners, and there was some valuable irrigation and artesian-well legislation; but no radical changes in general laws were made. A law was enacted providing for checking the accounts of the State Treasurer by the Governor each month. Other laws provided for the organization of county mutual insurance companies. A measure was passed providing that a married woman who purchases necessities for her family on her own account, or promises to pay for them in consideration of the sale and delivery thereof to her and her husband or either of them, shall, in case of nonpayment, be liable in action to recover payment therefor to the same extent that her husband would be liable under a similar purchase or promise. Among other laws enacted were these:

Authorizing the floating of the national flag over school buildings.

Providing that trees and shrubbery shall not be considered real property.

Providing that no insurance shall be placed except through a local agency subject to all the taxes and other provisions.

Locating the blind asylum at Gary.

Authorizing county commissioners and township supervisors to furnish seed grain.

Providing for the incorporation of associations to provide homes for destitute children.

Prohibiting racing and other public sports on May 30.

Providing for liens on money in the hands of public corporations for labor on public works.

The appropriations for 1895, less bond interest and salaries of officials, were \$290,687.50; for 1896, \$289,574.

Early in the session R. F. Pettigrew, Republican, was re-elected to the United States Senate.

**SPAIN**, a constitutional monarchy in southwestern Europe. The legislative power is vested in the Cortes, consisting of a Senate of 180 members, of whom 123 are appointed for life and 57 are hereditary or official members, and a Congress of 432 members, elected for five years by indirect suffrage. The present King is Alfonso XIII, born May 17, 1886, son of Alfonso XII, deceased, and of Maria Christina, an Austrian archduchess, who acts as Regent during the minority of her son.

The ministry, first constituted in December, 1892, was composed in the beginning of 1895 as follows: President of the Council, Mateo P. Sagasta; Minister of Foreign Affairs, S. Moret; Minister of Justice, R. Capdepon; Minister of War, Gen. J. Lopez Dominguez; Minister of Marine, Admiral M. Pasquin; Minister of Fi-

nance, Amos Salvador; Minister of the Interior, A. Aguilera; Minister of Agriculture, Commerce, and Public Works, M. Groizard; Minister of the Colonies, Señor Becerra. M. Groizard was afterward succeeded by J. L. Puigcerver, and when Señor Moret resigned he took the portfolio of Foreign Affairs. Señor Maura became Minister of Justice when Señor Salvador retired and Señor Capdepon became Minister of Finance. Señor Becerra retired from the Ministry of the Colonies, being succeeded by Señor Abarzuza.

Spain has an area of 197,670 square miles, with a population at the last census (1887) of 17,565,632. The net emigration in 1892 was 8,258, mostly directed to Brazil, the Argentine Republic, and Uruguay.

**Finances.**—The budget for the financial year 1894-'95 estimates the revenue at 744,726,353 pesetas, or francs, of which 291,423,473 pesetas are the product of direct taxes on land, mines, Government salaries, registration, etc.; 281,763,000 pesetas are raised by customs and internal-revenue taxes; 129,940,000 pesetas are derived from stamps and Government monopolies; 22,124,880 pesetas are the receipts from national property; and 19,470,000 pesetas come from the public treasury. The expenses are estimated as follow: Civil list, 9,500,000 pesetas; Legislature, 1,526,585; public debt, 309,219,669; indemnities and pensions, 55,067,477; judiciary, 1,817,231; presidency of the Council of Ministers, 891,050; Ministry of Foreign Affairs, 4,709,142; Ministry of Grace and Justice, 52,690,584; Ministry of War, 138,872,216; Ministry of Marine, 22,502,951; Ministry of Public Works and Public Instruction, 76,979,883; Ministry of the Interior, 26,924,554; Ministry of Finance, 14,836,368; expenses of collection, 27,377,183; Fernando Po, 655,000 pesetas; total revenue, 738,619,893 pesetas.

For 1895-'96 the revenue was estimated in the budget at 758,500,000 pesetas and expenditure at 765,500,000 pesetas.

The public debt on Jan. 1, 1893, amounted to 5,962,043,090 pesetas, made up as follows: Perpetual external debt, paying 4 per cent. interest, 1,971,157,000 pesetas; perpetual internal debt, paying 4 per cent., 2,274,660,450 pesetas; amortizable debt, paying 4 per cent., 1,714,075,000 pesetas; due on public works, 562,000 pesetas; due on public roads, 252,000 pesetas; arrears due to employees, 1,342,640 pesetas. There are, besides, a debt of 3,000,000 pesetas owed to the United States debts in favor of corporations and the clergy amounting to 725,836,000 pesetas, a floating debt of 195,516,000 pesetas, and the Cuban debt.

The Government raised money in Spain for the Cuban expedition, depositing Cuban bonds as security, and in October made an arrangement with Paris and Duteh bankers for a loan on the same security of 75,000,000 francs.

**Communications.**—The post office in 1893 carried 81,125,000 internal, 18,779,000 foreign, and 127,000 transit letters, 666,000 internal and 400,000 foreign postal cards, 47,098,000 internal and 19,238,000 foreign newspapers, circulars, and packets, and money letters remitting 170,690,000 francs. The post-office receipts were 23,882,301 francs and expenses 11,053,356 francs.

**Commerce.**—The value of the commerce in 1893 with the different foreign countries is given, in pesetas, in the following table:

COUNTRIES.	Imports.	Exports.
France.....	204,300,000	205,700,000
Great Britain.....	161,900,000	181,700,000
America.....	164,500,000	194,900,000
Portugal.....	20,000,000	30,200,000
Belgium.....	28,000,000	14,500,000
Germany.....	20,300,000	14,500,000
Russia.....	32,800,000	.....
Sweden and Norway.....	25,400,000	2,400,000
Philippine Islands.....	20,500,000	22,700,000
Northern Africa.....	23,100,000	5,600,000
Italy.....	16,500,000	8,100,000
Netherlands.....	5,800,000	12,300,000
Turkey.....	13,200,000	.....
Other countries.....	34,100,000	17,100,000
Total commerce.....	770,700,000	709,700,000

Some of the imports and their values were: Breadstuffs, 79,547,000; cotton, 76,075,000; coal, 49,420,000; timber, 36,740,000; tobacco, 34,532,000; codfish, 24,864,000; machinery, 20,377,000; chemicals, 18,597,000; iron, 17,782,000; ships, 16,927,000; hides and skins, 15,912,000; coffee, 14,668,000; cacao, 13,969,000; wool, 13,946,000; sugar, 12,979,000; linen yarn, 11,638,000; silks, 10,593,000; woolens, 10,287,000; raw silk, 8,931,000; petroleum, 8,307,000 pesetas. The values of the principal exports were: Wine, 94,873,000; lead, 54,942,000; cottons, 48,780,000; copper, 45,560,000; iron, 43,066,000; olive oil, 27,845,000; boots and shoes, 26,310,000; cork, 23,161,000; raisins, 16,394,000; oranges, 14,627,000; wool, 12,298,000; animals, 10,616,000; almonds, 10,358,000; quicksilver, 8,724,000; grapes, 8,082,000; skins, 8,015,000 pesetas.

**Navigation.**—During 1893 there were 6,148 Spanish steamers, of 5,304,174 tons; 6,786 foreign steamers, of 5,671,495 tons; 1,892 Spanish sailing vessels, of 171,095 tons; and 1,373 foreign sailing vessels, of 303,434 tons, entered at Spanish ports; in all 16,199 vessels engaged in foreign commerce, of the aggregate burden of 11,450,198 tons. The total number cleared was 16,089, and the total tonnage 11,414,057 tons.

The merchant navy on Jan. 1, 1893, comprised 1,233 sailing vessels, of 196,650 tons, and 474 steamers, of 652,139 tons.

**The Army.**—The law of 1885 made military service obligatory for twelve years from the age of nineteen, of which period three years of service with the active army are legally required. Exemption can be bought for 1,500 pesetas, and substitution is allowed between brothers. The annual contingent, which has been 49,000, was to be increased by the operation of the law of 1891 to 80,000 men. The peace effective for 1895 was returned as follows: General officers, 240; general staff, 232 officers; infantry, 6,088 officers and 45,679 men; cavalry, 1,360 officers and 13,139 men; artillery, 963 officers and 8,386 men; engineers, 425 officers and 3,399 men; telegraph brigade, 7 officers and 226 men; total, 9,315 officers and 70,829 men, with 14,655 horses and mules and 396 guns. The war strength was 176,035 men, with 14,250 horses and mules and 590 guns. The army bill of 1894 provided for the maintenance of 82,000 troops in Spain, 13,000 in Cuba, 11,000 in the Philippines, and 7,000 in Puerto Rico. The ministers on Oct. 17,



1895, calculated on a present effective of 85,000, of whom 24,000 were for the colonies.

**The Navy.**—The naval force consists of 1 first-class battle ship ("Pelayo"), of 9,800 tons, protected with 18 inches of armor and armed with 2 12½-inch, 2 11-inch, and 19 smaller guns; 6 belted cruisers ("Infanta Maria Teresa," "Vizcaya," "Almirante Oquendo," "Cataluña," "Cardenal Cisneros," and "Princesa de Asturias"), each having a displacement of 7,000 tons and a speed of about 20 knots and armed with 2 11-inch guns and 5 5½-inch guns; 1 armored cruiser ("Emperador Carlos"), of 9,235 tons displacement and a larger light armament than the above; 2 deck-protected cruisers ("Alfonso XIII" and "Lepanto"), 2 frigates, 41 small cruisers and gunboats, 5 torpedo gunboats, 1 torpedo catcher, 14 sloop gunboats, and 12 first-class, 20 second-class, and 1 third-class torpedo boats. The new cruisers, built in England and latterly in Spain, compare favorably with the same classes of vessels in any navy either in speed, cruising radius, or the completeness and distribution of the armament. The navy sustained a severe loss in March, 1895, when one of the new deck-protected cruisers, the "Reina Regente," foundered near the entrance of the Strait of Gibraltar with 400 men on board. She was a sister ship to the "Alfonso XIII," having a displacement of 4,800 tons, a primary armament of 4 7·8-inch guns, with 15 smaller guns and 5 torpedo tubes, capable of steaming 20·6 knots an hour. A smaller cruiser, the "Cristobal Colon," was shipwrecked in October, and a sloop gunboat, the "Sanchez Barcaiztegui," was also lost in Cuban waters. The Government has acquired 19 small gunboats for the purpose of patrolling the coasts of Cuba.

**Politics and Legislation.**—A political crisis was brought on by a riotous attack made by military officers on newspaper offices in the middle of March. The "Resumen," a Republican sheet, in an article on the Cuban insurrection, charged the junior officers of the army, who were always eager to go to Cuba when there was no danger, with seeking to escape from being drafted to Cuba to fight the insurgents. Resenting this imputation of cowardice, a party of 35 young officers wrecked the office of the newspaper on March 14. On the following evening 60 officers, with a crowd of sympathizers, sacked the office of the "Globo," which had protested against those lawless doings, and wounded an editor and two assistants. Later they attacked the office of the "Heraldo," but could not force an entrance. The officers, whose number had increased to 400, then attempted to renew their attack upon the staff of the "Resumen," but desisted when the captain general begged them to disperse. On the following day the disturbance was discussed by the Cabinet and the Congress. The newspaper editors of Madrid met and resolved to notify the Government that they would suspend the publication of all the newspapers unless they received guarantees of the safety of their lives and property. Gen. Lopez Dominguez exonerated the riotous officers, and demanded that the offending newspaper editors should be tried by court-martial. Premier Sagasta and the other ministers would not assent because, while press offenses against

the army could formerly be brought before military tribunals, more recent laws, which had been declared valid by the highest court, provided that all press offenses except treason fall within the jurisdiction of the ordinary tribunals, and must be tried before a jury. A deputation of officers, headed by Marshal Martinez Campos, demanded of Premier Sagasta that he should suppress the "Resumen," and proposed to the Cortes severely repressive press laws. He had promised the newspaper editors that he would protect their liberty, and when the Minister of War and the officers of the army persisted in their demands he and his colleagues resigned on March 17. Martinez Campos, who was appointed for the emergency Captain General of Madrid in the place of Gen. Bermudez Reina, issued orders forbidding the officers to make any demonstration. He was invited to form a ministry, but declined to undertake the task unless all other political combinations failed. He announced that the military code would be applied to libels upon the officers' corps, and told a deputation of newspaper men that they would undoubtedly be shot if they continued to insult the army. The editors of the "Resumen," the "Publicidad," the "Justicia," the "Ideal," and several provincial papers were examined before military tribunals. Other journalists fled from the country to escape arrest. Republican deputies assumed the editorship of their organs in Barcelona and other places. Señor Sagasta could not be induced to retain office except on the condition of maintaining the existing press laws, his supporters having declared that they would firmly resist the demands of the military.

The Queen Regent then called upon the leader of the Conservatives, who were in a minority in the Congress and who had retired from office in 1892 as the result of a bitter quarrel among themselves relating to charges of municipal corruption made against Señor Bosch, then Alcalde of Madrid. Señor Canovas organized a Cabinet on March 23, composed as follows: President of the Council, Canovas del Castillo; Minister of Foreign Affairs, Duke of Tetuan; Minister of Justice, Romero Robledo; Minister of War, Gen. Azcarraga; Minister of Marine, Admiral Beranger; Minister of the Interior, F. Cos Gayon; Minister of Finance, Navarro Reverter; Minister of the Colonies, Señor Castellano; Minister of Public Works, Señor Bosch.

The new Government sent Marshal Campos to Cuba to suppress the insurrection, obtained fresh credits for the campaign, and carried a bill raising the peace effective of the army from 71,000 to 82,000 men. The municipal elections in May were carried, as usual, by the party in power, although the followers of Señor Silvela, who had protested in 1892 against the action of Romero Robledo in shielding alleged corruptionists, now became open opponents of the Government. They proposed a vote of censure on May 21 for the illegal interference of the officials in the elections, but Señor Sagasta rallied the Liberal majority to the support of the Government, defeating the motion by 169 votes against 37 votes of the Silvelistas and Republicans. On June 3 the Chamber passed a vote of censure on the Government for not keeping promises made in the budget proposals by a majority of 78 votes. The

Ministerialists did not vote, and the Cabinet would not resign, having accepted office on the promise of Señor Sagasta that the Liberals would support them in passing the budget. Gen. Primo Rivera, the new Captain General of Madrid, was shot on June 3 by Capt. Primitivo Clavijo, an infantry officer who had a grudge against him. A proposal to abolish the export duty on wheat was defeated in the Chamber on June 24.

On Sept. 5 Señor Castellano, Minister of the Colonies, offered his resignation because Romero Robledo, who exercised an undue influence in domestic affairs, attempted to impose his will also in colonial affairs and inaugurate a policy of extermination in Cuba.

**The Colonies.**—The colonial possessions of Spain are Cuba and Puerto Rico in the West Indies, with an area of 45,205 square miles and 2,438,395 inhabitants (see CUBA); the Philippine Islands and their dependencies in the Sulu Archipelago, including the Caroline Islands, Palaos, and the Marianne Islands, having a total area of 116,256 square miles and 7,121,172 inhabitants; and the island of Fernando Po, with its dependencies of Annoboni and Corisco, Elobey, and San Juan in Africa, having a total area of 783 square miles and 36,000 inhabitants. Spain claims a protectorate over Río de Oro and the Adrar territory in northern Africa, which have an extent of 243,000 square miles and 100,000 people.

The budget of the Philippines for 1895 shows a revenue of £2,715,980 sterling, derived from direct and indirect taxation, a lottery, railroads, etc., and an expenditure of £2,650,026. The imports in 1893 were valued at \$24,000,000 and exports at \$30,500,000. The regular force maintained in Cuba is 19,571 men, which was increased during 1895 by an expeditionary force and the enlistment of guerrillas to 90,000 men. In Puerto Rico 187 officers and 3,200 men form the garrison; in the Philippines, 573 officers and 9,300 men. Besides the insurrection in Cuba the Spanish Government had to deal in 1895 with disturbances in the Philippine Islands. In an encounter with Mohammedan Malays in Mindanao on March 10 the Spanish killed 108, including the rebellious sultan, and lost 17 killed and 193 wounded. In July a Spanish force was ambushed in the northern part of Luzon by the natives who suddenly rose in revolt. They were subdued later by a column sent from Manila under Gen. Ría, who captured their fortified town, killing 116 and losing 17 killed and the same number wounded. In September there was fighting on the small island of Tatau between the crew of a Spanish gunboat and some native soldiers, who were overcome and taken to Manila, where they were tried by court-martial and shot. The Spanish Government in September refused the request of the United States minister that the American missionaries be permitted to return to the Caroline Islands and resume their labors.

**SWEDEN AND NORWAY**, two kingdoms in northern Europe, united in accordance with the treaty of Kiel, made Jan. 14, 1814, in the person of the sovereign. The throne in both monarchies descends in the order of primogeniture to the heirs of the house of Bernadotte. The King can declare war and conclude peace. Affairs common to the two monarchies are referred to a mixed Council of State. The reign-

ing King is Oscar II, born Jan. 21, 1829, who succeeded Carl XV, his brother, Sept. 18, 1872.

**Sweden.**—The legislative power is vested in the Riksdag, consisting of two houses. The First Chamber has 150 members, elected by the provincial and municipal bodies for nine years. The Second Chamber consists of 230 members, of whom 80 are elected in the towns by direct suffrage and 150 in the rural districts, part by direct and part by indirect suffrage. To have a vote a Swede must own land worth 1,000 kronor or farm land of the taxed value of 6,000 kronor, or pay taxes on an income of 800 kronor (1 krona = 27½ cents).

The ministry in the beginning of 1895 was composed as follows: Minister of State, Erik Gustaf Boström; Minister of Foreign Affairs, Count Carl Lewenhaupt; Minister of Justice, August Östergren; Minister of the Interior, Victor Lennart Groll; Minister of Finance, Baron Fredrik von Essen; Minister of Education and Ecclesiastical Affairs, Gustaf Fredrik Gilljam; Minister of War, Baron A. E. Rappe; Minister of Marine, Jarl C. E. Christerson; Councilors of State, Baron Albert Lars Evert Akerhielm and Sven Herman Wikblad.

**Finances.**—The revenue is estimated in the budget for 1896 at 100,534,000 kronor, of which 19,070,000 kronor are classed as ordinary receipts, 674,000 kronor are surplus receipts of preceding years, 2,340,000 kronor are profits of the state bank for 1894, and 78,450,000 kronor are what are called extraordinary receipts. Of the ordinary receipts, 2,155,000 kronor are land taxes, 1,400,000 tonnage dues, 2,400,000 rent for domains, 665,000 poll tax, 7,200,000 net receipts of railroads, 1,335,000 receipts of telegraphs, 2,900,000 produce of forests, and 1,015,000 miscellaneous. Of the extraordinary receipts, 36,000,000 kronor come from customs, 8,500,000 from posts, 5,300,000 from stamps, 14,500,000 from the tax on spirits, 7,000,000 from the duty on beet sugar, 6,350,000 from the income tax, and 800,000 from various sources. The total expenditures are made to balance the receipts. Of 77,462,524 kronor of ordinary expenditure, 1,320,000 kronor are for the royal household, 3,812,550 for justice, 606,750 for foreign relations, 25,552,870 for the army, 6,996,300 for the navy, 5,596,406 for the interior, 13,026,508 for education and worship, 3,116,040 for pensions, and 17,435,100 for financial administration. Of this last sum, 2,593,000 kronor are required for collecting the customs duties, 450,000 for the control of the excise, 8,155,000 for the post office, 1,335,000 for telegraphs, 1,147,000 for forests, and 3,755,100 for other expenses. The extraordinary expenditures are 11,464,076 kronor, of which 4,414,700 kronor are for the army and navy and 7,049,286 for other purposes; the expenses of the debt, 10,207,400 kronor; reserve for the insurance of workingmen against disability, 1,400,000 kronor.

The public debt, contracted almost exclusively for the construction of railroads, amounted in 1895 to 293,151,387 kronor, paying from 3 to 4 per cent. interest. In January, 1895, the Government negotiated with Swedish, French, German, and English bankers for the conversion of the 4-per-cent. bonds, amounting to 29,000,000 kronor, into a new loan paying 3½ per cent.



**Commerce.**—The total value of the imports in 1893, inclusive of specie, was 332,689,000 kronor, and of exports 328,272,000 kronor. The principal imports and their values were: Rye and wheat, 28,287,000; coffee, 27,012,000; coal, 25,645,000; woollens, 20,003,000; iron goods, 12,047,000; cottons, 11,281,000; raw cotton, 9,616,000; sugar, 9,552,000; hides and skins, 8,852,000; fish, 7,948,000; machinery, 7,134,000; tobacco, 7,075,000; petroleum, 6,783,000; woollen yarn, 5,765,000; paper, 4,448,000; wood manufactures, 4,338,000; vegetable oils, 4,188,000; wool, 4,065,000; pork, 3,478,000; iron, 3,337,000 kronor. The principal exports were: Timber, 113,431,000; butter, 40,159,000; iron, 31,918,000; paper, 25,444,000; oats, 21,176,000; wood pulp, 10,920,000; fish, 9,887,000; matches, 7,858,000; cotton goods, 4,759,000; glass, 3,723,000; machinery, 3,603,000; animals, 3,359,000 kronor.

The commerce with the different foreign countries in 1893 is shown in the following table, which gives the values in kronor:

COUNTRIES.	Imports.	Exports.
Norway.....	31,439,000	16,111,000
Russia and Finland.....	17,003,000	10,243,000
Denmark.....	39,905,000	36,510,000
Germany.....	112,897,000	44,276,000
Netherlands.....	7,002,000	17,045,000
Belgium.....	11,399,000	11,869,000
Great Britain.....	86,325,000	150,866,000
France.....	6,247,000	29,309,000
Portugal.....	1,533,000	1,233,000
Spain.....	542,000	2,651,000
Italy.....	808,000	951,000
Africa.....	.....	5,296,000
United States.....	10,850,000	658,000
West Indies.....	537,000	.....
Australia.....	.....	479,000
Asia.....	804,000	.....
Other countries.....	5,398,000	775,000
Total.....	332,689,000	328,272,000

**Navigation.**—There were 29,169 vessels, of 5,836,000 tons, entered at Swedish ports during 1893, of which 10,735, of 2,580,000 tons, were with cargoes; the number cleared was 28,044, of 5,870,000 tons, of which 20,744, of 4,585,000 tons, were with cargoes. The number entered included 12,331 steamers, of 4,412,000 tons; of those cleared, 12,420, of 4,435 tons, were steamers. Of the total number entered, 14,520, of 1,957,000 tons, sailed under the Swedish flag, 2,139, of 586,000 tons, under the flag of Norway, and 12,510, of 3,293,000 tons, under foreign flags.

The merchant navy in 1894 consisted of 2,844 sailing vessels, of 369,359 tons, 1,229 steamers, of 177,156 tons.

**Communications.**—There were 5,734 miles of railroad in operation at the end of 1894, of which 1,899 miles belonged to the Government and 3,835 miles to companies.

The number of paid internal telegrams was 933,908; of foreign dispatches, 703,061; in transit, 226,525; official, 90,213; receipts, 1,419,709 francs; expenses, 1,332,842 francs.

The postal traffic in 1893 was 47,621,000 internal and 12,726,000 international letters, 5,555,000 internal and 829,000 international post cards, 62,690,000 internal and 6,127 international newspapers and circulars, and 2,268,000 internal money letters, of the declared value of 489,136,000 francs, and 289,000 international, of the value of 41,490,-

000 francs. The receipts were 9,945,605 kronor, and expenses 7,450,514 kronor.

**The Army and Navy.**—The strength of the active army in 1895 was as follows: Staff and general officers, 48; 56 battalions of infantry, comprising 27,455 men, including 1,232 officers; 50 squadrons of cavalry, numbering 5,282 men, including 232 officers; 3,567 field artillery, including 265 officers; 535 fortress artillery, including 33 officers; 9 companies of engineers, numbering 990 men, including 77 officers; 8 companies of train, numbering 772 men, including 66 officers; and 153 administrative employees; total, 38,802 officers and men, with 6,852 horses. There were 132 officers on furlough and 385 in the reserve. The *bevüring* or national army numbers about 233,000 men, and the *landstorm* has 180,000 in its 8 classes.

The navy consists of 3 small armor-clad turret ships, 4 ironclad monitors, 9 armored gunboats, 3 corvettes, 14 gunboats, 1 torpedo cruiser, 6 first-class, 9 second-class, and 5 third-class torpedo boats, and 1 school ship. The *personnel* is 268 officers and 2,883 sailors.

**Legislation.**—The Agrarian agitation gained such headway that the Government, fearing that when the Riksdag met it would impose prohibitive duties on grain, determined to forestall its action, taking advantage of a dormant article of the Constitution that empowers the Government to alter the grain duties in emergencies arising when the Riksdag is not sitting. On Jan. 5 a royal decree raised the import duty on rye and wheat from 1·25 krona to 3·15 kronor, on malt from 1·50 krona to 4 kronor, and on flour from 2·50 to 6·50 kronor, making the rates the same as in the German tariff. This measure, denounced by the Agrarians and the Free Traders alike, had no immediate economical effect, except to enhance the value of the stocks remaining in the hands of the millers; but as a political expedient it succeeded, for the Riksdag was brought in the end to approve the schedules without alteration. The session was opened on Jan. 17. The object of raising the grain duties was declared in the speech from the throne to be the prevention of importations for speculative purposes. The King intimated his willingness to compromise with the Norwegian Radicals by admitting that the union of 1814 was susceptible of improvement. The principal business of the session was to authorize a considerable increase in the navy, a counter-move to Norway's sudden and menacing determination to build a navy, and to carry further the scheme for the insurance of workmen against old age, sickness, and accident. Potatoes were placed on the free list. On May 8 a bill was passed in joint session for the purchase by the state of the Helsingborg and Gotenburg, Engelholm and Landskrona, and Malmö and Billsholm railroads.

In June Count Lewenhaupt resigned the Ministry of Foreign Affairs, and Count Ludwig W. A. Douglas took his place. The Minister of Finance was succeeded by R. Wersäll.

**Norway.**—The legislative power is vested in the Storting, containing 114 members, elected for three years, 38 by the towns and 76 by the rural districts. One fourth of its members are chosen annually by the Storting to form the Lagthing, which has a veto power over the acts

of the Odelsting, composed of the remaining three fourths of the members. The Council of State was composed in the beginning of 1895 as follows: Minister of State, Emil Stang; Education and Worship, Dr. Anton C. Bang; Justice, Ernst Motzfeldt; Interior, Peder Birch-Reichenwald; Public Works, Peder Nilsen; Finance and Customs, Ole Andreas Furu; Defense, Johannes Vinding Harbitz. The delegation at Stockholm consisted of Gregers W. W. Gram, Minister of State, with Dr. George Francis Hagerup and Lieut.-Col. Christian W. E. B. Olsson as associates.

**Finances.**—The revenue for the year ending June 30, 1894, was 53,624,900 kroner, including 577,800 kroner locally subscribed for railroad construction. Of the ordinary receipts, 21,021,900 kroner came from customs, 2,639,200 from direct taxation, 3,975,800 from the impost on spirits, 2,217,200 from the malt tax, 650,400 from the stamp duty on playing cards, 995,600 from judicial fees, 558,600 from the succession tax, 793,400 from domains and forests, 476,600 from mines, 1,636,800 from active capital, 3,290,200 from the post office, 1,297,200 from telegraphs, 7,727,900 from railroads, 1,778,200 from educational fees, 255,000 from prisons, 949,100 from hospitals, and 2,784,000 from miscellaneous sources. The expenditures amounted to 52,459,300 kroner, including 930,800 kroner for the construction of railroads. Of the ordinary expenditures, 352,700 kroner went for the civil list and appanages, 590,400 for the expenses of the Storting, 1,287,500 for the Council of State, 5,889,800 for education and worship, 5,560,000 for justice, police, and sanitary service, 7,674,800 for the interior, 9,906,400 for public works, 8,785,100 for financial expenses and the debt, 7,964,400 for the army, 3,644,500 for the navy, 642,300 for foreign relations, and 161,300 for accidental expenses.

The debt, which was contracted for productive public works, amounted on June 30, 1894, to 163,934,800 kroner, paying mostly 3 or 3½ per cent. interest. The railroads, active capital, and other assets of the Government were valued at 146,465,100 kroner.

**Communications.**—The railroads in 1894 had a total length of 1,055 miles.

The post office in 1894 carried 25,158,700 internal and 9,084,300 international letters and 36,075,100 internal and 4,384,100 international printed inclosures; the receipts were 3,409,477, and expenses 3,486,993 kroner.

The Government telegraph lines in 1894 had a total length of 5,137 miles, with 10,291 miles of wires, and the railroad telegraphs a length of 1,015 miles, with 1,905 miles of wires. The number of internal dispatches in 1894 was 1,100,749; of international dispatches, 596,184; service dispatches, 11,163; receipts, 1,333,338 kroner; expenses, 1,629,351 kroner.

**Commerce.**—The imports of merchandise in 1894 were valued at 205,990,000 kroner, and exports at 131,995,000 kroner. The principal imports and their values were: Cereals, 31,500,000; groceries, 24,300,000; coal, 14,600,000; tissues, 29,800,000; oils, 10,500,000; animals and provisions, 14,100,000; metals, 7,800,000; hides and leather, 6,100,000; textile materials, 5,900,000 kroner. The values of the chief exports

were: Animals and animal products, 45,300,000; timber, 28,000,000; wood manufactures, 18,400,000; skins and leather, 7,000,000; oils, 6,800,000; tissues, 5,700,000 kroner. The foreign commerce was distributed in 1894 as follows, values being given in kroner:

COUNTRIES.	Imports.	Exports.
Great Britain.....	57,546,000	45,420,000
Germany.....	56,294,000	15,226,000
Sweden.....	29,438,000	21,223,000
Russia and Finland.....	19,549,000	4,257,000
Denmark.....	9,088,000	4,438,000
France.....	3,632,000	7,865,000
Holland.....	8,122,000	6,470,000
Belgium.....	7,942,000	4,481,000
Spain.....	770,000	12,578,000
Portugal.....	681,000	1,804,000
Italy.....	1,480,000	3,708,000
United States.....	8,926,000	1,185,000
Other countries.....	2,527,000	3,560,000
Total.....	205,990,000	131,995,000

**Navigation.**—There were entered in 1893 at the ports of Norway 6,209 Norwegian vessels, of 1,876,195 tons, and 5,342 foreign vessels, of 970,753 tons; and there were cleared 6,383 Norwegian vessels, of 1,991,640 tons, and 5,316 foreign vessels, of 966,792 tons. The total number entered was 11,551, of 2,846,948 tons, of which 5,639, of 1,792,328 tons, were with cargoes; of the total number of 11,699, of 2,958,482 tons, that were cleared, 10,239, of 2,361,502 tons, carried cargoes.

The merchant marine on Jan. 1, 1894, numbered 6,702 sailing vessels, of 1,452,276 registered tons, and 811 steamers, of 237,135 tons.

**The Army and Navy.**—Military service was declared obligatory by the law of 1885 from the age of twenty-three for five years in the active army, but actual service with the colors is confined to a course of instruction, lasting in the first year seventy days for cavalry and field artillery, fifty days for engineers, forty-two days for infantry, mountain, and fortress artillery, and sanitary troops, and eighteen days for the train, followed by twelve days of exercises with the first classes of the Landwehr. The artillery, cavalry, and engineers are called out for twenty-four days of exercises in the next three successive years, and the other troops for two years only. The peace effective of the active army is about 1,700 officers and instructors and 18,000 men; for war it can be doubled by drafts from the Landwehr.

The naval force consists of 4 ironclad monitors, 1 corvette, 3 first-class, 12 second-class, and 16 third-class gunboats, and 11 first-class and 2 second-class torpedo boats. There are being built 2 armored-turret ships, 1 first-class gunboat, 1 torpedo cruiser, and 7 torpedo boats. The *personnel* of the navy consists of 97 officers, 30 cadets, and 454 sailors and employees.

**The Conflict with Sweden.**—Just before the assembling of the newly elected Storting the King transferred his residence to Christiania. The Conservative ministers who had carried on the administrative business for nearly two years without a majority placed their resignations in his hands. The Swedish Government was inclined to accede to the establishment of a separate Norwegian consular service, as already enacted by the Storting, but only on condition



that the common diplomacy should be preserved. King Oscar offered to the Radical Left the option of forming a ministry upon the understanding that the consular question should be submitted to the joint Council of State after negotiations with Sweden regarding the dissolution of the existing consular system and the question of foreign relations. Two years before he had ruled that the breaking up of the joint consular system could not be carried through by Norway independently, as a matter of purely internal politics. The Left declined to enter into negotiations with Sweden until they could be conducted by a minister representing a majority of the Storting. The Storting was called to an extraordinary session on Feb. 1, and on Feb. 19 passed into the ordinary session. No solution of the political crisis having been reached, the Stang ministry remained provisionally in office. The introduction of compulsory military service in the northern provinces and the expenditure of large additional sums for the completion of the military defenses were proposed in the speech from the throne. To balance the increase in the national expenditure a stamp tax was declared to be necessary. Having failed to come to an agreement with the Radical leaders, the King, on Feb. 27, requested the Conservative ministers to withdraw their resignations, and when they declined he requested Jacob Sverdrup, of the Moderate Left, to form a ministry, but he refused to accept the mission. Ex-Minister Thorne likewise refused. The King favored the reorganization of the Ministry of Foreign Affairs on a strictly common basis, with a minister who may be either a Swede or a Norwegian and who shall be responsible to a joint delegation of the Riksdag and the Storting. The Stang ministry was induced to continue in office after the failure, in the beginning of April, of Herr Michelet, a member of the Right, to obtain the co-operation of the Radicals in a coalition Ministry of Affairs. The Swedish Riksdag threatened to abrogate the commercial treaty with Norway, and the Extreme Radicals became more violent as the deadlock continued. The temperate men of the party saw the prospect of an acceptable revision of the act of union improved by the intervention of the King. On June 7 the Storting resolved to enter into negotiations with Sweden by a vote of 90 against 24. The King called upon the Radical leader Engelhart, the mover of the resolution, to form a Cabinet representing the majority. Herr Engelhart, however, declined to undertake the task unless he were allowed to select his colleagues not only from among the 35 Radicals who voted for his motion, but also from among the Extreme Radicals who had opposed it. On June 17 King Oscar asked Jacob Bonnevie, a Conservative ex-minister, to form a compromise ministry, but he also failed. The diplomatic and consular appropriations were voted by the Storting in the latter part of June with conditions appended that the Swedish Government declined to accept. The civil list, which the Storting reduced in 1893 from 366,000 to 256,000 kroner, and the allowance to the Crown Prince, which was cut down from 80,000 to 30,000 kroner, were restored on the demand of the King, who contended that it was

a violation of the Constitution to reduce the royal allowance. On July 21 Herr Thorne attempted to form a coalition Cabinet without success. On July 25 the Storting voted 8,000,000 kroner for 2 ironclads and 4,000,000 kroner for 3 torpedo boats and the remodeling and armament of the 4 monitors already possessed by Norway. Negotiations were begun between the Swedish and Norwegian governments and proceeded while the extremists of both countries exchanged threats of war. The Cabinet crisis did not end before Oct. 14, when a coalition Cabinet was formed, made up as follows: Minister of State, Dr. G. F. Hagerup, who took charge of the Department of Justice and Police; Minister of Public Worship and Education, Dr. Jacob L. R. Sverdrup; Minister of the Interior, T. de W. Engelhart; Minister of Public Works, P. Nilsen; Minister of Finance and Customs, B. Kildal; Minister of National Defense, Lieut.-Col. C. W. E. B. Olsson; Secretary of the Department of Revision, F. Stang-Lund; Delegation at Stockholm, G. W. W. Gram, Minister, and B. M. Haugland and H. Smedal, Councilors of State. A joint commission was appointed by the two governments in November to discover an amicable solution of the difficulties connected with the union. Of the Norwegian commissioners, 3 were taken from the Right, 3 belonged to the Left, and 1 was a Moderate.

**SWITZERLAND**, a federal republic in central Europe, consisting of 27 cantons or independent half cantons. The Federal Assembly is composed of the Nationalrath, consisting of 147 members elected for three years by direct universal suffrage, and the Ständerath, containing 2 members from each canton or half canton. The executive authority is exercised by the Bundesrath, consisting of 7 members chosen by the Federal Assembly, one of whom is elected annually in December to serve as President of the Federation for the coming year, and another to serve as Vice-President. The Federal Council in 1895 was composed as follows: President, J. Zemp, of Luzern, Chief of the Department of Posts and Railroads; Vice-President, A. Lachenal, of Geneva, Chief of the Department of Foreign Affairs and Commerce; Chief of the Department of Military Affairs, Emil Frey, of Basel-Land; Chief of the Department of Justice and Police, Lieut.-Col. A. von Wattenswyl, of Bern; Chief of the Department of the Interior, E. Ruffy, of Vaud; Chief of the Department of Industry and Agriculture A. Deucher, of Thurgau; Chief of the Department of Finance and Customs, W. Hauser, of Zurich. A. Lachenal was elected President and A. Deucher Vice-President for 1896 on Dec. 12, 1895.

**Area and Population.**—The area of Switzerland is 15,976 square miles. The population in June, 1894, was estimated to be 2,986,848. The number of marriages in 1894 was 22,573; of births, 87,478; of deaths, 65,517; excess of births, 21,961. The city of Zurich in the middle of 1895 had 134,540 inhabitants; Geneva, 80,111; Basel, 78,860; Bern, 48,328.

**Finances.**—The Federal revenue in 1894 was 84,047,312 francs, of which 41,200,681 came from customs, 5,854,184 from the mint, 180,591 from bank notes, 478,381 from real property, 1,475,-

283 from invested capital, 25,726,178 from posts, 6,019,352 from telegraphs and telephones, 179,045 from railroads, 2,353,122 from military arsenals, 47,377 from the general administration, 330,058 from the political department, 6,888 from justice and police, 174,601 from industry and agriculture, and 21,576 from other sources. The total expenditures were 83,675,812 francs, of which 4,013,267 francs were for interest and sinking fund of the debt, 1,038,020 for the general administration, 955,693 for the political department, 9,633,476 for the Interior Department, 153,806 for justice and police, 24,780,828 for the Military Department, 9,984,187 for finance and customs, 3,161,946 for industry and agriculture, 29,901,138 for posts and railroads, and 52,651 for unforeseen expenses.

The debt of the Federation is 85,203,586 francs; the active assets are 156,326,189 francs.

**Commerce.**—The special commerce with foreign countries in 1894 is shown in the following table, the values being given in francs:

COUNTRIES.	Imports.	Exports.
Germany.....	242,855,000	157,110,000
France.....	110,252,000	73,044,000
Italy.....	143,824,000	37,933,000
Austria-Hungary.....	80,256,000	33,343,000
Great Britain.....	43,140,000	117,580,000
Netherlands.....	3,025,000	4,142,000
Belgium.....	23,035,000	11,531,000
Spain.....	11,236,000	11,702,000
Russia.....	55,735,000	22,416,000
Other European countries.....	6,824,000	20,019,000
United States.....	35,084,000	71,840,000
Other American countries.....	23,042,000	18,706,000
Asia.....	31,233,000	26,330,000
Africa.....	12,281,000	5,511,000
Australia.....	4,061,000	1,597,000
Without indication.....	.....	2,395,000
Total.....	825,883,000	621,199,000

The imports of coin and bullion, which are not included in the above statement, amounted to 54,962,000 francs, and the exports to 51,805,000 francs. The values, in francs, of the principal imports were: Silk, 102,400,000; grain and flour, 80,000,000; animals, 71,700,000; coal, 38,300,000; woollens, 37,500,000; chemicals, 28,500,000; cotton, 27,200,000; iron, 27,100,000; wine, 23,400,000; machines and vehicles, 21,300,000; sugar, 19,200,000; cotton goods, 18,800,000; iron goods, 16,800,000; coffee, 16,600,000; timber, 14,600,000; barley, malt, and hops, 11,700,000; leather, 11,100,000; wool, 9,300,000; books, etc., 9,200,000; tobacco, 9,000,000; silks, 8,900,000. The values of the principal exports, in francs, were: Silks, 118,900,000; cottons, 102,800,000; watches, 85,900,000; cheese, 37,700,000; raw silk, 34,800,000; silk yarn, 29,800,000; machines and vehicles, 26,700,000; chemicals, 21,300,000; milk, 19,600,000; cotton yarn, 19,300,000; animals, 15,600,000; woolen yarn, 8,700,000; straw goods, 8,400,000. A new commercial treaty with France, terminating the war of tariffs, went into force on Aug. 19, 1895.

**Communications.**—Switzerland had 2,220 miles of railroads on Jan. 1, 1894. The post office in 1894 carried 76,985,000 internal and 32,044,000 international letters, 15,206,000 internal and 9,109,000 international postal cards, and 24,860,000 internal and 18,445,000 international circulars and book packets, and transmitted 3,906,000 internal postal orders for 424,949,000 francs and 778,000 international ones for 35,689,000 francs. The state telegraph lines in 1894 had a total length of 4,515 miles, with 12,258 miles of wire. The number of messages sent was 3,780,698, of which 1,818,827 were internal, 1,301,376 international, 526,537 in transit, and 133,958 official.

# T

**TENNESSEE**, a Southern State, admitted to the Union June 1, 1796. The population, according to each decennial census since admission, was 105,602 in 1800; 261,727 in 1810; 422,771 in 1820; 681,904 in 1830; 829,210 in 1840; 1,002,717 in 1850; 1,109,801 in 1860; 1,258,520 in 1870; 1,542,359 in 1880; and 1,767,518 in 1890. Capital, Nashville.

**Government.**—The following were the State officers during the year: Governor, Peter Turney, Democrat; Secretary of State, William S. Morgan; Treasurer, Edward B. Craig; Comptroller, James A. Harris; Attorney-General, G. W. Piekler; Adjutant General, John A. Fite, succeeded in May by Charles Sykes; Superintendent of Public Instruction, Frank M. Smith, succeeded by S. G. Galbreath; Commissioner of Agriculture, Statistics, and Mines, T. F. P. Allison; Commissioner of Labor, F. P. Clute; State Geologist, J. M. Safford; Chief Justice of the Supreme Court, D. L. Snodgrass; Associate Justices, W. C. Caldwell, John S. Wilkes, W. K. McAllister, and W. D. Beard; Court of Chancery Appeals Justices, M. M. Neil, S. F. Wilson, R. M. Barton, Jr.—all Democrats.

**Finances.**—The total valuation of taxable property in the State in 1895 was \$316,061,613.

The value of town lots was placed at \$111,906,412.

The legislative committee appointed to examine the treasury accounts reported that the actual floating debt of the State Dec. 20, 1894, was \$7,275.86. The report said further: "We find that Comptroller Harris did, on May 2, 1894, call in the entire amount of outstanding 5s and 6s, aggregating \$1,011,900, which caused all further interest on this amount to cease after July 1, 1894, thereby resulting in a great saving to the State, the Comptroller estimating that the \$1,011,900 could easily be paid out of the proceeds of the sale of the \$1,000,000 redemption bonds and the remainder could readily be redeemed out of the surplus in the treasury, which has been done. The balance in the treasury in May was \$1,043,372.

**The University.**—The total number of students this year was 317. The medical department numbered 186 at the spring term, and graduated 59, of whom 15 were students in dentistry. The university won the highest award at the Atlanta Exposition for the best collective exhibit of university work. It now offers free tuition to all students of proper age and character who pass the required examinations.



**The Penitentiary.**—Charges of mismanagement in regard to the contracts for building the Penitentiary having been made, an investigation was demanded, and a legislative committee was appointed, which, after a thorough investigation, made a report sustaining most of the charges. It was found that there had been fraud and corruption in the sale of lands to the State for the new prison and in the letting of the contracts for building it. The evidence showed corruption on the part of M. L. McDowell, one of the building and purchasing committee, whose resignation was at once demanded by the Governor. Others implicated in the frauds were C. C. Estill, State Railroad Assessor; John A. Fite, Adjutant General; E. L. Laurent, supervising architect; and W. C. Smith, the architect who prepared the plans. The commissioners were wholly unfamiliar with the duties required of them. The greatest fraud appears to have been in the letting of the building contract. The State officers above named were forced to resign.

The report on the condition of the main prison at Nashville was very unfavorable; dirt, squalor, idleness, mismanagement, and suspicion of immorality were among the conditions reported.

Contracts for the new buildings were signed in December. The cost is not to exceed \$300,000. Bids were received for leases of convict labor, but none had been accepted at the close of the year. There are about 1,600 State prisoners, scattered as follows: Main prison, 605; Tracy City, 425; Brushy Mountain, 350; Coal Creek, 100; new prison, 50; and quarry, 50. The stockade at Brushy Mountain will accommodate between 500 and 600 prisoners. On the recommendation of the Penitentiary Committee, the Governor pardoned 49 convicts in April, some of whom were women, others boys, others invalids, and in one or two instances the pardon was the reward of good conduct.

**The Centennial Exposition.**—Although the Legislature made no appropriation, progress has been made in the preparations for the exposition to celebrate the hundredth anniversary of Tennessee's statehood. Large subscriptions have been made, officers chosen, a site selected in the outskirts of Nashville, comprising 320 acres, some of the building designs accepted, and some contracts let. The corner stone of the Fine Arts Building was laid in October. It is expected that the exhibition will open Sept. 1, 1896.

**Wautauga Tree.**—The one hundred and fifth anniversary of the acceptance of the territory of Tennessee was celebrated April 2 by the planting on the Capitol grounds of a tree from the old fort at Wautauga, the first white settlement west of the Alleghanies.

**The Election of Governor.**—The returns of the election of 1894 gave a plurality of 748 to H. C. Evans, the Republican candidate for Governor. The Democrats claimed that this result was due to fraud (see "Annual Cyclopædia" for 1894, page 739), and Gov. Turney sent a petition and address to the Legislature asking for an investigation. The chairman of the Republican State Committee also sent an address stating the legal position taken by his party, which was that, to carry out the provisions of the Constitu-

tion, the candidate shown on the face of the returns to be elected should be seated as Governor; when this had been done, and not till then, could a contest take place; till then there could be no parties and no subject-matter of contest, no controversy requiring investigation and decision could exist; that the Constitution required the contest to be decided by the Assembly and not by the courts, and "in such manner as is prescribed by law"; that there could therefore be no contest until a law should be passed, and attention was called to the distinction between a law and a resolution; and the communication said further:

But the publication of the returns and the seating of the Governor-elect can not be dispensed with or postponed because there is no law defining the mode of contest, nor by any law which may be passed on the subject, nor by any contest which may be instituted under such law, nor by any dilatory proceeding, nor on any excuse or pretext whatever. The contest comes after the seating of the Governor-elect. The Governor holds his office for two years, and until his successor shall be elected and qualified. But his term is computed from Jan. 15 next after the election. The person who on the publication of the returns shall have the highest number of votes "shall be Governor." The title to the office is in him; his *prima facie* right is immediate and complete. The Legislature may provide a remedy for a contest, but it must be carried on with the Governor-elect qualified and seated. The claimant to the office whom the returns show not to have been elected becomes the contestant; the fact that he happens to have been Governor for the term just expired gives him no right to the office for any part of the new term, and no more entitles him to retain possession of the office pending the contest than his claim to the office would entitle him to be inducted into it if he had not been the incumbent. By conferring on the Legislature the right to prescribe the manner of making the contest, the Constitution did not destroy its previous declaration that the person having the highest number of votes shall be Governor. He is Governor, subject to be deprived of his office by the determination of the contest for which the Legislature may provide by law. His right is immediate and vested, and superior to that of any claimant or incumbent. The contestant, whoever he may be, or whatever his position, must await the result of the contest. To hold otherwise would be to offer a reward for frivolous or corrupt contests and to enable an incumbent to continue himself in office merely by making a contest regardless of its merits.

The Democrats did not take this view of the question, and refused to seat Mr. Evans till after the investigation had been made.

Their position was:

As the Constitution provides no particular time for the inauguration of a Governor-elect, but simply provides that he shall be inaugurated during the first session of the Legislature after the election, and that the sitting Governor shall hold his office until his successor is elected and qualified, a law prescribing the manner of the contest should be determined during the present session of the Legislature, and the candidate who received the plurality of the legal votes at the November election should then be inaugurated.

The Democratic majority decided upon this latter course, three bills having been introduced prescribing the method of procedure, and a resolution passed postponing the opening of the returns, and also postponing the inauguration until after investigation. One of the bills men-

tioned was passed, and Mr. Evans sent in a protest against the act as being unconstitutional and void. Soon after the returns were opened he took the oath as Governor before a justice of the peace at the State Library, Feb. 6, in the presence of several State officials and about 150 members and visitors, claiming that, as the returns showed his election, it was his right and duty to take the oath. Having been sworn to and subscribed, it was offered to the Secretary of State to be placed on file, but he refused to receive it.

The vote was opened in joint convention, and the objections of Turney and Evans were made to the returns of the various counties, Mr. Evans's objections being made under protest against the manner of proceeding. Both contestants objected to the returns from 5 counties; Turney objected to 29 in addition, and Evans to 40 others; those of 22 were not objected to. The Democrats charged frauds in the eastern counties mainly, the Republicans in the middle and western. The former alleged that in the 29 counties 29,733 votes were cast without the payment of poll taxes, of which 22,774 votes were cast for Evans and 6,959 votes for Turney. It was estimated that 24 per cent. should be deducted for the votes of citizens who were over age or otherwise legally exempt from the payment of poll taxes, which would leave Evans credited with 17,208 and Turney with 5,389 illegal votes on the face of the returns. The total illegal vote on the face of the returns on account of violations of the poll-tax law was estimated at 22,597. It was also charged that convicts had been allowed to vote in Anderson County; that votes had been openly bought in Campbell County; that in Cocke County no legal returns whatever were made; that in Greene County the box was illegally opened before the time for closing the polls; and other irregularities were named.

The answer and counter-charges alleged that 63,596 votes cast for Turney and 31,796 cast for Evans were affected by illegalities and frauds. There was an answer to this document, making specific denials.

The bill that had been passed provided for the appointment of a committee of 5 Senators and 7 Representatives to take proof concerning all alleged frauds and violations of election laws in any part of the State, and to report within forty days to the joint convention, which should then try the case upon the report and proof submitted.

Five of the 12 appointed to the committee were Republicans. The committee heard arguments in reference to the rules for admitting evidence, etc., and pleading in regard to the various counties proposed for investigation. It was alleged that the rulings of the committee resulted in fuller investigation of the eastern counties than of the middle and western, some of the latter having been thrown out of the list. The committee was divided into 4 subcommittees, to each of which a part of the counties to be investigated was assigned; and these subcommittees went through the State examining records and taking testimony. The Legislature took a recess of about forty-five days during their absence, and reconvened April 2. The

majority report, signed by the 7 Democratic members of the committee was submitted April 27, and showed a plurality of 2,358 for Turney. The committee had cast out 22,389 votes as illegal, of which 12,656 were for Evans and 9,733 for Turney, making a net loss of 2,923 for Evans. His plurality was at first reported as 748, but errors found in tally sheets had reduced it by nearly 200. The minority report declared that the committee exceeded its authority in deciding some charges not specific; that it did not find according to the law and the facts, and that it ruled in opposite ways as Turney's interest required. Arguments were heard before the Legislature in joint convention, and the majority report was adopted by a vote of 70 to 57. Two were excused from voting, one of whom gave as the reason that, while his constituents desired him to support the majority report, he could not conscientiously do so, believing that the investigation had not been full and thorough. Gov. Turney was declared elected, and was inaugurated May 8.

**Legislative Session.**—The Legislature convened Jan. 7, and adjourned May 14. A recess of about forty-five days was taken, in order to allow the investigation of alleged election frauds to be made. It reconvened April 2, and took another recess of ten days—April 12–22—for the purpose of giving time for the election and other committees to finish their work. An extra session was called by the Governor, beginning May 30, and adjourned June 17.

Ernest Pillow was chosen Speaker of the Senate, and John A. Tipton Speaker of the House. The Democrats had 20 Senators and 60 members of the lower house; the Republicans, 10 Senators and 32 in the lower house; the Populists, 3 and 7, respectively. Isham G. Harris was re-elected United States Senator. The Republican candidate was E. J. Sanford, and A. L. Mims was voted for by the Populists.

A Court of Chancery Appeals was created for the purpose of assisting the Supreme Court to finish the cases on hand and to try all the cases on the docket at each term hereafter. It is to consist of 3 judges.

In order to restrict coroners' inquests to cases where they are actually needed, an act was passed requiring certain evidence in writing before such inquest can be held establishing a probability that death resulted from violence or foul means.

Superintendents of schools in counties of 30,000 and over were forbidden teaching or taking contracts for school work, and a law was passed to provide for the better qualification of county superintendents.

The game laws were amended; it was made unlawful for any person to ship from Gibson County any quail at any season of the year, and a misdemeanor to hunt any quail or partridge in Grainger or Hamblen County from April 1 to Oct. 1; laws were made to protect deer in certain counties, and to protect game in Warren County. Laws were also made for the better protection of fish.

The so-called no-fence law was made to apply to Davidson, Knox, Shelby, Gibson, and Madison Counties, and it was provided that other counties may adopt the law by a majority vote. It



is designed to relieve farmers of the expense of inclosing their fields, and involves the preventing of live stock from roaming at large.

The boundary lines of many counties were changed. Certain cities and counties were authorized to fund their floating debts. The following cities were incorporated: Dover, Stewart County; South Fulton, Obion County; Dayton and Spring City, Rhea County; Jamestown, Fentress County; Camden, Benton County; and Binghampton, Shelby County. Some charters of cities were amended, and those of the following were repealed: Oakdale, Morgan County; Harrowgate and Bacchus, Claiborne County; Erwin, Unicoi County; Clifton, Wayne County; and Trimble, Dyer County. The acts incorporating White Pine, Jefferson County, and Allentown were repealed, and an act was passed repealing the charter of Rockwood, Roane County, and reincorporating it.

Other acts of the regular session were:

To cede to the United States jurisdiction over certain lands in Hamilton, Hardin, and McNairy Counties, including the battlefields of Shiloh, to establish a national park.

To establish a system of reformatory institutions for youth.

To authorize Memphis to issue \$3,000,000 of bonds to refund old debts.

To provide for the organization and support of battlefield associations.

To provide for labeling, stamping, or marking oleomargarine, butterine, and imitation butter, and to provide against coloring it.

To create a Commission of Public Printing.

To authorize municipal corporations of above 2,000 inhabitants to establish and maintain a high-grade school.

To provide that no life, fire, marine, accident, or other insurance company having its capital stock wholly outside of the State of Tennessee shall be required to pay any tax on its capital stock for doing business in this State.

To appropriate \$10,000 for a monument to Tennessee soldiers in Chickamauga National Park.

To prevent the spreading of contagious or infectious diseases among domestic animals.

To prevent the attachment or garnishment of future salary or wages of any employee.

To prevent special assignments, and to secure to creditors a *pro rata* distribution of the property estates and assets of debtors.

To provide for the teaching of the effect of alcoholic drinks and narcotics and smoking cigarettes in the public schools.

To create a Board of State Charities.

To change the name of the Mossy Creek Baptist College to the Carson and Newman College.

To make unbelievers competent witnesses.

To authorize the United States to acquire lands for a fish-cultural station.

To regulate the business of insurance other than life and casualty insurance upon the assessment plan.

To have copied the registers of the Tennessee soldiers in the Confederate army, and appropriating \$2,000 therefor.

Appropriating \$17,000 for the maintenance of the Confederate Soldiers' Home for the next two years.

Resolutions were adopted as follow:

To memorialize Congress to enact legislation that will provide for the free and unlimited coinage of silver and gold at the ratio of 16 to 1.

To provide for the settlement of the claims between the State and the United States growing out of the seizure of railways by the Government during the war.

A commission was appointed to prepare a bill for revenue, and the following special committees were appointed: To investigate alleged irregularities in the management of the Penitentiary; to examine the offices of the Comptroller and the Treasurer; to examine the office of the Secretary of State; to examine into the expenditures of the Department of Agriculture and the Bureau of Labor; to investigate the State printing account; to examine into the cost of criminal prosecutions, and to devise a plan for reducing it. A committee on insurance and building and loan associations also was provided for.

The Comptroller and the Treasurer were reelected, and most of the other State officials who are appointed or confirmed by the Legislature.

In the call for the extra session, 6 subjects were named for legislative action: The appropriations for the support of the State Government and institutions, and other public purposes; taxation and revenue; regulation of State banks; establishment of a levee district; provision for making registration less frequent; the providing of a main prison and stockade for the State's convicts.

The revenue bill prepared by the commission, which had passed the Senate at the regular session after various changes, was enacted into a law. It reduced the State tax from 45 cents on the \$100 to 35, of which 20 cents is for State and 15 cents for school purposes. The county courts are empowered to levy a county tax not exceeding 30 cents on every \$100, exclusive of the tax for public roads and schools and interest on county debts, except as otherwise provided in the bill. A long list of privilege taxes follows, the highest of which is \$10,000 a year on railroad companies not paying *ad valorem* tax to the State and operating or controlling 400 miles or more of road in the State; and \$5,000 on those operating from 100 to 400. The highest tax on express companies is \$2,000. A large number of the privilege taxes are reductions, in some cases by one half.

The inheritance tax is omitted, and the insurance taxes are unchanged. Pool sellers are taxed \$250, and elevator companies \$50, except in places of fewer than 2,000 inhabitants, where the tax is but \$10.

The action taken in reference to registration provided that a general registration shall be held next August in all cities, towns, and districts subject to the registration laws; after that date there will be registration every two years, except in civil districts of 5,000 population not included in counties wholly subject to registration, and in these districts registration will be held every four years. Once every year, in all districts subject to the registration, there will be three days' registration to allow all who have failed to register to do so.

An appropriation bill and a levee bill were passed.

An important part of the work was that providing for the Penitentiary. Both political parties were committed to the abolition of the lease system, and the current lease was to expire Jan. 1, 1896. As quarters could not be provided for all the prisoners by that time, it seemed neces-

sary to lease a part at least temporarily, and the two houses almost came to a deadlock. The bill as passed calls for the building of a new prison, to cost not more than \$350,000, on the Cockrill farm. It calls for 820 cells in the main prison, and provides for 1,000 convicts at the Brushy Mountain mines, appropriating \$40,000 for building stockades there and opening up the mines. It provides for 3 prison inspectors.

**Conventions.**—A "sound-money" convention assembled at Memphis, May 23, and delegates were present from every Southern State. The convention was addressed by the Secretary of the National Treasury, and adopted a platform favoring monometallism.

Another convention was held in the same city, June 12-13, in the interest of silver coinage. A large number of those who spoke favored placing the silver question above party allegiance, and there was some prospect of a bolt on that account; but the resolutions omitted all reference to party lines, advocating free coinage and attributing the hard times to the demonetization of silver.

A wheat convention was held at Nashville, Sept. 10-11, attended by about 60 wheat growers and millers, from all parts of the State.

**The National Park.**—The dedication of the Chattanooga and Chickamauga National Park, Sept. 18-20, was attended by a vast crowd, estimated at 40,000, among them great numbers of veterans of both armies. Of the 10 square miles constituting the area of the park, over 5,000 acres are forest and about 1,000 acres open farms. A central driveway, passing through and overlooking all the heavy fighting ground, has been built 20 miles long. Forty-two miles of the roads of the battles have been reopened and improved in the most substantial and enduring manner, and new roads have been closed up. Many of the minor roads have also been cut out and graded, so that there are now about 60 miles of driveways in the park, all of them along the roads of the war. The removal of underbrush and the clearing out of the new growth of timber has opened the forest so that carriages can drive through it in all directions, and the appearance now is like that of an immense area of forest pasture in the blue-grass region.

The Chickamauga portion of the park is connected with the Chattanooga end of it by national driveways. Within the park the Government has set up 400 historical tablets, and will set up 1,600 more, each 3 by 4 feet, consisting of cast-iron plates, glazed black, fastened to iron posts set in concrete. On these tablets in embossed white letters are set forth briefly and impartially the historic details of the six battles—Chickamauga, Missionary Ridge, Lookout Mountain, Orchard Knob, Wauhatchie, and Brown's Ferry. They also mark the positions of army headquarters, corps, divisions, and brigades, both National and Confederate, and the parts taken by each organization are stated concisely, without censure and without praise. The Government has also erected 9 handsome granite monuments, all different, one for each of the organizations of regular army troops engaged in the battles. It has also built, on the spots where they fell, 8 pyramidal monuments of novel design, each 10 feet high, constructed of 8-inch

shells, in honor of 4 general National officers and 4 Confederate officers, killed in action.

In addition, the Government has built 5 observation towers, 70 feet high, 2 on Missionary Ridge, and 3 on Chickamauga field. Finally, it has marked the most important fighting positions occupied by each of the 35 National batteries and 39 Confederate batteries engaged in the battles, by 400 mounted cannon of the types and appearance then used. Besides the guns themselves the battery positions are described on tablets. The lines of earthworks used by the contending armies have been found also, and are being carefully restored.

The States have set up 171 monuments in memory of the action of their regiments.

**Shiloh.**—Next in interest to the dedication of the National Park, was the reunion of veterans on the field of Shiloh on the thirty-third anniversary of the battle, April 6.

**TEXAS,** a Southern State, admitted to the Union Dec. 29, 1845; area, 265,780 square miles. Population, according to each decennial census since admission, 212,592 in 1850; 604,215 in 1860; 818,759 in 1870; 1,591,749 in 1880; and 2,235,523 in 1890.—Capital, Austin.

**Government.**—The following were the State officers during the year: Governor, Charles A. Culberson, Democrat; Lieutenant Governor, George T. Jester; Secretary of State, Allison Mayfield; Treasurer, W. B. Wortham; Comptroller, R. W. Finley; Superintendent of Public Instruction, James M. Carlisle; Commissioner of General Land Office, A. J. Baker; Commissioner of Agriculture, Insurance, Statistics, and History, A. J. Rose; Adjutant General, W. H. Mabry; Attorney-General, Martin M. Crane; Chief Justice of the Supreme Court, Reuben R. Gaines; Associate Justices, Leroy G. Denman and Thomas J. Brown; Clerk, Charles S. Morse.

**Finances.**—The report of the Comptroller for the year ending Aug. 31, 1895, showed these figures: Receipts, \$2,086,578.20; amount of warrants issued, \$2,329,414.56; retrenchment in expenses of the various departments at the capital, \$78,293.50; poll tax assessed, \$711,168.50; *ad valorem* tax assessed, \$3,874,070.40; occupation taxes, \$792,770.25; total acres of land assessed, 133,265,147; valuation of lands, \$412,311,585; valuation of town lots, \$186,815,838; valuation of live stock, \$75,418,674; valuation of railroads, \$70,420,925; and assessed value of all other property, \$115,943,545; total tax assessed, \$4,585,238.90; and net reduction of assessed values from the total of the previous year, \$4,210,422. The expenses of the State were reduced about \$275,000 per annum, and the extraordinary increase in the taxes was due to deficiencies in revenue, estimated at \$1,800,000. The State debt aggregated \$3,992,030, of which the permanent school fund held bonds amounting to \$2,162,600; the University fund, \$567,540; the Agricultural and Mechanical College, \$209,000; the State Lunatic Asylum, \$111,700; the Blind Asylum, \$111,500; the Deaf and Dumb Asylum, \$61,000; and the Orphan Asylum, \$9,200—leaving \$750,490 in the hands of individuals.

**Legislative Session.**—The Legislature met in regular biennial session on Jan. 8, and Gov. Culberson was inaugurated on the following day. The message of the retiring Governor



treated of the general condition of the State, and that of the incoming one was a plea for the exercise of strict economy in the administration of the government. The session was extended beyond the usual time, and an uncommonly large number of bills was considered. Among the bills that became laws were those to set apart the 22d day of February as "Arbor Day"; to transfer the Confederate Home from private to State management; to assess national bank notes and United States Treasury notes; to encourage irrigation; to provide for the construction and maintenance of ditches, drains, and water courses, and for the improvement and enlargement of the natural drainage of the several counties; to authorize cities and towns of 10,000 inhabitants or less to abolish their corporate existence; to incorporate the city of Sherman; to establish an arbitration commission by which labor grievances may be adjusted; to create life and accident insurance companies; to adopt and publish the revised civil statutes, the penal code, and the code of civil procedure; and a large number to increase the revenues of the State and to quiet titles to land.

**Education.**—The school census of 1895 showed 547,904 white pupils and 170,901 colored, an increase in the year of 25,153, principally in the northern and middle counties. In May the Superintendent of Public Instruction rendered a decision, on appeal, denying the right of sectarian schools to partake of the benefits of any distribution of the State Free-school fund toward paying the teachers of such schools where the children are numbered among free-school pupils and taught by sectarian teachers. Details from the reports of the various institutions for the year ending Aug. 31, 1894, reported in 1895, included the following: Total expenditures on account of the public schools, \$3,504,357, of which \$2,892,296 was wages to teachers; number of teachers, 12,462; number of high schools, 70; number of endowed academies, seminaries, and other secondary schools, 42, with 180 instructors and 3,574 students; colleges for women, 4, with 42 instructors and 636 students; and universities and colleges of liberal arts, 11, with 165 professors and instructors, 3,513 students in all departments, and 27,438 volumes in the libraries. The State University had 46 professors and instructors, 700 students, 13,000 volumes in its libraries, \$580,000 in productive funds, and a total income of \$70,000. The State Agricultural and Mechanical College had 24 professors and instructors, 293 students, 211 acres under cultivation, farm lands valued at \$24,160, buildings and equipments valued at \$53,120, receipts \$102,780, and expenditures \$107,280; and the State Normal School, at Prairie View, where similar instruction is given to colored youth, had 19 instructors, 184 students, property valued at \$18,150, and receipts and expenditures of \$28,133. The Texas Deaf and Dumb Asylum and the Texas Deaf, Dumb, and Blind Asylum for Colored Youth, both in Austin, had 18 instructors, 265 inmates, grounds and buildings valued at \$257,000, receipts \$58,320, and expenditures \$48,457; and the Texas Institution for the Education of the Blind, at Austin, had 15 instructors, 171 inmates, grounds and buildings valued at \$135,000, receipts \$42,930, and

expenditures \$42,787. The State House of Correction and Reformatory, at Gatesville, had 21 assistants, 204 inmates, grounds and buildings valued at \$75,000, and expenditures \$34,260.

**Railroads.**—The Railroad Commission reported 9,290.70 miles of main line of railroad open to traffic on June 30, 1895. All the construction in the preceding four years was in counties already fully provided with railroad facilities, and it was claimed that not a mile that was built in that period was really necessary. Forty-one counties had a total of 4,669.50 miles, 125 others had an average of 36 miles each, and 81 had none whatever. In his inaugural message, June 16, Gov. Culberson estimated the company valuation of all railroads in the State at \$375,000,000, and the taxable valuation at \$75,000,000.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of 1895: Corn, 4,087,332 acres, 107,905,565 bushels, value \$33,450,725; wheat, 365,200 acres, 2,081,640 bushels, value \$1,373,882; oats, 703,825 acres, 14,569,178 bushels, value \$3,787,986; rye, 4,387 acres, 24,129 bushels, value \$18,097; potatoes, 14,338 acres, 1,276,082 bushels, value \$995,344; and hay, 457,214 acres, 676,677 tons, value \$4,351,033; total value \$43,977,067. The same authority reported the cotton crop of 1894-'95 at 3,155,018 bales, an amount exceeding the total product of the United States in 1870, more than half of the product of 1880, and nearly half of that of 1890.

**Live Stock.**—In January, 1896, the United States Department of Agriculture estimated the number and value of domestic animals on farms and ranches at the close of 1895 as follow: Horses, 1,183,777, value \$24,528,683; mules, 264,069, value \$9,125,296; milch cows, 783,936, value \$14,024,615; oxen and other cattle, 5,518,644, value \$69,520,010; sheep, 3,065,256, value \$3,839,540; and swine, 3,035,119, value \$10,896,078; total value, \$131,934,222.

**Banking.**—On Oct. 31, 1895, there were 214 national banks in operation and 48 in liquidation. The active ones had a combined capital of \$22,523,090; circulating notes outstanding, \$5,100,029; loans and discounts, \$45,205,987; coin and coin certificates, \$2,658,659; United States bonds, \$5,195,850, an excess of \$450,917 beyond amount required by law; deposits, \$32,979,037; and reserve, \$9,035,447, an excess of \$4,088,591 beyond requirement. During the year ending Sept. 30, 1895, the exchanges at the United States clearing houses at Galveston, Houston, Dallas, Fort Worth, and Waco aggregated \$443,618,354, an increase of \$71,570,488 over those of the previous year. The State banks on June 29, 1895, numbered 8, and had a combined capital of \$885,150; resources, \$2,219,132; deposits, \$1,034,021; and surplus and profits, \$259,352.

**Mineral Resources.**—According to the report of the United States Geological Survey on "Mineral Resources of the United States for 1894," issued in 1895, the output of coal in Texas was 420,848 short tons, valued at \$976,458, of which 417,281 tons were loaded at the mines for shipment and the remainder sold to local trade and used by mine employees. With the exception of a slight decrease in the output

of 1891 from that of 1890, the production has shown a steady increase since 1889, when it was 128,216 tons, valued at \$340,117. During 1894 there was a production of 30,259 long tons of brown hematite iron ore, valued at \$11,571, and 4,671 long tons of pig iron. An oil, locally called petroleum, but known to differ from it, found in sinking wells for water near San Antonio, and valuable as a lubricant, had an output of 60 barrels. A rich find of cinnabar was discovered in the mountains within the Big Bend of the Rio Grande, about 100 miles from Marfa station on the Southern Pacific Railway, and was explored in August, 1894. Prof. W. P. Blake contributed a technical report on the region to the "Transactions" of the American Institute of Mining Engineers. Other productions of the year were: Sandstone, \$62,350; limestone, \$41,526; salt, 142,857 barrels, value \$101,000; cement, 8,000 barrels, value \$24,000; and gypsum, 6,925 short tons, all calcined into plaster, valued at \$27,300. The various clay products were: Common or pressed brick, \$895,359; fancy and ornamental brick, \$16,989; fire brick, \$87,360; vitrified paving brick, \$1,000; drain tile, \$10,049; sewer pipe, \$2,000; miscellaneous, \$16,096; total value, \$1,028,853. State Geologist E. T. Dumble, reporting in 1895 on the granite interests, said that during 1894 there had been shipped 150,000 tons of stone from the Granite mountain, 8 miles south of Burnet, for the jetties at Galveston, and that large quantities were being quarried for similar use at Sabine Pass and Calcasieu. Large shipments were also being made for use in the construction of public buildings within and without the State. The new courthouse at Fort Worth is being built with red granite from a quarry near Kingsland.

**Pugilism.**—In consequence of the announcement that a prize fight would take place in Dallas County in October, Gov. Culbertson issued a proclamation, July 27, declaring prize fights to be unlawful in Texas, reciting the duties of the peace officers, and warning all parties interested in the proposed contest. He also called a special session of the Legislature, to meet on Oct. 1, and pass a bill making prize fighting a felony. Such a bill was adopted Oct. 2, by a vote of 107 yeas to 5 nays (15 absent or not voting) in the House, and by 27 yeas to 1 nay in the Senate.

**Farmers' Congress.**—A State Farmers' Congress was held at Fort Worth, Feb. 19 and 20, which issued an appeal to the farmers of the State to reduce the cotton acreage at least 25 per cent.; to undertake a diversification of crops; to turn their attention to raising and feeding cattle and sheep, and, as far as possible, hogs; and to encourage the establishment of factories of every description.

**Cotton Convention.**—A convention of cotton growers was held at Waco, March 28 and 29. Under a resolution declaring the necessity for the utmost economy in placing the cotton crop on the market, on account of low prices, a committee was appointed to confer with the Railroad Commissioners and the representatives of the principal railroads with a view to securing more favorable rates for transportation. The convention also issued an address, similar in tenor to that of the Farmers' Congress.

**Irrigation.**—The second annual convention of the Texas Irrigation Association was held in San Antonio, Nov. 12 to 14. Several interesting papers were presented, and resolutions were adopted providing for the organization of auxiliary associations in each county, and requesting the director of the United States Geological Survey to extend its topographical map work over those parts of western and southwestern Texas in which the results will be the most readily applicable to irrigation.

**TURKEY.** an empire in eastern Europe. The Sultan is an absolute ruler under the prescriptions of the Koran, and by most Sunnite Mohammedans he is revered as the Khalif of Islam. The throne is hereditary in the house of Osman, the eldest male born in the imperial harem succeeding when a vacancy occurs. The reigning Sultan is Abdul II, born Sept. 21, 1842, who came to the throne on Aug. 31, 1876, when his brother, Murad V, was deposed on the ground of insanity. The Sultan's Cabinet was composed in the beginning of 1895 as follows: Grand Vizier, Djavad Pasha, appointed in September, 1891; Sheikh-ul-Islam, Mehmed Djemal Eddin Effendi; Minister of War, Riza Pasha; Minister of the Interior, Halil Rifat Pasha; Minister of Foreign Affairs, Said Pasha; Minister of Finance, Nazif Pasha; Minister of Marine, Hassan Pasha; Minister of Public Instruction, Zuhdi Pasha; Minister of Justice and Worship, Hussein Riza Pasha; Grand Master of Artillery, Zekki Pasha; Intendant of Evkafs, Galib Pasha; Minister of Commerce and Public Works, Tefvik Pasha; without portfolio, Djavid Pasha.

**The Army.**—Military service is obligatory, the term of service in the permanent army being three years for the infantry and four years for the other arms, but every conscript when he has served five months can purchase exemption for the rest of the period. Conscripts assigned to the depot reserves must serve from six to nine months. After passing through the active army men may be called upon to do military duty for two or three years in the *chtiad*, or reserves, eight years in the *redif*, or Landwehr, and six years in the *mustahfiz*, or Landsturm. The army is distributed in 7 *ordus*, or military circumscriptions, besides separate divisions in Arabia, Tripoli, and Crete. There have been organized 282 battalions of infantry, varying from 250 to 550 men, armed with Mauser rifles of 7.65 and 9.5 millimetres' caliber, fitted with magazines holding 5 cartridges; 195 squadrons of regular cavalry, each numbering from 50 to 80 troopers, besides 56 regiments of Kurdish irregulars, each numbering 600 men; and 169 batteries of field artillery, each of 6 pieces, 18 batteries of mounted artillery, and 46 mountain batteries. The actual peace strength of the army is about 180,000; the war strength, 800,000 men.

**The Navy.**—After having sold the strongest vessels to other Governments in the stress of financial difficulties, the Ottoman Government has begun to replace them, but has no modern armor-clad yet in a state of complete efficiency. The most powerful is the "Mesoudyeh," of 8,900 tons displacement, with 12 inches of armor and a battery of 12 18-ton guns. Four old ironclads, of 6,400 tons displacement, are being fitted with 2 11-inch Krupp guns mounted in



barbette towers. The "Hamidieh," of 6,700 tons is protected on the side with 9-inch plates and carries 10 10.2-inch Krupp guns in a central battery. The "Abdul Kader" is a cruiser of 8,000 tons, protected with 14-inch armor and armed with 4 11-inch Krupp guns mounted *en barbette*. There are a dozen old ironclads fit for port defense. Two deck-protected cruisers, of 4,050 tons, have lately been constructed, and 3 smaller ones are building. A torpedo destroyer, launched in 1892, has a speed of 22 knots. Of torpedo boats, 9 of the first, 15 of the second, and 7 of the third class have been acquired.

**The Armenian Question.**—The dragomans of the British, French, and Russian consulates at Erzerum were selected to act as European commissioners at the inquiry into the killing of Armenians in Sasun, Kurdistan, in August and September, 1894, and the joint commission began its investigation at Mush in January, 1895. At the suggestion of European governments the Governor of Bitlis, Tahsin Pasha, was removed soon after examination of witnesses began.

The Armenians who occupy the fertile valleys in Sasun are accustomed to pay heavy tribute to neighboring Kurdish chiefs, who in return engage to protect them against Kurdish marauders. For some years the villages of the Dalvorig district had refused to pay the Government taxes, on the ground that they could not afford to give more than the Kurds exacted of them. The Governor of Bitlis, learning that Armenian agitators were at work among the peasants, ordered Kurdish irregulars to keep guard over the refractory villages. At the end of May, 1893, Daghmajian, one of the revolutionary agitators, was caught and sent to Constantinople. A few days afterward the Armenians attacked Kurds encamped in the neighborhood, and drove them off. The Turkish governor then placed a guard of troops and Kurds in the disturbed district. The Kurds and the Armenians had been on bad terms for eight years. The Kurds accused the Christians of robbing villages, kidnapping women, and desecrating mosques. The troops quartered on the Armenians of Dalvorig trampled their crops, and in retaliation the Armenians robbed caravans of wheat and plundered the flocks of Kurds. They were ready to fight the Kurds, having now some breechloaders that a gunsmith, sent by the revolutionary party from Russia, had made out of their old flintlocks. The revolutionary funds were provided by the Armenian merchants of Russia and Persia. Daghmajian and Dr. Hampartsum Boagian, who was afterward arrested and sentenced to death in December, 1894, under the name of Murad Effendi, are supposed to have come from Russia to head a revolutionary uprising that they planned to start in 1895 simultaneously in Zeitun, Sasun, and on the Russian and Persian frontiers. The Armenians of Sasun were expected to make an attack on Mush and attempt to surprise the garrison and seize their arms and ammunition. The leaders counted on the intervention of the European powers rather than upon the ability of the Armenians to cope with the Turkish forces. Dr. Hampartsum said at his trial that he went to Dalvorig to teach the Armenians not to sell their daughters in marriage and to stand up for their rights against

the Kurds. After the Dalvorig district of Sasun became a new revolutionary center, Tahsin Pasha, under instructions from Constantinople, placed a garrison of troops in the district, and after the outbreak of 1893 it was practically kept in a state of siege. The Kurdish tribes understood that they might harry and rob the fractious villagers at their will. When a Kurdish tribe seized some cattle in August, 1894, the Kurdish chief who was the protector of the villages helped the Armenians to drive off the marauders. Some excited official telegraphed to Constantinople that the threatened revolution had broken out in Sasun, and the order came back to punish the villages to the last extremity. Zeki Pasha sent Turkish regulars to surround the disturbed district, while the Kurdish irregulars were sent forward with instructions to kill and destroy without mercy. The Kurds, who were under contract to protect the villages, joined the others when the signal for rapine went forth, and all embraced the opportunity for pillage, but had little heart for the slaughter that the Turkish officers thought would be pleasing to the authorities at Constantinople. Therefore Turkish soldiers, assuming the Kurdish dress, went in to encourage and lead in the work of carnage. The Armenians defended themselves as well as they could in their villages, till their ammunition was nearly exhausted, and then concentrated in the crater of Mt. Andok, where they were eventually put to the sword, or fled into the forests or mountains, where they were hunted and cut down. The survivors tell stories of cruelty, rape, and butchery that seem incredible—as how Turkish soldiers eagerly slew pregnant women, because they could thus with one stroke add two to their tale of victims. They relate many tales of Armenian heroism, too, how Shakey, a young widow, led a band of maidens in a leap from a cliff to escape Turkish harems, and how men and women refused, without exception, to save themselves from torture and death by embracing Islamism. When uniformed troops with cannon entered the district the Armenians did not attempt to resist them until they were surrounded in their mountain fastness. More than 40 villages were destroyed. The number of individuals slain is supposed to have been between 3,000 and 5,000. Zeki Pasha reported 1,720 Armenians killed. Abdul Hamid regretted keenly his precipitate order, and is said to have reproved his first secretary, Sureya Pasha, for his haste in forwarding it with such harshness that the agitated official, who suffered from a heart affection, fell dead on the spot.

When the European commissioners first arrived in Mush no Armenian was allowed to communicate with them. Attempts were made to inveigle the Mush Armenians into signing a statement that the reports of the Sasun massacre were pure inventions. The prisoners in Bitlis were offered their freedom if they would sign papers incriminating the imprisoned Armenian notables, and Mr. Haward, the British vice-consul at Van, who first reported the massacre. After the removal of Tahsin Pasha, Avedis Gagosean and two other members of the Armenian Mejlis were released after having been imprisoned seventy-two days without charges,

and 11 who remained in confinement were set free later, but 11 notables had died in prison. The foreign commissioners were now able to discover and indicate to the Turkish commission Armenian witnesses who could throw light on the Sasun horrors. Sentences of death that had been passed by a court-martial at Erzinghian upon 21 Armenians and sentences of imprisonment for life or long terms passed upon 37 others were confirmed in January by the Court of Cassation in Constantinople.

The Armenian National Assembly elected Monsignor Izmirlian, an outspoken champion of Armenian liberties, to be the Patriarch at Constantinople. The Porte at first refused to confirm him unless he would engage to conform his conduct to the wishes of the Government. He steadily refused, and in the end was accepted without pledges, and was enthroned on Jan. 9, 1895. In his address he said that fidelity to the Government should be based upon the conviction that the Armenians would enjoy absolute security for their honor, their lives, and their property. All the Armenian bishops were in prison or exile. The Archbishop of Marash had been sentenced for harboring rebels; the Archbishop of Zeitun was convicted on charges of fortifying a monastery, delivering prisoners from jail, and presiding over a revolutionary committee; the Bishop of Mush was accused of inciting the Armenian population to sedition; and the Bishops of Hadjin, Kemakh, Bulanck, and Adana and the Abbots of Fernuz and Surp-Arakelotz were restrained of their liberty on similar charges. The Bishop of Arabgir, reputed to be an active revolutionary worker, was first removed to Diarbekir, and when he again incited the people he was exiled to Jerusalem. The new patriarch reprimanded the Bishop of Adrianople for signing, at the solicitation of the Ottoman authorities, an address to the Sultan reproaching the disloyalty of the Armenians of Asia. Besides the prelates, 55 priests and deacons and many other leading members of the community were undergoing imprisonment or exile. From the beginning of 1895 the arrests in Constantinople and in Asia became more frequent. It was estimated that nearly 3,000 Armenians were political prisoners in the various provinces.

The investigation of the Sasun affair and the menace of European coercion to secure the execution of Article LXI of the Berlin Treaty caused the Ottoman authorities to relax the severity of some of their repressive measures, though the increased activity of the Armenian agitators compelled the police to be more vigilant than ever. The Huntchagists seized the opportunity to promote their revolutionary schemes by unscrupulous methods. Some of them were supposed to have laid a plot to murder Dr. Edward Riggs and two other American missionaries at Marsovan who had devoted their lives to the education of Armenian youth, merely in order to fasten the blame upon the Turks and provoke the intervention of the United States Government. The revolutionists are reported to have committed inhuman outrages, such as puncturing the flesh of men and women and igniting gunpowder in the wound, that the infuriated Turks might shock the Christian world by the atrocity of their retaliation.

A commission appointed by the Sultan to consider a scheme for administrative reforms in Armenia began its sittings on April 23, in Constantinople, under the presidency of Turkhan Pasha, Governor of Crete. A project of Armenian reforms drawn up by the ambassadors of France, Great Britain, and Russia, was presented to the Sultan on May 11. It was recommended that the names of valis to be appointed should be submitted for the approval of the powers; that the boundaries of the vilayets and their subdivisions be altered so as to make the administrative districts as homogeneous in population as possible; that a gendarmerie be recruited from the Mohammedan and Christian population alike; criminal courts constituted; prison inspection introduced; the collection of taxes intrusted to local officials, and a share retained for local administration; that the farming of tithes and the *corvée* be abolished; and that the Kurdish Hamadieh cavalry should not wear uniforms or carry arms except when exercising or serving with the regular Turkish troops. The reforms were to be carried out under the direction of a high commissioner appointed with the approval of the powers and under the supervision of a permanent Committee of Control sitting at the Sublime Porte, to consist of 3 Mohammedans and 3 Christians. One third of the administrative, judicial, police, and other offices should be Christians. The Christian mutessarifs, kaimakams, and mudirs should be placed over the sanjaks, cazas, and communal circles in which the Christians are most numerous, and should have Mohammedan assistants, while in vilayets, sanjaks, cazas, and nahies in which the governor or mutessarif or kaimakam or mayor is a Mussulman he would have a Christian assistant. As a preliminary to the reforms, the Sultan was expected to amnesty all Armenians convicted of purely political offenses, restore exiles to their homes and property, and indemnify the victims of Sasun.

The Porte replied to the memorandum of the ambassadors on June 3, objecting to the proposed interference of the powers in the appointment of a high commissioner and to the minute and specific form of the reforms demanded, many of which were pronounced impracticable. On June 16, after a new Cabinet had been appointed, a fresh reply was given in which the Ottoman Government accepted the reforms in principle, but requested a discussion of the details, and denied that the Berlin Treaty confers upon the powers the right to demand the guarantees formulated in the scheme.

Djevad Pasha, the Grand Vizier, was dismissed on June 8, and Said Pasha, ex-Grand Vizier, was appointed in his stead. Turkhan Pasha became Minister of Foreign Affairs in Said's place; the other ministers remained. A committee of ministers, composed of Turkhan Pasha, Halil Rifat Pasha, Riza Pasha, Zuhdi Pasha, and Tevfik Pasha, was appointed to devise a scheme of Armenian reforms in connection with the project of the powers. Shakir Pasha was appointed to superintend the application of the reforms that should finally be adopted. On Aug. 1 the Porte made a detailed reply to the powers, proposing to appoint Christian assessors to assist the valis, to inspect and



improve the prisons, to recruit gendarmerie and police from Mohammedans and Christians in proportion to their numbers, and to prevent the Kurds from committing excesses or encroachments. This reply was declared by the ambassadors to be unsatisfactory. On Sept. 7 the Porte offered, as further concessions, to grant to the dragomans of the embassies the privilege of communicating directly with the Turkish Committee of Control, to admit Christian officers to the gendarmerie, to establish a rural constabulary, to allow the mudirs to be elected by the councils of elders, and, while no Christian vali or mutessarif should be appointed, to select the other administrative officers from Mohammedans or Christians in proportion to the population. This did not go far enough to satisfy the British Government, which now began to threaten coercion, but the Russian Government was unwilling to proceed to extreme measures. The Porte complained at Paris and St. Petersburg of the discourteous attitude of Great Britain, declaring that it was derogatory to the Sultan's prestige, but the replies made to this protest gave no encouragement to Turkey. Lord Salisbury went beyond the first demand for a European control over the application of the reforms, suggesting that the three powers should be represented on the permanent Committee of Control, and that the high commissioner charged with the execution of the reforms should be a Christian selected by the powers. The Russian Government declined to support this supplementary demand, and France took the same view as Russia. A British squadron, which had gone to Salonica, was moved on Sept. 28 to Lemnos, at the entrance of the Dardanelles. The attitude of the British Government encouraged the Armenian revolutionists throughout Turkey. Their desperate designs had been shown hitherto chiefly by assassination and terrorism practiced upon their compatriots, who opposed or betrayed them. Garabed, the head of the Protestant community in Marsovan, was murdered on July 1, and the American missionaries were threatened. The American mission school at Tarsus was attacked early in August by a mob of Mussulmans, who maltreated some of the students and threatened the professors. In Constantinople several Armenians suspected of being police spies were murdered at different times. A band of Armenian brigands robbed a Turkish officer near Erzincian. Kurds who plundered Armenian villagers in the Mush district were driven off by the Turkish gendarmerie. In eastern Armenia, especially in Bitlis, Erzerum, and about Lake Van, thousands of rifles were hidden away by the revolutionists. In Constantinople the Armenians prepared for an extensive demonstration, and when the patriarch was asked by the Porte to forbid it, he declared he was powerless to restrain his countrymen. Nearly 3,000 assembled at the cathedral on Sept. 30, and, in spite of the warning of the patriarch, who told them that they were breaking the laws, attempted to march in procession to the Sublime Porte to present a petition. The police broke up the procession and arrested many, but they gathered at another point. There Servet Bey, at the head of a body of gendarmes, commanded them to disperse and leave

their petition with him. They pressed forward nevertheless, and some fired pistols, killing Servet Bey and another officer. In the evening, after the police had driven back the rioters, and again in the following evening, Softas marched through the streets with bludgeons, attacking Armenians, of whom 172 were killed by police and Softas. The Armenians took refuge in the churches, which they would not leave by day or night. Many who were arrested carried revolvers and knives of uniform pattern, showing that the affair was organized by the revolutionary society, while the clubs carried by the Softas were also of one form, indicating that they too, were armed beforehand. Hundreds of Armenians were arrested.

Immediately after the Stamboul riots the Sultan dismissed Said Pasha, and made Kiamil Pasha Grand Vizier on Oct. 2. Said Pasha became Minister of Foreign Affairs. The persistence of the Armenians of Stamboul in remaining in their churches prolonged the excitement and spread alarm in the provinces. The police, therefore, on Oct. 9, drove them out and closed the churches. Sir Philip Currie, the British ambassador, urged on the new Grand Vizier the necessity of promptly accepting the whole scheme of reform. Austria-Hungary, Germany, and Italy joined the other three signatory powers in an identical note demanding provisions for public safety.

The Moslem population in Asia Minor were stirred to fury by stories of the Constantinople riots. Turks, Circassians, Kurds, and Lazes, whether living in the country districts or in towns, hate the Armenians, because they are the successful merchants and farmers of the country, almost the only possessors of wealth and education. When a mob in Trebizond murdered and pillaged the Armenians without restraint on Oct. 8, the imperial soldiery joining in the work, the Moslems of other places easily worked themselves up to the point of attacking the Armenians, whose lands, goods, and money were a tempting booty. In Trebizond the mob began to sack the shops of the Armenians, and when the latter resisted a general massacre followed. The Turkish officials reported that Armenian revolutionists started the riots by firing upon a party of imperial officers. Though the better class of Turks shielded and sheltered the victims, 800 were killed. Villages in the vicinity were burned and pillaged also. On Oct. 9 Moslem villagers killed 45 Armenians at Ak Hissar. On Oct. 11 a massacre occurred at Gumushane, and on Oct. 13 one at Baiburt, in which 1,000 lives were taken by Lazes and Turks; at Albistan 300 persons were killed. On Oct. 21 at Erzincian and in the neighborhood 1,000 persons were slaughtered on Oct. 21. In outbreaks that occurred on Oct. 25 there were 2,500 killed at Diarbekir, 900 at Bitlis, and 450 at Palu, Kurds and Turks combining to murder and pillage, and many regular soldiers taking part. On the same day Circassians and Turks killed 500 Armenians of Kara Hissar.

The Sultan sanctioned the reforms demanded in the note of May 11, and issued an irade to that effect on Oct. 20, but this did not cause the cessation of the massacres, which in the rural districts seemed to have the utter extermination



and in the towns the complete spoliation of the Armenians for their object. A revolutionary party that sprang up among the Turks added to the anarchy and terror. Threats were uttered against the Sultan and against Hassan Pasha, Minister of Marine, who was the chief representative of the Old Turkish party. In the provinces where the Armenians were most numerous, and where they were provided with arms smuggled in from Persia and Russia, they did something to provoke the attacks. At least the Turks accused them of killing a Moslem priest at Erzinglian, of assaulting worshippers in the mosques of Bitlis, and of beginning the disturbance at Baiburt by firing upon the Mussulmans. At Marash and Zeitun also they were said to have attempted a revolu-

tion. The revolution in the metropolis was thrown into confusion, and dishonored notes and drafts accumulated in such numbers at the end of two weeks that on Nov. 2 the Porte, in order to prevent a financial crash, proclaimed a moratorium for four months. To precipitate a panic Armenians had organized a run on the Imperial Ottoman Bank, but that bank and some other strong institutions refused to take advantage of the moratorium.

A commission was appointed for the execution of the reforms in Armenia, of which Shefik Effendi was made president. The six powers renewed their demand for the restoration of order throughout the empire. After the Trebizond massacre the reserves were called out, and now the members of the Redif were summoned



TREBIZOND, SCENE OF AN ARMENIAN MASSACRE.

tion. They were accused of attacking the palace of the Vali, and were certainly prepared to fight in Erzerum, where riots occurred on Oct. 30, in which 800 Armenians lost their lives. There most of the plundering and shooting was done by mutinous Turkish soldiers, though Shakir Pasha and Raouf Pasha, the Vali, and his officers did all that they could to preserve order. The authorities of Diarbekir reported that they had almost succeeded in suppressing the disturbance, and driving out the Kurds who began the massacre, when the Armenians assumed the offensive, throwing bombs and firing at muezins who were calling the Mohammedans to prayers. The Armenians were all armed, and in the fight they killed 1,500 Mussulmans.

The Armenian revolutionists in Constantinople compelled all the merchants and shopkeepers of their nationality to close their places of business. Whoever attempted any dealings was stopped and made to pay a heavy fine into the revolutionary fund. All the commercial busi-

ness of the metropolis was thrown into confusion, and dishonored notes and drafts accumulated in such numbers at the end of two weeks that on Nov. 2 the Porte, in order to prevent a financial crash, proclaimed a moratorium for four months. To precipitate a panic Armenians had organized a run on the Imperial Ottoman Bank, but that bank and some other strong institutions refused to take advantage of the moratorium. A commission was appointed for the execution of the reforms in Armenia, of which Shefik Effendi was made president. The six powers renewed their demand for the restoration of order throughout the empire. After the Trebizond massacre the reserves were called out, and now the members of the Redif were summoned

also. In the remote districts the massacres continued, and in some places Greeks and Maronites were attacked as well as Armenians. The excitement extended into all parts of Anatolia and into Syria and Mesopotamia. The belief gained ground among Moslems that the Sultan had sanctioned the extermination of the Armenians, when Kiamil Pasha, who had been appointed Grand Vizier in deference to the powers, was summarily dismissed on Nov. 6, and sent away to Aleppo, and Halil Rifa Pasha was appointed to succeed him. Tevfik Pasha was made Minister of Foreign Affairs; Said Pasha, President of the Council; Abdurrahman Pasha, Minister of Justice; Memduh Pasha, Minister of the Interior; Gareid Pasha, Minister of Worship; Zuhdi Pasha, Minister of Education; Mehmed Djelal Eddin Raba, Minister of Commerce and Works; Sabri Bey, Minister of Finance; and Aarifi Pasha, a minister without a portfolio. This was regarded as a reactionary Cabinet, formed to please the part of the Mohammedan



population that was opposed to reforms. The Government was so helpless and disorganized that the ministers no longer possessed authority or control. The Sultan distrusted his official advisers and was guided only by the advice of officials of the palace, who played upon his fears and intrigued one against another. Revolution was rife among the Moslems as well as among the Armenians. Spies and informers were everywhere. Citizens suddenly disappeared, and officials were arrested or disgraced without a warning. One officer of the palace presented a memorial to the Sultan pointing out the evils and dangers of his capricious autocracy, but he was dismissed and tried by court-martial as a traitor. Many Softas and religious men were filled with the spirit of revolution, and these were the most dangerous enemies of the men in power, for they plotted the deposition of the Sultan and the cleansing of the public service. The Young Turkey party was not ready for revolution, because it was not agreed on principles and aims. Faithful Mohammedans wanted a new Sultan and a thorough purification of the Government in accordance with the religious laws, and hoped thereby to deliver Turkey from the military, political, and financial domination of Europe. But an equally strong element appealed to Moslems and Christians to join together to limit the autocracy of the Sultan and the powers of provincial administrators and advance toward a representative system of government. Seditious placards threatening the deposition of the Sultan were posted in the capital, and revolutionary circulars were distributed in the streets and houses and even in the Yildiz Kiosk. The police had begun, after the riot of Sept. 30, to deport suspected Armenians to the provinces. After revolutionary ideas manifested themselves among Mohammedans, Softas and others were arrested and sent away without publicity, and many were believed to have been secretly executed.

In the customary speech at Guildhall on Nov. 9 the English Minister of Foreign Affairs, Lord Salisbury, declared that the accord of the powers was complete, and warned the Sultan that he could not look for dissensions to give him an excuse for evading the execution of the promised reforms, but would invite the inevitable doom of persistent misgovernment. Abdul Hamid was so pained at this expression of mistrust that he wrote to the English Premier, saying: "I will execute the reforms. I will keep the document before my eyes to see that every article is put in force. This is my earnest determination, and I give my word of honor."

In the district of Zeitun the Armenians rose in open revolt against the Government. They captured the strong position of Chikur Hissar, compelling a battalion of regular troops to surrender, but were afterward expelled. The Kurds and Turks fell upon the defenseless Armenian communities of the neighboring regions with more relentless fury. On Nov. 6 they killed 2,000 at Arabkir; 250 were slain in Malatia, and massacres occurred at Tokat, Amasia, Gerek, Egin, Zileh, and Selert. On Nov. 10 they butchered 3,000 at Gurun. Soldiers joined in the sacking of the Armenian quarter in Harput on Nov. 11, when 1,000 were killed, also in the

massacre of 1,200 Armenians at Swas on Nov. 12. On Nov. 15 the Kurds invaded Mush, which was saved by the courageous firmness of the Mutessarif, who threw himself in front of their rifles. On the same day the Turks started a riot at Marash, where 125 Armenians were killed. In Harput the houses of American missionaries were looted and buildings burned, and in Marash the schools of the American mission were destroyed. Before the end of the month the Turkish troops had restored order, or the Armenians had been wiped out in most of the places peopled by them in Armenia and Kurdistan. On Nov. 30 the Circassians and Turks killed 1,000 Armenians at Kaisariéh. As many as 2,500 Armenian villages are supposed to have been destroyed and a majority of the male population killed, while in the towns the victims were estimated at 20,000. A great number of women and some of the men embraced Mohammedanism to escape death. There were believed to be 275,000, half of the agricultural population, left starving, half naked, and shelterless, and of these two thirds were women and children. In the towns 75,000 were left destitute. The authorities accused the Armenian revolutionists of beginning the disturbance in Swas, Arabkir, and other places, and reported that a large number of explosive bombs were found in their houses. No revolutionary attempt was made, however, until the Kurds had raided the country districts, driving off the sheep and cattle, and were beginning to pillage the towns. From the beginning of October Mohammedans in all the six provinces of Armenia threatened a general massacre of the Armenians, who sent piteous messages imploring protection to the governors, to the Porte, to the patriarch, and to the foreign embassies. Syrians and other Christians, besides the Gregorian Armenians, were not threatened and were seldom molested, and in every district Mohammedans of the better class endeavored to save the Armenians from destruction. After the ravages had been stopped, the Government fed the survivors in the cities with bread; in the desolated farming districts they lived in caves and temporary huts, with nothing but roots and leaves to stay their hunger. Although order was preserved in the vilayets of the Armenian plateau, except for occasional lawless acts of desperate Armenians, the Kurds of the southern mountains were not subdued nor checked in their depredations. In Van, Bitlis, and Aleppo the devastation of Armenian villages continued till the end of the year. A massacre was reported from Orfah, where Kurdish Hamadiels and Bedouins were said to have slaughtered 3,000 Armenian and Chaldean Christians on Dec. 28 and 29.

The powers could not agree upon any form of active intervention to stop the massacres. The Russian Government was convinced by the reports of its consular officers that the Armenians by their revolutionary conspiracies and attempted uprisings had provoked the vengeance of the Mohammedans. The six powers assembled an enormous fleet of war ships in the waters of the Levant, as if to coerce Turkey, but their concerted action was restricted to each asking permission to have a second vessel at Constantinople, which for three weeks the Sultan refused,

but finally granted on Dec. 10. During this time the situation was complicated by the flight of Said Pasha, who, after declining to accept the Grand Vizierate again, took refuge at the British embassy, and would not obey the summons of the Sultan, as though he feared death or imprisonment. For five days he persisted in his determination to leave the country, but was persuaded on Dec. 9 to return to his residence, having received assurances of his safety from the Sultan.

The Armenian insurgents of Zeitun plundered and burned the villages of Bechau, Gukasdurtet, Ghudji, Oequatur, Kerim, Demerel, Sarikeuchurk, Chukur Hissar, and Keban, and the town of Denderine. They killed 266 Mohammedans. On Nov. 13 a force of Armenians, commanded by a Russian Armenian, captured the fort held by Turkish troops at Zeitun, using dynamite in the attack with great effect. The Turkish military authorities ordered 20,000 troops to advance upon Zeitun from the nearest posts. Amnesty and protection were offered to the rebels if they would surrender their arms and their leaders. The people of Zeitun, who are the most warlike of the Armenians, brigands by profession, had always maintained their independence until the Turkish fort was built in 1878. Notables were sent from Aleppo to persuade the rebels to surrender. The Turks threatened to bombard and destroy the town. On Dec. 24 the besieging forces advanced, and, when the insurgents had answered with defiance a final summons to surrender, attacked the place, but were worsted and compelled to retreat. The combatants, however, subsequently evacuated the town after the women and children had escaped to the mountains. They removed their guns to a higher point that dominated the Turkish position and protected the villages of the valley. The ambassadors intervened to save the Zeitunlis from the destruction that was threatened when the Turks overcame their resistance. By arrangement with the Porte European consular officers were sent to Zeitun to negotiate terms of capitulation.

**Revolt of the Druses.**—On Dec. 1 a Turkish force of 1,500 men encountered a body of Druses of Mejdcl-esh-Shams who were carrying on war with the Circassians settled in their vicinity and with a neighboring Arab tribe. The Arabs had

lured the Druses into an ambuscade set for them by the Circassians, and they were already losing, when the Turkish troops arrived and put them to flight. The Circassians burned 20 of their villages, killing women and children. The Druses lost 150 killed. Their brothers of the Lebanon set out to go to their aid, but were stopped by Turkish troops that were sent in force into the district to put a stop to the fighting, and also to compel the Druses to accept military service and to pay the taxes that were in arrears for sixteen years. There was a severe encounter on Dec. 21, in which the Turkish artillery and infantry swept away the Druses by hundreds.

**Outrage at Jiddah.**—On May 30 William S. Richards, British consul; Abdur Razzak, British vice-consul and consul for Sweden and Norway; C. Brandt, Russian consul; and E. Dorville, French consular secretary, were attacked outside of Jiddah, the port of Mecca, by 8 Bedouins, who killed the British vice-consul and dangerously wounded the others. The ambassadors demanded an indemnity and the punishment of the guilty parties, and the English, French, and Russian governments sent war ships to Jiddah. The Shereef of Mecca and the Vali of the Hedjaz held an inquiry. The Bedouins were angered by the quarantine measures adopted for the Mecca pilgrimage, especially the fencing and guarding of the wells reserved for pilgrims. They destroyed the cholera hospital at Jiddah and expressed general satisfaction at the murderous attack on the consular representatives. The ambassadors demanded that the Bedouins be disarmed, but the Porte knew of no way to do that.

**Revolt in Muscat.**—Insurgent Bedouins under Shaik Syed Sule captured in February the town of Muscat and the palace of the Sultan, who fled to the forts and opened fire upon the town, demolishing many buildings. The Sultan's forces invested the town, but could not recapture it, for the rebels, though numbering only 350 men, were armed with Martini-Henry rifles, while the Sultan's troops, numbering 2,500, had obsolete weapons. The Sultan finally offered a ransom of \$16,000, and the rebels evacuated the place in the middle of March, after first sacking the palace and the shops.

## U

**UNITARIANS.** The "Yearbook of the Unitarian Congregational Churches" for 1896 gives lists of 519 ministers and 455 societies of this denomination in the United States. The number of members is given in the tables of the "Independent" as 68,500. The churches are represented in general bodies by the National Conference of Unitarian and other Christian Churches, which meets every three years; the American Unitarian Association, whose purpose is to promote union, sympathy, and co-operation among liberal Christians, collect and diffuse information, supply missionaries and books, and aid in sustenance of ministers and in Church extension; the church building loan fund; 9 district conferences; 9 State conferences and

associations; local conferences; the National Alliance of Unitarian and other Christian Women, and its local branches; the Unitarian Sunday-school Society and local societies of similar character; and 3 ministerial associations. Unitarian theology is represented in the Divinity School of Harvard University, and the Meadville Theological Seminary, Meadville, Pa., is a Unitarian institution. Four academies are named in the "Yearbook," and numerous Unitarian clubs and special societies.

The British Unitarians have 279 churches in England, 33 in Wales, 8 in Scotland, and 36 in Ireland. They are represented in the British and Foreign Unitarian Association and the National Conference, which meets every three years.



The 60,000 Unitarians in Hungary have more than 100 churches with settled pastors, and 50 or more filial churches, with a bishop, Joseph Ferencz, 8 rural deans, and an ecclesiastical council of 350 members.

Unitarian or Liberal Christian principles are represented in the Protestanten Verein of Germany, the Protestanten Bond of Holland, by a minority of Protestants in France, in the liberal congregations of the Spanish Evangelical Church, by a number of societies and by liberal Christians in the State Church of Sweden, in the Free Christian Association of Switzerland, and at several places in India and in Japan, where considerable missionary work has been done.

The sixteenth triennial Conference of Unitarian and other Christian Churches met in Washington, D. C., Oct. 23. In the absence of the president, Hon. G. F. Hoar, Mr. Dorman B. Eaton, of New York, presided. The following revision of the resolutions on Christian unity was adopted:

*Resolved*, That this Church accepts the religion of Jesus, holding, in accordance with his teaching, that practical religion is summed up in love to God and love to man; and we cordially invite to our working fellowship any who, while differing from us in belief, are in general sympathy with our spirit and our practice.

*Resolved*, That the National Council give the above declaration the widest possible publicity, as a sufficient basis not only for "Christian unity," but also for the religious unity of the world.

A feature of the proceedings was the presentation of the Unitarian position on certain religious and theological questions from the various points of view of the several speakers. The Rev. George Bachelder, having presented in the opening address a survey of the history of the organization, said that Unitarians are not agnostics, but believe in the doctrine that righteousness is salvation, and that all the law is summed up in love to God and love to man. The Rev. Dr. Furness, of Philadelphia, declared that miracles are but violations of natural laws, out of harmony with all known or probable truths, and believed in by no one of education. The Rev. Charles C. Dean, of Harvard Theological School, affirmed that Unitarians who accept part or all of the New Testament stories of the miraculous see in them manifestations of higher laws instead of a breaking through of all laws. Unitarians like to speak of God as the Father revealing himself in the order of beauty of the universe, and believe that in the future life there will open to every soul the highest possibilities for which it is fitted. The Rev. Mary A. Safford interpreted the "doctrine of forgiveness" as not setting aside the law of consequences, but as making us feel that in spite of sin God loves us still. The Rev. William C. Gannett held that God had appeared to man in many lands and many forms, of which the Christian incarnation marked the culmination. Resolutions were adopted declaring the need of the purification of politics, condemning the liquor traffic, and expressing sympathy with the Armenians and invoking the intervention of the powers to secure better Government in Turkey.

The meeting of the British and Foreign Unitarian Association, held in London in May, was

attended by 2 delegates from the United States. The Rev. S. J. Barrows, of Boston, mentioned the curious fact that the American and the British Associations were both founded on the same day of the same year, and spoke of the great number of conspicuous names in literature, science, and Government that have rendered illustrious the seventy years of American Unitarianism. A fraternal resolution was adopted with reference to the Hungarian Unitarians, with whom this association keeps up a friendly intercourse. It is so arranged that a student from Hungary is constantly found in the classes of the Unitarian College at Manchester, and several of the alumni of that institution are engaged in Hungarian pastorates. The institution is contemplated of similar scholarships for Unitarian students from India and Japan. At the home-mission meeting reports were received from the Manchester district, from Wales, and from the Northumberland district. The subject of "The Social Implications of our Faith" was discussed at one of the conferences. A meeting was held in behalf of the Sunday-school Association.

**UNITED BRETHREN CHURCH.** "The United Brethren Yearbook" for 1896 gives statistics of this Church, of which the following is a summary: Number of organized churches, 4,242; of bishops, 5; of itinerant preachers, 1,669; of local preachers, 435; of members, 233,204; of Young People's Christian Union Societies, 1,419, with 56,405 members; of Sunday schools, 3,573, with 35,160 officers and teachers and 246,268 pupils. Amount of contributions: For preachers' salaries, \$569,514; for Church expenses, \$384,339; for support of bishops, \$8,376; for preachers' aid, \$4,207; for general missions, \$46,051; for thank offerings and special contributions, \$8,202; for woman's missions, \$15,162; total for missions, \$69,916; for Church erection, \$6,351; for Sunday-school general fund and Children's Day, \$2,838; for beneficiary education, \$1,594; for colleges, etc., \$18,491; local Sunday-school collections, \$75,821; number of Church houses, 3,223, valued at \$5,197,420; number of parsonages, 612, valued at \$512,040.

The Board of Education had during the year ending April 30, 1895, 40 beneficiaries, to whom aid had been given to the amount of \$2,832, an average of about \$71 to each. The year's receipts of the Educational Beneficiary fund were \$3,864, about half of which was from the repayment of loans by beneficiaries.

The Board of Church Erection received \$4,680, of which \$2,589 were from loans returned and \$2,091 from collections by conferences. The amount loaned to churches was \$3,800. Numerous urgent applications had been received which the board could not grant for want of funds.

The forty-second annual meeting of the Home, Frontier, and Foreign Missionary Society was held at Fort Wayne, Ind., May 10. The total receipts for the year had been \$98,115, and the expenditures were \$874 in excess of this amount. In its foreign work the society had 20 churches with 863 members in Germany and 398 preaching places with 5,638 members in Africa. The addition of a medical department to the Rufus Clark and Wife Training School in Africa and the establishment of a sanitarium at Mount Lei-

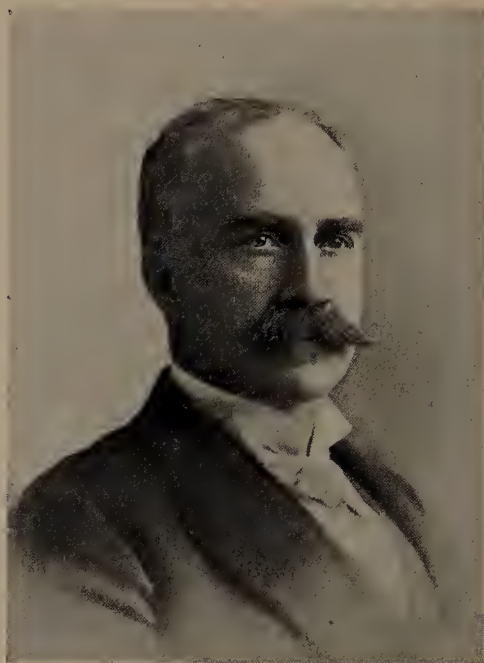
cester, near Freetown, were recommended. The opening of a mission in Japan was decided upon, to which 4 native Japanese educated in the United States have been appointed. The corresponding secretary of the board has been deputed to Japan to superintend the beginning of the mission. The most important feature of the year's work in the home-mission field was the extension of the Church in Tennessee and other parts of the Southern States, where a mission conference had existed in East Tennessee for several years. Two new presiding elders' districts had been formed, more than 20 ministers received, and more than 1,000 members gathered in. Appropriations of \$37,147 were made for the missionary work of the ensuing year.

**UNITED STATES OF AMERICA**, a federal republic of 45 States in North America. The executive power is vested in a President elected for four years by electors equal in each State to the number of its Senators and Representatives in Congress. Candidates for President are nominated in party conventions, and each party presents to the voters a list of electors who will vote for its candidate. The legislative power is vested in the Congress, consisting of a Senate, in which each State is represented by 2 members, elected for six years by the State Legislature, and a House of Representatives, consisting of 356 members, elected for two years by direct vote of the qualified electors of each State, 1 from each Congressional district, and 4 Territorial delegates. The reapportionment based on the census of 1890 gives one Representative to every 173,900 inhabitants. The Vice-President, who on the death or retirement of the President becomes President for the remainder of the term, is *ex officio* the presiding officer of the Senate. The President for the term ending March 4, 1897, is Grover Cleveland, of New York, born March 18, 1837. The Vice-President is Adlai Ewing Stevenson, of Illinois.

The President's Cabinet at the beginning of 1895 was composed as follows: Secretary of State, Walter Q. Gresham, of Indiana; Secretary of the Treasury, John G. Carlisle, of Kentucky; Secretary of War, Daniel S. Lamont, of New York; Secretary of the Interior, Hoke Smith, of Georgia; Secretary of the Navy, Hilary A. Herbert, of Alabama; Postmaster-General, Wilson S. Bissell, of New York; Attorney-General, Richard Olney, of Massachusetts; Secretary of Agriculture, Julius S. Morton, of Nebraska. After the death of Secretary Gresham (May 28) President Cleveland appointed Richard Olney, of Massachusetts, Secretary of State, and called Judson Harmon, of Ohio, into the Cabinet to take Mr. Olney's place as Attorney-General. On the retirement of Mr. Bissell, William L. Wilson, of West Virginia, was appointed to succeed him as Postmaster-General.

**Judson Harmon** was born in Ohio in 1846. He was educated in the Cincinnati schools and in Denison University, at Granville, Ohio, and studied jurisprudence in the Law School at Cincinnati, where he was graduated in 1869. He joined the Democratic party in 1872 with the Republican seceders who supported Horace Greeley for the presidency. In 1876 he was a candidate for the office of judge of the Court of Common Pleas in Cincinnati and he was declared elected, but the Legislature unseated him in favor of Judge Cox, ex-Secretary of the Interior. A few years

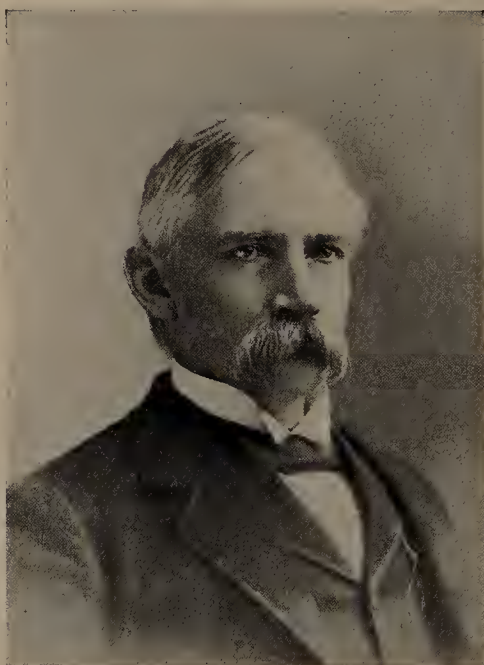
later he was elected judge of the Superior Court, but he soon resigned from the bench in order to resume practice, becoming a member of the firm of Calster, Goldsmith & Hoadly. His services as an advocate were much sought after, and in the profession he has



JUDSON HARMON, ATTORNEY GENERAL.

been esteemed a sound, sagacious lawyer. He was nominated and confirmed as Attorney-General to succeed Mr. Olney, who was advanced to the State Department on the death of Secretary Gresham.

**William Lyne Wilson** was born in Jefferson County, Va., May 3, 1843. He was educated at Columbian



WILLIAM L. WILSON, POSTMASTER-GENERAL.

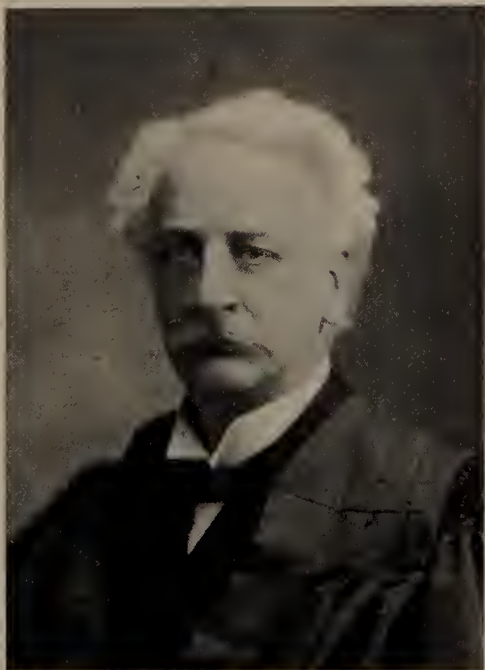
College and at the University of Virginia; served in the Confederate army, and after the war was Professor of Latin in Columbian College for six years.



He studied law at the same time, and when he was admitted to the bar, in 1871, he engaged in practice at Charlestown, W. Va. He was a delegate to the Democratic National Convention in 1880, and was a presidential elector in that year. In 1882 he became President of the University of West Virginia. On being elected as a Democrat to the House of Representatives he resigned that office and took his seat Dec. 1, 1883. As a member of the Ways and Means Committee in 1888 he had much to do with framing the Mills tariff bill, passed in that session, and as chairman of the same committee in 1893 he was the principal author of the tariff bill known popularly by his name. He was nominated and confirmed as Postmaster-General to succeed Hon. Wilson S. Bissell, resigned.

**The Judiciary.**—The Supreme Court of the United States in the beginning of 1895 was composed of Melville W. Fuller, of Illinois, Chief Justice, and the following Associate Justices: Horace Gray, of Massachusetts; Henry D. Brown, of Michigan; George Shiras, Jr., of Pennsylvania; Howell E. Jackson, of Tennessee; Edward D. White, of Louisiana; John M. Harlan, of Kentucky; David J. Brewer, of Kansas; and Stephen J. Field, of California. After the death, on Aug. 8, 1895, of Justice Jackson, the President nominated for the vacancy Rufus W. Peckham, of New York, who was duly confirmed by the Senate.

**Rufus Wheeler Peckham** was born in 1838; the son of an eminent jurist of the same name, who was a justice of the New York Supreme Court, and in 1870-'73 of the



RUFUS W. PECKHAM, JUSTICE OF THE SUPREME COURT.

Court of Appeals. The son was admitted to the bar when very young, and soon became district attorney of Albany County. A few years later he was elected a justice of the Supreme Court of the State of New York. After serving three years in this post he resigned in order to accept the office of judge of the Court of Appeals. This office he still held when the President, on Dec. 3, nominated him to fill the vacancy on the bench of the United States Supreme Court caused by the death of Justice Howell E. Jackson. Judge Peckham had always been an active Democrat, and since he was not identified with the division of the

party that antagonized the Senators from New York, the latter did not oppose his confirmation, as they had that of his brother, Wheeler H. Peckham, when nominated to the seat afterward filled by Justice White.

Until the establishment of the Circuit Court of Appeals by the act of March 3, 1891, the arrears of business before the Supreme Court constantly increased. Since these courts have been in successful operation much relief has been afforded to the Supreme Court, but it will be several years before the docket is cleared. The number of cases docketed at the October term, 1894, was 1,062, of which 1,046 were on the appellate and 16 on the original docket, and 415 were disposed of during the year. The number actually considered by the court was 329, of which 190 were argued orally and 139 were submitted on printed arguments. The following were some of the important cases decided:

**Income-tax Cases.**—The act of Congress, entitled "An Act to reduce taxation, to provide revenue for the Government, and for other purposes" (called the "Wilson bill"), received by the President Aug. 15, 1894, which became a law without his signature Aug. 27, 1894, provided that from and after Jan. 1, 1895, and until Jan. 1, 1900, there should be

levied, collected, and paid annually upon the gains, profits, and income received in the preceding calendar year by every citizen of the United States, whether residing at home or abroad, and every person residing therein, whether said gains, profits, or income be derived from any kind of property, rents, interest, dividends, or salaries, or from any profession, trade, employment, or vocation carried on in the United States or elsewhere, or from any other source whatever, a tax of 2 per centum on the amount so derived over and above \$4,000;

and a like tax was imposed upon the gains, profits, and income from all property owned and of every business, trade, or profession carried on in the United States by persons residing without the United States.

The cases of *Pollock vs. The Farmers' Loan and Trust Company* and *Hyde vs. The Continental Trust Company* involving the constitutionality of this act, were argued in the Supreme Court with the case of *Moore vs. Miller*, March 7, 1895, and succeeding days. The argument attracted more attention than any case in the Supreme Court for years, and was participated in by W. D. Guthrie, Clarence A. Seward, Hon. George F. Edmunds, Joseph H. Choate, James C. Carter, Attorney-General Richard Olney, and Assistant Attorney-General Edward B. Whitney. A decision was rendered April 8, 1895, which held that so much of the act as provided for levying taxes upon rents or income derived from real estate or from the interest on municipal bonds was repugnant to the Constitution and was invalid. A tax on income from real estate was held to be a direct tax within the meaning of the Constitution, which requires that direct taxes shall be apportioned among the several States according to population. As to municipal bonds, it was held that as a municipal corporation is the representative of the State, and one of the instrumentalities of the State government, the property and revenues of municipal corporations are not the subjects of Federal taxation, nor is the income derived from State, county, and municipal securities, since

taxation on the interest therefrom operates on the power to borrow before it is exercised, and has a sensible influence on the contract, and therefore such a tax is a tax on the power of the States and their instrumentalities to borrow money, and consequently repugnant to the Constitution. On the question whether the whole act was unconstitutional, no opinion was then expressed, the court being equally divided, Justice Jackson not being present. Dissenting opinions were delivered by Justices White and Harlan, also one by Justice Field, who held the whole act to be null and void. A petition for a rehearing was allowed, and the cases were again argued before a full bench, and were decided May 20, 1895. The opinion of the court was delivered by Chief-Justice Fuller, declaring the whole act unconstitutional on the ground that the tax was a direct tax, and was not laid by apportionment as required by the Constitution. Justices Harlan, Brown, Jackson, and White each delivered a dissenting opinion, showing that the court had stood 5 to 4 against the law. This decision deprived the Government of an estimated revenue of about \$30,000,000 annually. It overrules a decision of the same court in the case of *Springer vs. United States* (1880), affirming the constitutionality of the previous income-tax law. In that case the income tax was held in a unanimous opinion to be an excise tax instead of a direct tax and constitutional, Congress having power to lay and collect excises, the only restriction upon its power in this regard being that they shall be uniform throughout the United States.

The aggregate amount collected under the previous income-tax laws (the acts of July 1, 1862, and subsequent amendatory acts which expired by limitation Dec. 31, 1871) was \$346,967,338.12. The largest amount collected in any one year was \$72,982,159.03 (1866). No income-tax laws were passed by Congress prior to the civil war.

*Oleomargarine Case.*—The case of *Plumley vs. Massachusetts*, decided Dec. 10, 1894, involved the constitutionality of the statute of Massachusetts which prohibits the sale of oleomargarine made in imitation of yellow butter produced from unadulterated milk or cream, in its application to sales of oleomargarine in original packages brought into Massachusetts from other States. It was held that the prohibition in question did not interfere with the freedom of commerce among the several States, and was not repugnant to the Constitution. A dissenting opinion was delivered by Chief-Justice Fuller, in which Justices Field and Brewer concurred.

*The Sherman Antitrust Act.*—This act was construed in the case of *United States vs. E. C. Knight Company*, which was decided Jan. 21, 1895. The action was brought by the United States in the circuit court for the eastern district of Pennsylvania, to dissolve what is known as the "Sugar Trust." It was unsuccessful in that court, and again in the Circuit Court of Appeals, and the United States Supreme Court affirmed the decisions of those courts, dismissing the suit. The court held that the act of Congress of July 2, 1890, entitled "An Act to protect trade and commerce against unlawful restraints and monopolies," known as "the Sherman Anti-

trust act"—which denounces "every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several States or with foreign nations," and prescribes punishments and remedies—has no application to such a combination or monopoly as the Sugar Trust, because that combination or monopoly is engaged primarily in manufacturing, and only secondarily in selling; that a combination to control the manufacturing of a particular article can not be a combination in restraint of interstate commerce such as is within the power of Congress to regulate, but is merely a matter of domestic concern, subject to the police power of the States. Justice Harlan dissented.

*The Debs Case.*—This case, which was decided May 27, 1895, came before the court on a writ of *habeas corpus*. The sentences of imprisonment in the county jail for terms varying from three to six months, imposed on Eugene V. Debs and three other persons for contempt in disobeying the orders of injunction issued by the circuit court at Chicago during the great railroad strike in July, 1894, were upheld, and principles of great importance were established. The jurisdiction of the courts to issue and enforce injunctions against interference with interstate commerce and the passage of the mails was fully maintained. The circuit court having full jurisdiction in the case, it was held that its action was not open to review by the Supreme Court on *habeas corpus*.

*Chinese Exclusion.*—In the case of *Lem-Moon-Sing vs. United States*, decided May 27, 1895, the court affirmed the decision of the court below in denying a writ of *habeas corpus* applied for by a Chinese merchant in San Francisco, who made a visit to his native land, and was denied admission into the United States on his return. The constitutionality of the Chinese exclusion act was reaffirmed, and it was held that, under the act of Aug. 18, 1894, the courts had no authority to review the decision of the executive officers of the Government in excluding, under any law or treaty, aliens from admission into this country.

*Foreign Judgments.*—*Hilton vs. Guyot* involved important questions relating to the effect of foreign judgments. The action was on a judgment recovered in a French court by French citizens against the firm of A. T. Stewart & Co. It was held that foreign judgments were *prima facie* evidence and not conclusive when sued upon in the courts of this country. Chief-Justice Fuller and Justices Harlan, Brewer, and Jackson dissented, holding that the doctrine of *res adjudicata* applied to foreign judgments as well as domestic.

*The Army.*—The United States army, which is recruited by voluntary enlistment only, consists of 25 regiments of infantry, in 1895 numbering 877 officers and 13,125 men; 10 cavalry regiments, numbering 432 officers and 6,170 men; 5 regiments of artillery, numbering 280 officers and 4,025 men; and 537 officers and 2,386 men in the Engineer Corps, the ordnance department, hospital service, signal service, Military Academy, with Indian scouts, administrative details, etc.; total, 2,126 officers and 25,706 men. (See NATIONAL GUARD, page 504.)



**The Navy.**—The United States navy contains 6 battle ships, all of the first class. The 2 oldest ("Maine" and "Texas"), launched in 1890 and 1892, displace respectively 6,648 and 6,300 tons, being protected each with 12-inch armor, and making 17 knots an hour, with engines of 9,000 horse power for the heavier vessel, which carries 4 10-inch guns in 2 turrets, with 6 6-inch and 8 6-pounder quick-firing guns; with 7 torpedo ejectors, and 8,000 horse power for the other, which is armed with 2 12-inch guns, one in each turret, and 6 6-inch guns and 12 quick-firing 6-pounders, and has 4 torpedo tubes. Three sister ships ("Oregon," "Massachusetts," and "Indiana"), of 10,200 tons, launched in 1892 and 1893, have 18 inches of armor plating and engines of 9,000 horse power, developing a speed of 15 knots, and carry their 4 13-inch guns in 2 main turrets and 8 8-inch guns mounted in pairs in smaller turrets, with a minor armament of 4 6-inch and 20 6-pounder quick-firing guns and 7 torpedo ejectors. The newest ("Iowa") has a displacement of 11,296 tons and 15 inches of armor, with 11,000-horse-power engines, designed for a speed of 16 knots, and an armament disposed like that of the others, consisting of 4 12-inch, 8 8-inch, 6 4-inch, and 20 quick-firing guns, with 7 torpedo ejectors. Two armored cruisers ("New York" and "Brooklyn"), of 8,200 and 9,270 tons, with side armor 10 and 8 inches thick respectively, besides steel decks, are designed for speed, the one 21 knots, with engines of 17,400 horse power, and the other, with 16,000 horse power, 20 knots, and carry 8-inch guns, 2 forward and 2 aft in inclined turrets, and 1 on either beam in the former, while the other will have 2 additional heavy guns, with a subsidiary armament of 12 4-inch and 12 smaller quick firers on the one, and 12 5-inch and 16 smaller ones on the other. Two commerce destroyers ("Columbia" and "Minneapolis"), of 7,375 tons, carrying 1 8-inch gun, with 2 6-inch, 8 4-inch, and 16 smaller quick firers, have made 22.8 and 23 knots respectively, with engines of 20,000 horse power, and can carry coal for a cruising radius of 26,000 miles. A smaller deck-protected cruiser ("Olympia"), of 5,870 tons, has a speed of 20 knots and an armament consisting of 4 8-inch breechloaders and 10 5-inch and 20 smaller quick firers. A coast-defense armor clad, with 14-inch plates ("Monterey"), of 4,000 tons, has a speed of 17 knots, and is armed with 2 12-inch and 2 10-inch breechloaders and 10 rapid-fire guns. An older vessel, ("Monadnock"), with 11½ inches of armor, classed as a monitor, though having a speed of 14½ knots, carries 4 10-inch guns in 2 turrets. The heaviest of the monitors ("Puritan"), having 14-inch plates and a displacement of 6,160 tons, has 4 12-inch breechloaders mounted in 2 turrets and a secondary armament of 8 quick-firing guns. The next in strength ("Miantonomah," "Amphitrite," and "Terror") have the same armor as the "Monadnock" and a similar armament. A powerful ram, with a speed of 17 knots ("Katahdin"), carries only 4 rapid-fire guns, but is capable of being entirely submerged, except the turtle-back deck, when attacking. Of the old type of monitors, built during the war of secession, there are 13 ("Ajax," "Canonicus," "Catskill," "Co-

manche," "Jason," "Lehigh," "Manhattan," "Mahopac," "Montauk," "Nahant," "Nantucket," "Passaic," "Wyandotte"), each armed with 2 15-inch smooth-bore cañon in a single turret. Of the second-class cruisers, 3 ("Newark," "Philadelphia," and "San Francisco"), having a displacement of between 4,000 and 5,000 tons, can make over 19 knots, and are armed with 12 6-inch breechloaders, 4 6-pounder quick firers, and smaller pieces. Two older ones of similar dimensions ("Baltimore" and "Chicago"), one having a speed of 20 knots and the other 15, carry 4 8-inch breechloaders. There are 5 protected cruisers of 3,000 tons or over, of which the latest type ("Raleigh" and "Cincinnati") are armed with 10 5-inch and 12 smaller rapid-firing guns, and have a speed of 19 knots; the older ones ("Atlanta," "Boston," and "Charleston"), making 15 to 18 knots, carry 6 6-inch guns, the "Charleston" also 2 8-inch breechloading guns, in their main battery. Three smaller cruisers ("Detroit," "Montgomery," and "Marblehead") speed 18 knots and carry 2 6-inch, 8 5-inch, and 8 smaller guns. There is a dynamite cruiser ("Vesuvius"), engineered for over 21 knots and armed with 3 15-inch dynamite guns. Of the new steel gunboats, the newest ("Machias," "Castine," "Helena," "Nashville," and "Wilmington") carry 8 4-inch rapid-fire guns and an effective auxiliary armament, while the earlier ones ("Bennington," "Concord," "Yorktown," and "Petrel") are armed with 6-inch breechloading cannon, each carrying 6 except the last. Of torpedo boats, there are 6, each provided with 3 18-inch Whitehead torpedo tubes, the latest having a speed of 24½ knots.

**Commerce.**—The total value of the imports of merchandise during the year ending June 30, 1895, was \$731,969,965, compared with \$654,994,622 in the preceding year. The value of the imports subject to duty was \$368,736,170, compared with \$275,199,086; of articles free of duty, \$363,233,795, compared with \$379,795,536. The value of imports brought in cars and other land vehicles was \$33,201,988; brought in American vessels, \$108,229,615; brought in foreign vessels, \$590,538,362.

The values of the principal articles or classes of merchandise imported in the fiscal year 1895 were: Animals, \$2,737,078; art works, \$3,843,097; books, maps, etc., \$3,331,637; bristles (1,301,494 pounds), \$1,244,151; breadstuffs, \$2,859,813; chemicals, drugs, dyes, and medicine, \$45,567,609, of which \$30,340,543 were free of duty and \$15,227,066 dutiable; clocks and watches, \$1,319,521; bituminous coal (1,260,109 tons), \$3,848,365; coffee (652,208,975 pounds), \$96,130,717; raw cotton, \$4,714,375; cotton manufactures, \$33,296,633; china and earthenware, \$8,956,106; fish, \$4,756,164; flax, hemp, and jute, and manufactures of, \$39,573,075; fruits and nuts, \$17,239,923; furs, \$10,322,157; glass and glassware, \$6,627,473; materials for hats and bonnets, \$2,766,568; hides and skins, \$26,122,942; hops (3,133,664 pounds), \$599,744; India rubber and gutta percha, and manufactures of, \$18,925,595; iron and steel, and manufactures of, \$23,048,515; jewelry and gold and silver articles, \$648,610; lead and manufactures of, \$2,488,584; leather and leather manufac-

tures, \$13,819,038; spirituous and malt liquors, \$4,245,586; molasses (15,075,879 gallons), \$1,295,146; musical instruments, \$918,253; paints and colors, \$1,246,924; paper and manufactures of, \$2,863,533; paper stock, \$3,786,026; precious stones and imitations of, including diamonds, uncut, \$7,426,178; salt, \$680,802; silk manufactures, \$31,206,002; raw silk, \$22,626,056; spices, \$2,640,235; sugar (3,574,510,454 pounds), \$76,462,836; tea (97,253,458 pounds), \$13,171,379; tin (47,631,783 pounds), \$6,787,424; tobacco, leaf and manufactured, \$16,888,612; toys, \$1,889,628; wines, \$7,183,537; wood and wood manufactures, \$17,814,119; wool, free of duty, \$23,996,224; wool, dutiable, \$1,560,197; woollen manufactures, \$38,539,890; all other articles, \$68,418,208.

The total value of exports was \$807,538,165. The value of the domestic exports was \$793,392,599. The domestic exports carried in ears and other land vehicles were \$45,353,469; in American vessels, \$60,523,877; in foreign vessels, \$687,515,253.

The principal exports of domestic produce or manufacture and their values in 1895 were: Agricultural implements, \$5,413,075; animals, \$35,754,045; books, maps, engravings, and other printed matter, \$2,316,217; corn (27,691,137 bushels), \$14,640,767; wheat (76,102,704 bushels), \$43,805,663; wheat flour (15,268,822 barrels), \$51,651,928; all other breadstuffs, \$4,496,412; railroad cars, street cars, and carriages, \$2,382,714; chemicals, drugs, dyes, and medicines, \$8,189,142; clocks and watches, \$1,204,005; coal, anthracite (1,397,204 tons), \$5,918,229; coal, bituminous (2,374,988 tons), \$5,180,398; copper ore (10,281 tons), \$1,104,515; copper, manufactures of, \$14,468,703; cotton, raw (3,517,433,109 pounds), \$204,900,990; fish, \$4,501,830; flax, hemp, and jute manufactures, \$1,722,559; apples (818,711 barrels), \$1,954,318; all other fruits and nuts, \$3,017,473; furs and fur skins, \$3,923,130; hides and skins, \$2,310,323; hops (17,523,388 pounds), \$1,872,597; iron and steel manufactures, \$32,000,989; leather and leather manufactures, \$15,614,407; musical instruments, \$1,115,727; naval stores (rosin, tar, turpentine, pitch, and spirits of turpentine), \$7,419,773; oil cake and meal (733,652,495 pounds), \$7,165,587; animal oils (1,467,156 gallons), \$578,445; mineral oil, crude (111,285,264 gallons), \$5,161,710; mineral oil, refined or manufactured, \$41,498,372; vegetable oils, \$7,342,112; paper and paper manufactures, \$2,185,257; paraffin and paraffin wax (95,076,165 pounds), \$3,569,614; beef products (344,600,048 pounds), \$27,478,651; hog products (1,092,024,847 pounds), \$89,754,428; oleomargarine (88,199,775 pounds), \$8,099,482; other meat products, \$1,665,961; dairy products, \$6,632,857; clover seed (22,900,672 pounds), \$2,124,997; other seeds, \$724,148; distilled spirits (3,271,764 proof gallons), \$2,991,686; molasses and sirup (9,148,711 gallons), \$850,400; refined sugar (8,833,522 pounds), \$406,924; tobacco, unmanufactured (300,991,930 pounds), \$25,798,968; tobacco, manufactured, \$3,953,165; vegetables, \$1,543,458; wood and wood manufactures, \$27,115,907; other articles, \$34,154,960.

The imports of gold bullion were \$11,927,933; of American gold coin, \$10,752,673; of foreign gold coin, \$12,466,128; of silver bullion, \$3,480,-

885; of American silver coin, \$100,932; of foreign silver coin, \$5,970,703; total imports of precious metals, \$44,699,254, compared with \$85,735,671 in 1894. The domestic exports of gold bullion were \$793,656; of gold coin, \$55,096,639; of silver bullion, \$40,032,615; of silver coin, \$40,609; total precious metals, \$95,963,517, compared with \$103,556,441 in 1894. The foreign exports of specie in 1895 amounted to \$17,394,983.

**Industry and Agriculture.**—The following table gives the acreage, yield, and value of the principal farm crops of the United States for 1894, the quantity of tobacco being given in pounds, hay in tons, and the other crops in bushels:

CROP.	Acres.	Quantity.	Value.
Wheat.....	34,882,436	460,267,416	\$225,902,025
Corn.....	62,582,269	1,212,770,052	554,719,162
Oats.....	27,023,553	662,086,928	214,816,920
Rye.....	1,944,780	26,727,615	13,394,470
Barley.....	3,170,602	61,400,465	27,184,127
Buckwheat.....	789,232	12,668,200	7,040,238
Tobacco.....	523,103	406,678,385	27,760,739
Potatoes.....	2,737,973	170,787,338	91,526,737
Hay.....	45,321,272	54,574,408	468,578,321

The production of malt liquors in 1894 was estimated at 1,016,440,000 gallons; of fermented liquors, 33,362,373 gallons; of rye whisky, 10,026,544 gallons; of bourbon whisky, 15,518,349 gallons; of aleohol, 10,570,070 gallons; of rum, 1,864,595 gallons; of gin, 1,287,977 gallons; of pure neutral spirits, 35,377,115 gallons; of brandy, grape, apple, and peach, 2,948,158 gallons; total spirits 99,153,650 gallons.

The number of sheep in 1894 was 45,048,017. The wool product in 1894 was 298,000,000 pounds, and the consumption of wool 346,654,000 pounds. The number of hogs killed during the year was 21,619,645. The production of tobacco in 1894 was 406,678,385 pounds, valued at \$27,760,739. The cotton crop in 1895 was 5,073,531 bales, compared with 4,811,265 bales in 1894. The consumption of the United States was 3,219,000 bales. The product of cane sugar was 611,156,922; of beet sugar, 45,191,296; of maple, 7,633,036 pounds.

The quantity of pig iron produced in 1894 was 6,657,388 long tons, value \$71,966,364; of copper, 353,504,314 pounds, value \$33,540,489; of gold, 1,923,619 ounces, value \$39,761,205; of silver, 49,846,875 ounces, value \$31,403,531; of zinc spelter, 74,004 tons, value \$5,209,882; of lead, 160,867 tons, value \$10,585,048; of quicksilver, 30,440 flasks of 76½ pounds, value \$1,095,840; of aluminum, 220 tons, value \$490,560; of antimony, 205 tons, value \$39,200; of bituminous coal, 117,950,348 tons, value \$103,842,467; of anthracite coal, 52,010,433 tons, value \$80,879,404; of coke, 8,495,295 tons, value \$12,654,558; of crude petroleum, 48,527,336 barrels of 42 gallons, value \$40,762,962; value of natural gas, \$11,000,000; quantity of evaporated salt, 9,161,053 barrels of 280 pounds, value \$4,608,275; of rock salt, 2,341,922 barrels, value \$788,681; of refractory clay, 3,375,738 tons, value \$4,050,885; of kaolin, 24,552 tons, value \$185,169; of hydraulic cement, 7,895,259 barrels of 300 pounds, value \$4,397,407; of Portland cement, 738,196 barrels, value \$1,080,644; of lime,



56,750,000 barrels of 200 pounds, value \$28,375,000; of gypsum, 287,517 tons, value \$849,925; of copper sulphate, 60,000,000 pounds, value \$2,016,000; of rock phosphate, 952,155 long tons, value \$2,856,465; of white lead, 87,242 tons, value \$8,445,174; of oxide of zinc, 22,814 tons, value \$1,711,275; value of roofing slate, \$2,551,259; of marble, \$2,177,280; of precious stones, \$250,000. The total value of metals extracted was \$194,092,119 and of all mineral products \$553,352,996. The products of manufacture of all kinds in 1890 were valued at \$9,372,437,283; and the products of fisheries were valued at \$45,312,818.

**Railroads.**—The total mileage of the railroads of the United States in 1895 was 178,054 miles, or, including side tracks and sidings, 232,755 miles. The railroads operated, exclusive of elevated railroads, had a total length of 175,444 miles. The number of passengers carried during the year was 583,248,007; tons of freight, 675,129,747. The gross earnings were \$1,080,305,015, of which \$288,693,073 came from passengers, \$700,477,409 from freight, and \$91,134,533 from miscellaneous sources. The net revenue was \$322,539,276 from traffic receipts, the operating expenses having been \$757,765,739. Other receipts, including rentals, made the total available revenue \$419,016,719. The payments from revenue amounted to \$429,484,953, of which \$237,620,367 were interest on bonds, \$60,900,454 rentals and tolls, \$7,464,971 interest on floating liabilities, \$38,220,492 miscellaneous expenditures, and \$85,278,669 dividends on stock. The total liabilities amounted to \$11,455,220,006, including \$5,027,604,717 of capital stock, \$5,605,775,764 of bonded indebtedness, \$382,927,834 of unfunded debts, and \$438,911,691 of current accounts. The total assets were estimated at \$11,808,425,973, including \$9,693,141,387 cost value of railroads and equipment, \$238,306,300 of real estate, stocks, and other investments, and \$225,612,088 of current accounts.

**Shipping.**—The vessels under the American flag on June 30, 1895, numbered 23,240, of 4,635,960 tons, of which 1,193, of 822,347 tons, were engaged in foreign commerce; 20,382, of 3,728,714 tons, in domestic commerce; 67, of 15,839 tons, in whaling; and 1,598, of 69,060 tons, in cod and mackerel fisheries. There were built and registered during the year preceding 248 steam vessels, of 69,754 tons, and 397 sailing vessels, of 34,900 tons.

**Immigration.**—The total number of immigrants that arrived during the year ending June 30, 1895, was 279,948, compared with 314,467 in 1894, 502,467 in 1893, 623,084 in 1892, and 560,319 in 1891. The occupations of the immigrants arriving in 1894 were reported as follows: Laborers, 59,575; servants, 28,763; farmers, 16,452; tailors, 3,184; carpenters, 2,934; miners, 2,505; shoemakers, 2,284; clerks, 2,222; professional, 1,738; total skilled laborers, 33,926; miscellaneous, 116,187. Of the immigrants arriving in 1895 there came 219,006 through New York, 25,862 through Philadelphia, and 20,472 through Boston.

**Pensions.**—The number of pensioners on the rolls on June 30, 1895, was 967,043, drawing \$139,053,892 in pensions, besides 3,481 living in foreign countries, drawing \$695,353. There were

dropped from the rolls during the year 42,411, of whom 27,816 died. Of the 970,524 remaining 12 were widows and daughters of Revolutionary soldiers, 352,453 army invalid pensioners, 100,220 army widows and minor children, 2,431 navy widows and minors, 21 survivors of the War of 1812, 3,826 widows of soldiers of the War of 1812, 12,586 survivors of the Mexican War, 7,868 widows of soldiers of the Mexican War, 3,012 survivors of the Indian wars before 1842, 3,911 widows of survivors of Indian wars, 499 army nurses, and 365,118 army invalid pensioners, army widows, and minor children, 12,997 navy invalids, and 5,104 navy widows and minor children pensioned under the act of June 27, 1890. The survivors and widows of the War of 1812 received \$545,506; of the Indian wars, \$777,527; of the Mexican War, \$2,235,723.

**Public Lands.**—During the fiscal year 1895 the homestead entries embraced 5,009,491 acres, and entries under the timber-culture act 3,589 acres. The area of the public lands was estimated at 47,468,800 acres. There remained unsurveyed 772,580,354 acres, including Indian reservations, private land claims in Arizona, New Mexico, Colorado, and California, railroad, swamp, and school grants, and unsurveyed lakes, rivers, and mountain areas. The total area vacant and subject to entry on June 30, 1895, including waste lands, was 599,083,495 acres, of which 313,837,888 were in the surveyed areas and 285,245,607 were unsurveyed.

**The Bering Sea Seal Fisheries.**—Regulations governing seal-fishing for the season of 1895 were agreed upon by the governments of Great Britain and the United States on Jan. 18. Every vessel employed in seal fishing was required to have a special license, to be given only on the production of satisfactory evidence that the hunters engaged were skilled in the use of the weapons used; the sealing vessels must fly a special flag; any vessel crossing the area of the award during the close season could have its hunting outfit sealed up to protect it against detention; also, shotguns used outside could be sealed before entering Bering Sea. On Feb. 18 the President issued the annual proclamation forbidding the killing of fur-bearing animals in Alaska or the waters thereof under penalty of a fine of not less than \$200 nor more than \$1,000, or imprisonment not exceeding six months, or both. Congress failed to appropriate \$425,000, offered by Secretary Gresham in satisfaction of the claims of Canadian sealing vessels seized unlawfully by the United States authorities, which claims were figured at \$549,169, after Sir Julian Pauncefoot in behalf of the British subjects aggrieved had, on Feb. 19, 1895, accepted the offer. President Cleveland, in his annual message, urged that the payment be sanctioned, or that the claims be arbitrated in accordance with an agreement that the respective governments had entered into. The depletion of the seal herd continued unabated during 1895, owing to the insufficiency of the restrictions imposed by the Paris tribunal—viz., a forbidden zone of 60 miles' radius around the Pribyloff Islands and a close season in Bering Sea from May 1 to Aug. 1; also to the ineffective police, Great Britain having only 2 vessels patrolling Bering Sea in 1895.

**UNITED STATES, FINANCES OF THE.**  
The financial operations of the National Government for the fiscal year ending June 30, 1895, though more satisfactory than those of the previous year, still resulted in an excess of ordinary expenditures above ordinary receipts of \$42,805,-223. The receipts from customs for 1895 were more than \$20,000,000 greater than in 1894, but those from internal revenue were \$3,500,000 less. The receipts from other sources remained substantially unchanged; the net aggregate of all receipts showing an increase of \$17,570,715.

The following tables show the principal items of receipts and expenditures of the National Government for the two years in question :

RECEIPTS, INCLUDING POSTAL SERVICE.

SOURCE.	YEAR ENDING JUNE 30,	
	1895.	1894.
Internal revenue .....	\$142,421,672	\$147,111,233
Postal service .....	76,933,128	75,080,479
Customs .....	152,158,617	131,818,581
Sales of public lands .....	1,103,347	1,673,637
Tax on circulation of national banks .....	1,712,551	1,610,867
Repayment of interest by Pacific railroads .....	982,411	926,420
Sinking fund for Pacific railways .....	610,082	1,916,314
Customs fees, fines, penalties, and forfeitures .....	640,966	632,041
Fees, consular, letters patents, and lands .....	2,655,299	2,765,699
Proceeds of sales of Government property, except land .....	173,124	201,971
Profit on coinage .....	1,640,580	870,017
Revenues, District of Columbia .....	3,658,048	3,745,423
Immigrant fund .....	305,225	214,142
Miscellaneous .....	4,323,153	4,185,724
Total ordinary .....	\$390,373,202	\$372,802,498
Premiums, public debt .....	11,339,345	8,633,296
Principal, public debt .....	395,787,206	417,651,223
Total gross .....	\$797,499,754	\$799,087,017

EXPENDITURES, INCLUDING POSTAL SERVICE.

OBJECT.	YEAR ENDING JUNE 30,	
	1895.	1894.
Congress .....	\$7,639,167	\$7,814,781
Executive .....	11,716,002	11,736,228
Judiciary .....	8,277,029	6,008,948
Postal service .....	76,933,128	75,080,479
Deficiency in postal revenue .....	11,016,542	3,250,000
Foreign intercourse .....	1,703,363	1,702,307
Improving rivers and harbors .....	19,897,553	19,887,362
Other expenses, military establishment .....	31,907,206	34,630,568
Constructing new war vessels .....	13,182,134	16,199,259
Other expenses, naval establishment .....	15,615,662	15,502,033
Indians .....	9,939,754	10,293,432
Pensions .....	141,395,229	141,177,285
Constructing public buildings, including sites .....	3,599,614	3,320,840
District of Columbia .....	6,176,891	5,742,370
Interest on public debt .....	30,973,030	27,841,406
Bounty on sugar .....	966,154	12,100,209
Life-saving service .....	1,334,018	1,237,719
Mint establishment .....	853,113	1,114,854
Revenue-cutter service .....	929,387	993,907
Engraving and printing .....	1,146,552	1,186,924
Lighthouse establishment .....	2,763,243	3,062,117
Collecting customs revenue .....	6,808,269	6,861,433
Assessing and collecting internal revenue .....	3,762,682	3,815,733
Miscellaneous .....	24,537,204	26,445,514
Total ordinary .....	\$433,173,426	\$442,605,758
Public debt, principal .....	354,276,859	331,333,272
Total gross .....	\$787,455,285	\$773,939,030

The expenditures for 1895 were \$9,427,332 less than for the previous year. The decrease arose mainly from a great reduction in payments on account of the sugar bounty and a considerable reduction in the expenditures for constructing new war vessels and for general expenses military establishment.

In addition to the ordinary revenue, as shown in the table, the cash in the Treasury was augmented during the year by the receipt of \$58,-538,500 on account of the sale of \$50,000,-000 5-per-cent. bonds (under the act of Jan. 14, 1875); also \$65,116,245 from the issue of \$62,315,400 4-per-cents. for gold purchased, and \$2,470 4-per-cents. issued in liquidation of accrued interest on refunding certificates—in all, \$123,657,215.

Excepting a comparatively small amount of deposits held in national bank depositaries upon ample security of United States bonds, the Government holds and disburses its own revenues. It also holds in trust a reserve of gold and silver coin and bullion to meet the redemption of its paper issues, a fund to redeem certain national bank notes and the deposits of public disbursing officers, subject only to the check of the respective officers; the whole aggregating, on Dec. 31, 1895, the sum of \$787,578,447, equivalent to nearly half of the monetary circulation of the country. Of this amount, less than \$15,000,000 was in national bank depositaries, and of the entire amount only \$178,027,201 was to the credit of the United States Treasurer and subject to his official checks.

The character of the assets held and the several accounts to which the moneys were credited at the beginning and end of the last fiscal year will be seen by the following table :

ITEMS.	Dec. 31, 1895.	Dec. 31, 1894.
<i>Assets :</i>		
Gold coin or bullion .....	\$113,198,707	\$139,606,354
Silver dollars or bullion .....	488,696,234	489,551,320
United States notes .....	115,325,143	81,919,158
Treasury notes (1890) .....	22,044,511	23,369,950
National bank notes .....	7,063,137	4,759,972
Balances in national bank depositaries .....	14,271,280	15,031,275
Gold certificates .....	163,450	58,960
Silver certificates .....	9,625,856	5,846,720
Bonds and interest, checks paid .....	32,079	12,248
Currency certificates (1872) .....	2,345,000	1,960,000
Minor coins and fractional notes .....	1,043,729	1,104,197
Subsidiary silver coins .....	12,764,321	14,438,636
Total .....	\$787,578,447	\$732,754,290
<i>Liabilities :</i>		
Gold certificates .....	\$50,099,889	\$53,420,369
Silver certificates .....	345,702,504	336,924,504
Currency certificates (1872) .....	34,450,000	48,965,000
Treasury notes (1890) .....	137,771,280	150,823,731
Redemption national bank notes .....	7,335,379	7,419,539
Public disbursing officers .....	30,858,163	28,463,514
Outstanding checks or drafts .....	2,334,026	3,399,503
General Treasury balance .....	173,027,201	153,337,580
Total .....	\$787,578,447	\$732,754,290

Of the general Treasury balance Dec. 31, 1895, \$63,262,268 was represented by gold coin available for redemption of United States notes; Dec. 31, 1894, \$86,244,455 was available for like purpose.

The debt of the United States is represented by obligations either with or without reserve. Of the debt without reserve, there has been an



increase during the last calendar year of \$84,066,363, arising mainly from an issue of \$62,315,400 4-per-cent. loan of 1925, an increase of \$22,982,177 in United States notes having no reserve, and \$6,875,000 of the 5-per-cents. of 1904, and a reduction of \$6,955,716 in the balance due the national bank redemption account.

The items of debt with no reserve for 1895 and 1894 will be seen in the following table:

CHARACTER OF OBLIGATION.	OUTSTANDING, DEC. 31,	
	1895.	1894.
Funded loan of 1891, 4½ per cent. continued at 2 per cent.....	\$25,364,500	\$25,364,500
Funded loan of 1907, 4 per cent.....	559,631,750	559,622,150
Refunding certificates, 4 per cent.....	50,310	56,480
Loan of 1904, 5 per cent.....	100,000,000	94,125,000
Loan of 1925, 4 per cent.....	62,315,400	.....
Old loans matured.....	1,674,510	1,825,800
Old demand notes.....	54,847	54,847
U. S. notes (greenbacks).....	283,418,748	260,436,571
National bank redemption account.....	22,659,734	29,615,450
Fractional notes.....	6,893,394	6,896,032
Total.....	\$1,062,063,193	\$977,996,830

Of the debt outstanding having a specific reserve, dollar for dollar, there was a decrease during the calendar year in the amount of United States notes of \$22,982,177, but there was a corresponding increase in the amount of these notes having no reserve. There was also a decrease in Treasury notes of 1890 of \$13,052,444 and an increase in silver certificates of \$8,778,000. The following table shows the items:

CHARACTER OF OBLIGATION.	OUTSTANDING, DEC. 31,	
	1895.	1894.
U. S. notes (greenbacks).....	\$63,262,268	\$86,244,445
Treasury notes (1890).....	137,771,280	150,823,731
Currency certificates (1872).....	34,450,000	48,965,000
Gold certificates.....	50,099,889	53,420,869
Silver certificates.....	345,702,504	336,924,504
Total.....	\$631,285,941	\$676,878,549

The gold and silver coinage is executed by the mints at Philadelphia, San Francisco, and New Orleans, while the minor coinage is confined by law to the mint at Philadelphia. There was a reduction in the value of the gold coinage for the fiscal year ending June 30, 1895, over that of the previous year of \$53,541,437; but there was meanwhile an increase in that of the silver coinage of \$3,069,480.

There is no legal limit to the deposits of gold that the mints can receive for coinage; but those institutions have no authority to receive from the public deposits of silver, except such as are purchased by the Treasury at market rate for subsidiary coinage. The repeal of the authority to purchase silver bullion to be paid for by the issue of Treasury notes (act of 1890) did not take away the authority to coin the bullion thus purchased into silver dollars as might be necessary to redeem the notes, and out of such purchases there were coined during the last fiscal year 3,956,011 silver dollars, costing \$2,680,825, thus yielding a profit of \$1,275,186. Most of the subsidiary coinage was the refabrication of old, worn, and mutilated coins unfit to be re-issued.

Of the national banks, there has been a decrease during the year of 43 in number, of \$11,000,000 in capital stock, of \$31,000,000 in gold coin and certificates, and of \$27,000,000 in United States notes. The total of bank notes outstanding has increased meanwhile by \$10,000,000.

The following table shows the aggregate resources and liabilities of the banks in detail at the dates named:

ITEMS.	SEPT. 28, 1895. 3,712 BANKS.	OCT. 2, 1894. 3,755 BANKS.
<i>Resources:</i>		
Loans and discounts.....	\$2,059,408,402 27	\$2,007,122,191 30
U. S. bonds to secure circulation.....	208,682,765 00	199,642,500 00
U. S. bonds to secure deposits.....	15,328,000 00	15,226,000 00
U. S. bonds on hand.....	10,790,350 00	10,462,200 00
Premiums on U. S. bonds.....	16,469,109 73	14,624,279 03
Stocks, securities, etc.....	195,028,085 35	193,300,072 44
Banking house, furniture, and fixtures.....	78,244,849 75	75,183,745 64
Other real estate and mortgages owned.....	25,527,027 04	22,708,891 20
Due from national banks (not reserve agents).....	123,521,087 26	122,479,067 98
Due from State banks and bankers.....	30,830,482 60	27,973,911 86
Due from approved reserve agents.....	222,287,251 45	248,849,607 59
Checks and other cash items.....	13,056,424 53	15,576,975 25
Exchanges for clearing house.....	57,506,787 60	88,524,052 17
Bills of other national banks.....	15,587,100 00	18,580,577 00
Fractional paper currency, nickels, and cents.....	986,484 44	952,332 95
Gold coin.....	110,378,360 22	125,020,290 92
Gold Treasury certificates.....	21,525,930 00	37,810,940 00
Gold clearing-house certificates.....	31,021,000 00	34,096,000 00
Silver dollars.....	5,505,459 00	6,116,354 00
Silver Treasury certificates.....	22,914,180 00	28,784,897 00
Silver fractional coin.....	4,892,381 95	5,422,172 58
Legal-tender notes.....	93,946,685 00	.....
U. S. certificates of deposit for legal-tender notes..	49,920,000 00	120,544,028 00
Five-per-cent. redemption fund with Treasurer...	9,085,606 08	45,100,000 00
Due from U. S. Treasurer.	1,285,534 36	8,723,223 16
Total.....	\$3,423,629,343 63	\$3,473,922,055 27
<i>Liabilities:</i>		
Capital stock paid in.....	\$657,135,498 65	\$668,861,847 00
Surplus fund.....	246,448,426 38	245,197,517 60
Undivided profits, less expenses and taxes paid..	90,489,924 48	88,923,564 50
National bank notes outstanding.....	182,481,610 50	172,331,978 00
State bank notes outstanding.....	66,133 50	66,290 50
Due to other national banks.....	320,228,677 38	343,692,316 63
Due to State banks and bankers.....	174,708,672 88	183,167,779 62
Dividends unpaid.....	1,670,927 89	2,576,245 95
Individual deposits.....	1,701,652,521 23	1,728,418,819 12
U. S. deposits.....	9,114,372 65	10,024,909 62
Deposits of U. S. disbursing officers.....	4,426,966 48	3,716,537 80
Notes and bills rediscounted.....	13,396,107 85	11,453,427 95
Bills payable.....	17,813,360 01	12,552,277 78
Liabilities other than those above stated.....	4,045,143 70	2,933,543 20
Total.....	\$3,423,629,343 63	\$3,473,922,055 27

Of the total money in circulation (amount outside of the Treasury), there was a decrease during the last calendar year of \$47,000,000, the details of which are shown by the following table:

CHARACTER OF MONEY.	AMOUNT IN CIRCULATION, DEC. 31,	
	1895.	1894.
Gold coin .....	\$484,728,547	\$485,501,376
Standard silver dollars.....	59,205,927	57,889,090
Subsidiary silver .....	64,417,685	62,672,086
Gold certificates.....	49,936,439	58,361,909
Silver certificates.....	336,076,648	331,077,784
Treasury notes (1890).....	115,726,769	122,453,781
U. S. notes.....	230,555,873	264,761,858
Currency certificates (1872)...	31,605,000	47,005,000
National bank notes.....	206,653,336	201,845,733
Total .....	\$1,579,206,724	\$1,626,568,622

The following table shows the details of the coinage for 1895 and 1894 :

CHARACTER.	VALUE.	
	1895.	1894.
<i>Gold—</i>		
Double eagles.....	25,211,780	55,143,640
Eagles.....	9,717,320	34,968,340
Half eagles.....	8,993,580	9,287,181
Quarter eagles.....	10,295	75,252
Total.....	43,933,475	99,474,913
<i>Silver—</i>		
Standard dollars.....	8,956,011	758
Subsidiary half dollars....	2,845,945	3,863,327
Subsidiary quarter dollars..	1,972,423	2,296,595
Subsidiary dimes.....	295,101	364,213
Total.....	9,069,480	6,024,398
<i>Minor—</i>		
Five-cent nickels.....	452,151	461,303
One-cent bronze.....	260,443	255,616
Total.....	712,594	716,919
Grand total.....	53,715,549	106,216,730

**UNIVERSALISTS.** The statistical tables in the "Universalist Register" for 1896 give this denomination 44 State conventions, 1,009 parishes, 48,030 families, 802 churches with 47,986 members, 967 Sunday schools with 56,394 members, and 834 churches with property valued at \$9,789,037. The 13 universities, colleges, theological and medical schools, and academies return 165 professors and teachers, 1,524 students, and property valued at \$2,787,500. The 12 funds under the care of the General Convention amount in the aggregate to \$263,979. Associated with the General Convention are the Womans' Centenary Association or National Missionary Society; the Young People's Christian Union, with 425 affiliated and 8 unaffiliated societies; and the Universalist Historical Society, which has a library of about 4,000 volumes, besides important manuscripts and papers.

The Universalist General Convention met in Meriden, Conn., in October. Statements were presented in an address by the Hon. Henry B. Metcalf, showing that the value of parish property had grown within the past twenty-five years from \$5,000,000 to nearly \$9,000,000; the amount of parish expenses and contributions from \$600,000 to \$1,000,000; the property in schools and colleges from \$1,700,000 to nearly \$4,000,000; the funds of the General Convention from \$38,000, less \$17,000 indebtedness, to \$264,000; and the funds held by the General and State conventions together from \$100,000

to \$690,000. A mission had been founded in Japan, and showed marked power and advance. Contributions had been given during the twenty-five years of \$53,000 to foreign missions, \$47,000 to home missions, \$94,000 to church building, \$63,000 in aid of parish work, and \$184,000 in aid of students. On the recommendation of the Committee on the Revision of the Profession of Faith, the convention voted in favor of the substitution of the following articles for the Winchester profession :

I. We believe in the fatherhood of God, and in the brotherhood of man.

II. We believe that God, who hath spoken through all his holy prophets since the world began, hath spoken unto us by his son, Jesus Christ, our example and Saviour.

III. We believe that salvation here and hereafter consists in spiritual union with God, who, leading to repentance and life by his spirit, will gather in Christ the whole family of mankind.

Final action is to be taken on these articles at the next convention, in 1897. It is represented that more churches were dedicated in 1895 than in any previous year of the life of the denomination. The home-mission work has been extended in the South and Southwest. The mission in Japan includes a central church and a theological school at Tokio, 8 churches in important cities, a school for girls, and several mission stations, some of which are under the care of native pastors educated in the seminary. The sum of \$10,000 was voted by the General Convention for carrying on this work in 1896. The meeting of the Young People's Christian Union held in Boston in July was attended by more than 4,000 members.

**UTAH,** a Western State, organized as a Territory Sept. 9, 1850; admitted to the Union as a State Jan. 4, 1896; area, 84,970 square miles. Population by the census of 1890, 207,905; estimated population in 1895, 247,324. Capital, Salt Lake City.

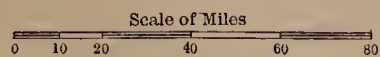
**Government.**—The following were the Territorial officers in 1895: Governor, Caleb W. West; Secretary, Charles C. Richards; Auditor, John T. Caine; Treasurer, T. W. Whitehead, Jr.; United States District Attorney, John W. Judd; Superintendent of Schools, T. B. Lewis; United States Marshal, N. M. Bingham; Adjutant General, G. M. Ottinger; Fish Commissioner, A. M. Musser—Democrats; Chief Justice of the Supreme Court, S. A. Merritt; Associate Justices, G. W. Bartch, H. W. Smith, W. H. King.

**Finances.**—The final report of the Territorial Auditor shows that the assessed valuation in 1895 was \$97,983,525, and the amount of tax \$489,917.62. The revenue was \$8,089.16 less than that of 1894. The amount of taxes unpaid at the end of the year was \$93,210.25. The bonded indebtedness is \$700,000, and the total excess of liabilities over resources, including the bonded debt, \$836,713.51. The value of the public institutions and other property which the State receives from the Territory amounts to \$1,679,568.46. The Auditor's estimate of expenses for 1896 is \$364,581.43.

**Education.**—The school population numbers 74,551. The apportionment in January was \$152,829.53; in March, \$126,695.45; in December, \$225,240.10.

The enrollment at the Agricultural College, at





This type indicates a population  
of 2,000 or over





Logan, the first term of the year was 400. The cost of the building and grounds was \$211,947. The expenditure of the past two years on the State account was \$21,861.90. There is a deficit of \$8,930. The Government gives \$26,000 a year for special purposes.

The number of students registered at the University of Utah, Salt Lake City, for the school year 1895-'96 is 503. The estimated expense for a school year is \$35,000. The appropriations heretofore have not been large enough, and there is a deficit of \$13,950. The value of the buildings and grounds is estimated at \$250,000. Originally, the ten-acre square on which the university is situated was given by Salt Lake City under certain conditions, which required that in case the ground should cease to be used for the main buildings of the university, title to the land would revert to the city. In March, 1895, the city council removed this condition, and the only requisite remaining is that the State University be located within or contiguous to Salt Lake City. In 1894 the United States Government granted to the university a 60-acre tract on the Fort Douglas reservation in Salt Lake County on condition that the institution occupy the site within five years. Thus far nothing has been done toward meeting the requirement.

**Public Institutions.**—The Penitentiary, which passes from the Government to the State, has capacity for 500 prisoners, and is on a farm of 200 acres, 78 of which are under cultivation. There are now 189 convicts. The cost has been a little over \$40,000 a year.

The Reform School, at Ogden, has 57 acres and 2 buildings which cost over \$100,000. The appropriation for maintenance in 1894-'95 was \$15,042.92, and there is about \$6,000 deficit. The first of the buildings, according to the report, was large enough to accommodate at least four times the number of children ever present at one time.

The number of patients at the Insane Asylum, at the end of the year was 217, of whom 107 were women. The average during the year was 214. The number of deaths was 15. The average cost of care and treatment *per capita* was 38½ cents daily. The asylum is at Provo. It is a modern and well-equipped building, which has cost, including the 200 acres of land, the furniture, and machinery, \$403,073.91. It can accommodate 250 patients.

The School for the Deaf, heretofore conducted as a department of the university, is to be removed to Weber County, where the School for the Blind will also be placed, according to provisions of the new Constitution.

**Industries and Products.**—The total number of industrial concerns in Utah is placed at 880, the number employed at 5,054, the wages paid at \$2,027,118, the value of raw material used at \$2,610,038, and the value of product at \$6,678,118.

The capital invested in commercial interests is estimated at \$14,551,345, sales at \$32,865,611, wages paid at \$2,785,794, and the number of concerns at 1,964, with 5,023 employed. The aggregate capital of the banks is \$5,001,890, and the deposits \$9,689,267.

There has been great activity in the search for gold, the Death valley and Little Cotton-

wood being among districts where new strikes have been made. The mineral product of the Territory in 1895 was valued at \$14,195,000. The Salt Lake Mining Stock Exchange was formally opened December 26.

**The Constitutional Convention.**—The convention for framing a constitution for the State met in Salt Lake City, March 4, with 102 members—57 Republicans and 45 Democrats. There were 5 other claimants for seats. John H. Smith was chosen president and Parley P. Christensen chief clerk. The Constitution as framed was adopted May 6. Among its peculiar provisions were the following:

Eight jurors may sit in judgment, and six may find a verdict.

A day's work, in public employment, is limited to eight hours.

Women are to hold equal rights with men at the ballot box and in eligibility to office.

Polygamy is condemned in the strongest terms, and the Territorial laws in regard to it are continued in force by special provision.

The complete separation of Church and state is decreed, and perfect toleration in matters of religion is guaranteed.

Officers in counties, cities, and townships are prohibited from borrowing money in excess of the amount of taxes for the current year, except by the authority of the majority of the citizens therein who have paid a property tax for at least one year preceeding.

In general, the Constitution follows the usual lines of State constitutions, the executive departments and the legislative and judicial authorities and functions being distributed under the precedents established by the fundamental law in the older States. The first article is a "declaration of rights, guaranteeing personal liberty, rights of accused persons under prosecution, freedom of speech and of the press, free elections, and the obligation of contracts; declaring subordination of the military to the civil power; prohibiting slavery and the taking of private property for public use without just compensation; and providing that no law shall be passed granting irrevocably any franchise, privilege, or immunity." Section 13 of this article is as follows:

Offenses heretofore required to be prosecuted by indictment shall be prosecuted by information after examination and commitment by a magistrate, unless the examination be waived by the accused with the consent of the State, or by indictment, with or without such examination and commitment. The grand jury shall consist of 7 persons, 5 of whom must concur to find an indictment; but no grand jury shall be drawn or summoned unless in the opinion of the judge of the district public interest demands it.

Article II defines the boundaries of the State. Article III is on religious toleration and on Indian lands and other lands belonging to the Government, disclaiming any right, jurisdiction, or control over them, and providing that they shall never be taxed higher in proportion than lands belonging to citizens of the State; also assuming the debt of the Territory, and ordaining that the Legislature shall provide for a system of public schools which shall be free from sectarian control. Article IV is on elections and the right of suffrage. Then follows the usual distinction of the legislative, executive, and judicial departments, and the defining of the rights and duties of each. All general elections are to

be on the Tuesday next following the first Monday in November, and the terms of officers elected begin on the 1st of the following January.

The sessions of the Legislature are to be biennial, beginning, except the first, on the second Monday in January next after the election of members, whose terms are two years for members of the House and four years for Senators, except that half of the Senators first chosen shall be drawn by lot to serve two years only. Twenty-five years is the minimum age. Members can not hold any office of trust or profit from the Government or State, or take any that has been created during their terms; they shall be privileged from arrest during the session, for fifteen days before and in returning, and shall receive not more than \$4 a day and mileage not to exceed 10 cents a mile. No regular session except the first shall exceed sixty days in length, except in cases of impeachment, and no special session last more than thirty days. The House shall have the power of impeachment by a two-thirds vote. Private and special legislation is prohibited in 18 cases.

Legislation is also prohibited releasing obligations to the State or to municipal corporations therein; authorizing lotteries, etc.; delegating power to make or interfere with municipal improvements and the like; granting extra compensation to officers, etc., except in the case of charges incurred by public officers in the execution of the laws; and from authorizing the State or any county, city, town, township, district, or other political subdivision of the State to lend its credit or subscribe to stock or bonds in aid of any railroad, telegraph, or other private individual or corporate enterprise or undertaking.

The Executive Department shall consist of Governor, Secretary of State, State Auditor, State Treasurer, Attorney-General, and Superintendent of Public Instruction, each of whom shall hold his office for four years, beginning on the first Monday in January next after his election, except that the terms of office of those elected at the first election shall begin when the State shall be admitted into the Union, and shall end on the first Monday in January, A. D. 1901.

In case of the death of the Governor, or disability from any cause, the Secretary of State shall be acting Governor; and if he also is unable to perform the duties of the office, they devolve upon the President *pro tem.* of the Senate.

The Governor, Justices of the Supreme Court, and Attorney-General constitute a Board of Pardons; the Governor, Secretary of State, and Attorney-General, a Board of State Prison Commissioners; the Governor, State Treasurer, and Auditor, a Board of Insane-asylum Commissioners; and the Governor, Attorney-General, and Superintendent of Public Instruction, a Board of Reform-school Commissioners. All fees are to go into the treasury.

The Supreme Court is to consist of 3 judges, but may be increased to 5 after 1905. The term, after the first, shall be six years. There are for the present 7 judicial districts. The office of probate judge is abolished. The State is divided for the present into 27 representative and 12 senatorial districts.

The article on education provides that

The public-school system shall include kindergarten schools; common schools, consisting of primary and grammar grades; high schools; an agricultural college; a university; and such other schools as the Legislature may establish. The general control and supervision of the public-school system shall be vested in a State Board of Education, consisting of the Superintendent of Public Instruction and such other persons as the Legislature may provide. Neither the Legislature nor the State Board of Education shall have power to prescribe text-books to be used in the common schools.

The metric system is to be taught; religious tests are forbidden, and "neither the Legislature nor any county, city, town, school district, or other public corporation shall make any appropriation to aid in the support of any school, seminary, academy, college, university, or other institution, controlled in whole or in part by any Church, sect, or denomination whatever."

Corporations for municipal purposes shall not be created by special laws, but the Legislature shall provide by general laws for the incorporation, classification, and organization of towns in proportion to population. Cities are prohibited from selling or leasing waterworks or sources of supply owned or controlled by them, except that they may exchange them for others of equal value.

No railroad corporation shall consolidate its stock, property, or franchise with any other railroad corporation owning a competing line.

The rolling stock and other movable property belonging to any other railroad company or corporation in the State shall be considered personal property, and shall be liable to taxation and to execution and sale.

No corporation or association shall bring any armed person or bodies of men into the State for the preservation of the peace or the suppression of domestic troubles, without authority of law.

The stockholders in every corporation and joint stock association for banking purposes, in addition to the amount of capital stock subscribed and fully paid by them, shall be individually responsible for an additional amount equal to the amount of their stock.

Combinations to control prices are prohibited, and corporations violating this section may be deprived of their franchises.

It is made a crime for any corporation or agent of a corporation to interfere maliciously with the obtaining or retaining of employment by any person.

The article on revenue and taxation provides that a deduction of debts from credits in assessments may be authorized, and exempts public property, property used exclusively for religious worship or charitable purposes, and places of burial not used or held for private or corporate benefit. Ditches and canals are not to be separately taxed when used exclusively for irrigating the property of the owners. Mining claims and mines are to be taxed at the price paid the United States therefor, except when the surface is used for other purposes; machinery, etc., is to be taxed at its value. The rate of taxation shall not exceed 8 mills on the dollar; when the taxable property shall amount to \$200,000,000, it must not exceed 5 mills, and



never exceed 4 mills after the valuation reaches \$300,000,000, unless permission is granted by vote of the electors who paid a property tax the year preceding the election.

Until otherwise provided by law, there shall be a State Board of Equalization, consisting of the Governor, Auditor, Treasurer, Secretary of State, and Attorney-General; also in each county a county board of equalization, consisting of the board of county commissioners.

Nothing in the Constitution shall be construed to prevent the Legislature from providing a stamp tax, or a tax based on income, occupation, licenses, franchises, or mortgages.

The militia shall consist of all able-bodied male inhabitants between eighteen and forty-five not exempt by law.

The Legislature is to provide for a Board of Labor Conciliation and Arbitration, and to prohibit

1. The employment of women, or of children under the age of fourteen years in underground mines.
2. The contracting of convict labor.
3. The labor of convicts outside prison grounds, except on public works under the direct control of the State.
4. The political and commercial control of employees.

The exchange of black lists by railroad companies or other corporations is prohibited.

The right of action to recover damages for injuries resulting in death shall never be abrogated, and the amount recoverable shall not be subject to any statutory limitation.

The Legislature shall provide for the selection, by each head of a family, and exemption of a homestead, which may consist of one or more parcels of land, together with the appurtenances and improvements thereon, of the value of at least \$1,500, from sale on execution.

Women retain their property in their own right after marriage, and it is not to be liable for the debts or obligations of their husbands.

**Political.**—The Republican convention to nominate officers for the State in 1896 was held in Salt Lake City, Aug. 28. The platform pledged the party in Utah to work for the remonetization and free and unlimited coinage of silver at the ratio of 16 to 1; favored protection; condemned the bond issue; condemned the administration for failure to open the Uintah and Uncompahgre reservations to settlement; favored the cession of unsold nonmineral lands to States and Territories for aid to irrigation and public schools; favored fixed salaries for public officers; demanded economy in governmental expenditures; approved the proposed State Constitution; demanded that the real estate belonging to the Mormon Church be returned to it; congratulated the women of Utah on the right of suffrage granted; condemned the foreign policy of the national Administration; and concluded:

We denounce the Democratic party of Utah because it stuffed the ballot boxes in Weber, Salt Lake, and Sanpete Counties in its endeavor to obtain control of the Constitutional Convention. We denounce the Democratic members of the Utah commission as accessories to this attempted fraud.

The ticket was as follows: For Governor, Heber M. Wells; Congressman, C. E. Allen;

Judges of the Supreme Court, C. S. Zane, J. A. Miner, and G. W. Bartch; Secretary of State, J. T. Hammond; Treasurer, James H. Chipman; Attorney-General, A. C. Bishop; Auditor, Morgan Richards; Superintendent of Public Instruction, Mrs. Emma J. McVicker. John R. Park was nominated to be the candidate for Superintendent, in case it should be decided that women were not eligible.

The Democratic convention assembled at Ogden, Sept. 5. Its platform declared for free coinage of silver, and attributed the panic of 1893 to the Republican party, and declared as cardinal doctrines of Democracy:

1. Absolute acquiescence in the will of the majority as a vital principle of the Democratic party.
2. Total separation of Church and State, for the sake alike of civil and religious liberty.
3. The liberty of the individual, unvexed by summary laws.
4. Support by the State of the public schools.
5. The supremacy of the civil over the military power.
6. Exact equality of all persons before the law.
7. The right to a free ballot—the right preservative of all other rights.
8. That the Democratic party is the friend of the laboring man in every vocation of life, and will protect his interest alike against the aggressions of monopoly as well as the commune.

The following candidates were nominated: For Governor, John T. Caine; Congressman, B. H. Roberts; Judges of the Supreme Court, Samuel R. Thurman, Richard W. Young, Thomas Maloney; Secretary of State, Fisher S. Harris; Attorney-General, A. J. Weber; Treasurer, Alma Greenwood; Auditor, Guy C. Wilson; Superintendent of Public Instruction, Karl G. Maeser.

During the political campaign excitement was caused by the utterances of some of the officials of the Mormon Church which were construed as an attempt to influence members of the Church to vote the Republican ticket. This, it was alleged, was done with a view to securing protection and support for certain enterprises in which the Church had a large interest—the Utah Company, the Lehi Sugar Works, the Salt-air Beach resort, and some large railway and mining enterprises; and it was alleged that a deal had been made with Republican leaders. At a conference of the Mormon priesthood, in Salt Lake City, it was reported that President Joseph F. Smith and George Q. Cannon made speeches in which they denounced Mormons who had accepted nominations on the Democratic ticket, particularly Moses Thatcher and B. H. Roberts (for Senator and Congressman). Republicans denied that there was anything in the charge, and asserted that the Democrats were making it in order to account for the defeat in the coming election, which they saw to be inevitable.

On this account the Democratic committee called another session of the State convention at Salt Lake City, Oct. 22, and the convention issued an address to the people, in which they reviewed the history of the parties in the Territory as related to the Church and the pledges of the Church authorities in 1892 to refrain from all interference or dictation in political matters on the part of the Church; cited instances in which these pledges had been broken;

said that the widespread impression that the officers of the Church desired the success of the Republican party must have a foundation in fact; and made a "Declaration of Truths," the gist of which was: "That a trust is imposed upon each citizen in a free country to act politically upon his own judgment and absolutely free from control or dictation, ecclesiastical or otherwise."

The Populists nominated Henry W. Lawrence for Governor, T. C. Bailey for Secretary, H. O. Young for Auditor, T. L. Jones for Treasurer, J. S. Weaver for Attorney-General, and I. T.

Alvord for Superintendent of Public Instruction.

The question arose whether women might vote at the November election for State officers and on the adoption of the Constitution, and whether they were eligible to office. It was decided in the negative.

The entire Republican ticket was chosen. The vote for Governor stood: Wells, Republican, 20,833; Caine, Democrat, 18,519; Lawrence, Populist, 2,051.

On the adoption of the proposed Constitution, the vote stood: Yes, 31,305; no, 7,687.

## V

**VENEZUELA**, a federal republic in South America, formed in 1830 by the secession of the former Spanish colony of New Grenada from the state founded by Simon Bolivar. There is a Senate of 27 members, 3 from each State, and a House of Representatives, composed of 63 members, elected by direct popular vote for four years. The presidential term is four years. The President is Gen. Joaquin Crespo. The Council of Ministers was composed in the beginning of 1895 as follows: Interior, Gen. J. Ramon Nuñez; Foreign Affairs, P. Ezequial Rojas; War and Marine, Gen. Ramon Guerra; Treasury, Fabricio Conde; Public Instruction, Dr. Luis Ezpelosin; Fomento, Gen. Augusto Lutowsky; Public Works, David Leon. The Secretary General was Gen. José Antonio Velutini. During the year Dr. J. F. Castillo became Minister of the Interior; Dr. Lucio Pulido, Minister for Foreign Affairs; M. A. Matos, Minister of the Treasury; Dr. A. Urbaneja, Minister of Public Instruction; Gen. Jacinto Lara, Minister of Fomento; and J. M. Maurique, Minister of Public Works; while Dr. J. R. Nuñez was made Secretary General. In December the Cabinet was reconstructed again, when Ezequial Rojas returned to the Ministry of Foreign Affairs, Enrique Perez became Finance Minister, Bruzual Serra was appointed Minister of Public Works, Federico Chirenos Minister of Instruction, and Tosta Garcia became Minister of Fomento.

The estimated area is 593,943 square miles. The population in 1891 was 2,323,527. The number of foreigners was 42,898. The native Indian population is estimated at 326,000, of whom 240,000 are civilized. Caracas, the capital, had 72,429 inhabitants in 1892.

**Finances.**—The budget for 1895-'96 estimates the revenue at 34,179,990 bolivars, or francs, of which 23,838,000 are derived from import duties, 162,000 from other customs duties, 5,000,000 from internal-revenue taxes, and 5,179,990 from incomes. The expenditures of the various departments are estimated as follow: Interior, 8,473,388; Foreign Affairs, 1,686,290; Fomento, 1,610,504; Public Instruction, 3,723,060; Public Works, 3,237,108; Finance, 11,805,364; War and Marine, 4,644,376 bolivars; total, 34,179,990 bolivars. The public debt in 1895 amounted to 136,371,378 bolivars, of which 39,236,874 bolivars represent the consolidated internal national debt, paying 5 per cent interest; 20,009,089 bolivars, a new internal 6-

per-cent. loan, issued July 16, 1894; 5,000,000 bolivars, certificates paying 1 per cent. a month; 67,147,325 bolivars, the foreign debt, paying 3 per cent.; and 4,978,090 bolivars, debt due to Spain, France, and Germany.

**Commerce and Communications.**—The values of the principal exports in 1894 were: Coffee, 84,769,000; cacao, 9,651,000; gold, 2,884,000; hides, 2,849,000; animals, 1,142,000 bolivars.

There were 385 miles of railroad in operation in 1894. The state telegraphs had a length of 3,880 miles. The number of messages in 1894 was 208,965; expenses, 1,080,966 bolivars.

**Defense.**—By a decree of Aug. 4, 1893, the strength of the army was fixed at 18 battalions, each battalion containing 6 companies of 60 men. The effectives in 1893 numbered 7,280 officers and men. Every citizen between the ages of eighteen and forty-five is enrolled in the national militia. Of this force, 60,000 men have been mobilized at one time. The number of citizens liable to serve is estimated at 250,000.

There is a fleet of 4 steamers and 2 sloop gunboats. To each steamer is attached a company of marine infantry.

**Revolutionary Attempt.**—An uprising against the Government of President Crespo, in the interest of Dr. Rojas Paul, was started in the autumn. His most prominent opponents would not countenance a political disturbance at a time when the boundary dispute with England was in so critical a state. The revolution was planned to take place simultaneously in Caracas, and in the States of Bermudez and Lara on the night of Nov. 10. The authorities had been warned, and within an hour most of the leaders were in custody and their followers dispersed. Gen. Yaguaracuto, one of the military chiefs of the revolutionary uprising, was taken to Caracas as a prisoner. Gen. Diaz and Gen. Menendez, members of the council of war, fled to Curaçoa. Four members of the Cabinet who were suspected of complicity were dismissed from office. A few bands of guerrillas under Gen. Amparan and Gen. Platero remained unsubdued in the mountains.

**Diplomatic Rupture.**—Some of the European diplomatic representatives, impatient at the delay of Venezuela in acting upon their claims for damages due their nations arising out of the revolution of 1892, suggested to their respective governments the organization of a



# VENEZUELA-GUIANA BOUNDARIES.

## EXPLANATION.

- Pumeron River-Extreme limit of disputed territory according to Venezuela.
- Extreme limit of present British claims.
- Schomburgk Line (1841).
- Aberdeen Line (1844).
- Granville Line (1881).







mixed tribunal to pass upon unpaid claims. Offended at this, President Crespo, in March, 1895, sent their passports to the Belgian and French ministers, the only ones then present in Caracas. Afterward he sought to resume diplomatic relations with France, explaining that the French minister was dismissed as *persona non grata*, but it was not till December that the French Government decided to renew relations, requiring as a condition that the same minister be received and an apology rendered. Spain, as well as France, was importunate for payment of these claims. Germany pressed another demand, the payment of the 7-per-cent. guaranteed interest on the German railroad between Valencia and Caracas, and in December sent a squadron to Venezuelan waters.

**Guiana Boundary Dispute.**—The first settlements in Guiana, the country north of the Amazon and east of the Orinoco, discovered by Vasco de Nuñez in 1504, or perhaps by Columbus in 1498, were planted by the Spaniards in 1560 along the Orinoco. Spain claimed the whole of Guiana by right of discovery and by virtue of the bull of Pope Alexander II dividing America between Spain and Portugal. In 1580 the Dutch, then subject to the Spanish Crown, established a settlement on the Pumeron river, and soon afterward founded one at Wapari. Later still they attempted to settle on the west bank of the Essequibo, but were driven off by the Spaniards. The English under Sir Walter Raleigh sought the gold region, but failed; and in 1630 they attempted to found a settlement at Surinam. The French, with better success, founded one at Paramaribo, and when they abandoned this for Cayenne the English occupied the site in 1652. This territory was ceded in 1667 to the Dutch, who meanwhile had developed flourishing plantations on the Berbice, Demerara, and Essequibo rivers.

When the Netherlands finally achieved its independence from Spain the Treaty of Münster, signed Jan. 30, 1648, confirmed the right of the Dutch settlers in Guiana to the territories already possessed or colonized, but prohibited them from navigating or trading in the bays or places provided with fortifications, warehouses, or castles. Notwithstanding the treaty, the Dutch sought continually to establish new posts, which the Spaniards endeavored to break up by armed expeditions. The Dutch traded with the Caribs, who were hostile to the Spaniards. Their posts, from which the Spaniards ejected them, extended along the coasts as far west as the river Barima, and into the interior on the rivers Essequibo, Cuyuni, Pumeron, Waini or Guaima, and Barima. The West India Company laid claim to the whole coast up to the mouth of the Orinoco. The first Spanish settlement south of the Orinoco was San Thome de Guayana, founded in 1596. No other permanent settlements were established till after 1723, when Capuchin missions were organized in the district between the Yuruari and the Orinoco. The Spaniards traded with the Indians on the Cuyuni, causing the Dutch West India Company in 1730 to issue an edict prohibiting trade on the rivers Cuyuni and Mazaruni except to their own agents.

The Dutch built forts on Pumeron river and

in the valley of the Essequibo, the farthest one near the mouth of Cuyuni river. The ruins of one were discovered also by Sir Robert Schomburgk at Point Barima. It was a post that the Dutch held for a time, until the Spaniards became aware of the encroachment or thought proper to dislodge them, when they were expelled and their fort was destroyed. Their only settlements west of the Essequibo were at the mouth of the Pumeron, from which a Spanish force attempted to expel them in 1797 without success.

The Treaty of Utrecht in 1713 confirmed the provisions of the Treaty of Münster. In the extradition treaty of Aranjuez, between Spain and the Netherlands, June 23, 1791, the Dutch colonies were specified as Essequibo, Demerara, Berbice, and Surinam, while the territory of the Orinoco was described as Spanish.

The English seized Dutch Guiana in 1781, restored it in 1793, and occupied it again in 1796, and in 1814 the Netherlands, in the Treaty of London, formally ceded to England the establishments of Berbice, Demerara, and Essequibo. The Spanish colonies revolted in 1810, and in 1845 the independence of Venezuela, which had seceded in 1830 from the United States of Colombia, was finally recognized by Spain.

After this part of Guiana became a dependency of the British Crown the white colonists continued to trade with the Indians on the affluents of the Essequibo and the British made treaties with some of the tribes, engaging to protect them from the Spaniards. In 1836, after 2 British vessels had run aground in the Grand Boca of the Orinoco, Sir Robert Ker Porter, British *chargé d'affaires* at Caracas, requested a beacon at Point Barima.

Robert H. Schomburgk, who traveled in Guiana under the auspices of the Royal Geographical Society in 1835-'39, drew a map of the frontiers of British Guiana, making the Amacura the boundary in the north, and the Cotinga (from its source in Mount Roraima) the dividing line from Brazil, and taking in a great part of the course of the Cuyuni and nearly the whole length of the Mazaruni. It was based on accounts given by the Indians of their former relations to Dutch traders and on discoveries of ruined fortifications, with the bounds adjusted to geographical features, such as mountain ridges and water courses. To Venezuela was left only the region over which the influence of the Capuchin missions extended. The Venezuelan Government, alarmed at the extension of the British boundaries shown on Schomburgk's map, appointed Dr. Fortique minister to London in 1841 for the express purpose of arranging a settlement of the boundary. At the same time the British Government commissioned Schomburgk to survey and demarcate the limits, and he began to set up boundary posts at Point Barima and elsewhere along the line. Señor Fortique made strong representations regarding these boundary marks, demanding that a settlement of the boundary by treaty precede the demarcation; to which Lord Aberdeen replied: "The marks and flags established by Engineer Schomburgk were in no way intended as an encroachment or a desire on the part of England to occupy the territory, but simply as a means

of preparing for the discussion of the boundary question between Venezuela and England, and not done, as Venezuela seemed to fear, with the intention of indicating dominion or empire." He expressed satisfaction that the colonial authorities at Demerara had not occupied Point Barima; and when Señor Fortique demanded that the monuments set up by Schomburgk be removed the British Government, on Jan. 31, 1842, sent orders to that effect. Sir Robert Schomburgk was directed at the same time to continue the survey, which he completed in 1844. The Venezuelan Government took the ground that all Guiana originally formed part of the Spanish captain generalcy of Venezuela, and that the part ceded to Holland (which Holland had transferred to Great Britain) comprised only the territory settled and ruled by the Dutch, whose westernmost settlements were confined to the banks of the Essequibo, except near the coast, where they extended to the Pumeron river. In 1841 a case came up in the Demerara court, touching jurisdiction over Maroco river, where a murder had been committed, and the court held that that place was within Venezuelan jurisdiction. On July 29, 1843, Lord Aberdeen suggested arbitration of the boundary dispute. In 1844 he offered to accept Maroco river as the starting point of a conventional boundary, which in the interior should follow the Cuyuni river to its source. Dr. Fortique would not concede a more northern boundary than Pumeron river, and his death, in 1844, interrupted the negotiations.

Some years later the Venezuelan Minister of Foreign Affairs interrogated the British *chargé d'affaires* as to the rumored intention of Great Britain to build a fort at Point Barima. Belford Hinton Wilson replied that his Government had no intention to occupy or encroach upon the territory in dispute, and expected the Venezuelan Government to instruct the local authorities in Guiana to refrain from taking measures which the British authorities might justly regard as aggressive, and which would lead to a collision. In response to his request and formal declaration, made under instructions, that "Great Britain has no intention to occupy or encroach upon the territory in dispute," the Venezuelan minister, on Nov. 18, 1850, entered into a mutual engagement with him to treat such territory as neutral and inviolate pending a settlement.

Owing to the civil war in Venezuela, boundary negotiations were not resumed till 1876. Venezuela then offered to accept the Maroco line that Lord Aberdeen had proposed, but this offer was rejected by Lord Salisbury. An alleged naval demonstration at the mouth of the Orinoco formed the subject of a letter from the Venezuelan minister in Washington, dated Dec. 21, 1879, to which Mr. Evarts, Secretary of State, on Jan. 31, 1880, replied: "I have to inform you that, in view of the deep interest which the Government of the United States takes in all transactions tending to attempted encroachments of foreign powers upon the territory of any of the republics of this continent, this Government could not look with indifference on the forcible acquisition of such territory by England."

In 1881 Lord Granville offered to Venezuela a boundary line beginning 29 miles southeast of

Point Barima, thus resigning all territorial claims over the mouth of the Orinoco. Inland it followed the upper course of Cuyuni river, like the Aberdeen line. This proposition, being less favorable to Venezuela than the previous one, was refused, and the boundary question did not come up again till 1882, but the discussion became acute after gold had been discovered, in 1883, on one of the affluents of Mazaruni river, and miners began to flock into the country.

Venezuela concluded in 1882 that the only solution open to her was arbitration. Since the laws and the Constitution of the republic designated the Essequibo as the eastern boundary, no compromise line short of it would be acceptable or legal, whereas the decision of an international arbiter as to the true boundary would be binding and satisfactory. The Venezuelan minister in London was instructed, on July 15, 1882, to suggest arbitration, and President Guzman Blanco, in November of that year, communicated the state of the negotiations to the Secretary of State at Washington, together with a copy of an intended note proposing arbitration, requesting advice from the United States Government and such support as it was deemed possible to give. Mr. Frelinghuysen, in a dispatch to the minister in Caracas, intimated the willingness of the United States to use its good offices to promote arbitration, though not to approach Great Britain as the advocate of any prejudged solution in favor of Venezuela. He desired the minister to say to the Foreign Secretary in Caracas that "the United States, while advocating strongly the recourse to arbitration for the adjustment of international disputes affecting the states of America, does not seek to put itself forward as the arbiter; that, viewing all such questions impartially, with no intent or desire to prejudice their merits, the United States will not refuse its arbitration if desired by both parties; and that, regarding all such questions as essentially and distinctively American, the United States would always prefer to see such contentions adjusted through the arbitrament of an American rather than a European power."

On Nov. 15, 1883, the Venezuelan Government proposed to submit the frontier dispute to arbitration, saying that it was necessary to have the decision of an impartial referee, since the Constitution of the republic forbade the alienation of any part of the national territory. Col. Mansfield, then British minister at Caracas, replied, on March 29, 1884, that the dispute was not a proper subject for arbitration, and Guzman Blanco went to London as minister plenipotentiary for the purpose of reaching a settlement, if possible. On his way he stopped in Washington and conferred with the Secretary of State, who instructed Mr. Lowell to use his discretion as to how far his good offices could be profitably employed, but, at any rate, to "take proper occasion to let Lord Granville know that we are not without concern as to whatever may affect the interests of a sister republic on the American continent and its position in the family of nations." Gen. Blanco suggested to the British Government, as an alternative to arbitration by a third party, that the question be submitted to a commission of jurists appointed by both parties. This Lord Granville found incompatible with the British Constitu-



tion. Lord Granville declared that Great Britain's object was not to obtain Venezuelan territory, but to determine where the line ran, and he finally agreed to a general arbitration of the questions pending between the two countries. But before the convention was signed the Marquis of Salisbury, on June 24, 1885, became Minister of Foreign Affairs, and refused to confirm this agreement with Venezuela.

Lord Rosebery, who became Foreign Secretary under Gladstone, Feb. 6, 1886, proposed a boundary line that should start from the seacoast west of the river Waini, but this was rejected, on the ground that it would decide once for all the boundary question in a manner unfavorable to Venezuela.

Meanwhile Michael McTurk, with a body of police from Demerara, took possession of Point Barima and entered the rivers, posting notices on the trees indicating British dominion. He informed Mr. Kelly, manager of the Manoa Company, which had obtained from the Venezuelan Government mining rights and land titles extending up to the border of British Guiana, that Barima river was in British Guiana, and he wrote to C. C. Fitzgerald that the whole territory between the Maroco and the Amacuka rivers was a part of British Guiana. A notice was published in the London "Gazette" on Oct. 21, 1886, giving warning that, whereas the boundary line was in dispute, it having come to the knowledge of the British Government that grants of land within the territory claimed by it had been made in the name of the Government of Venezuela, no land title or other right affecting land within the territory claimed as part of the colony of British Guiana would be admitted.

The Venezuelan Government complained that the British authorities had executed solemn acts of jurisdiction in places admitted to be in dispute, thus violating the agreement of 1850, to which the British minister replied that Venezuela had exercised such jurisdiction, also breaking the agreement.

Señor Urbaneja, the Venezuelan Foreign Minister, urging that the Manoa grant could not have given Great Britain cause of complaint, since the concession embraced no land that was in dispute, and had, moreover, expired, declared that diplomatic relations with Great Britain would be broken off unless the occupation of Point Barima, admitted by Sir John Ker Porter in 1836 to belong to Venezuela, and of other points in the disputed territory, should cease. The British minister, F. R. St. John, replied that he was unable to explain the proceedings of the authorities of British Guiana or to discuss them without instructions, and said that his Government was not bound by the unauthorized admission of a diplomatic agent made fifty years before. Lord Salisbury subsequently instructed the minister to say that Great Britain would not object even then to the erection of a lighthouse on Point Barima for the benefit of commerce, as the British consul requested in 1836, provided that it would not be construed in any way prejudicial to the British claim to the territory in dispute. With the object of preventing a rupture of diplomatic relations between Great Britain and Venezuela Secretary Bayard, in December, 1886, instructed the United

States minister in London to tender the arbitration of the United States, saying that it was done "with the less hesitancy as the dispute turns upon simple and readily ascertainable historical facts." The relations of the United States to the matter were explained as follow: "The attitude of friendly neutrality and entire impartiality touching the controversy, consisting wholly of a difference of facts between our friends and neighbors, is entirely consistent and compatible with the sense of responsibility that rests upon the United States in relation to the South American republics. The doctrines we announced two generations ago, at the instance and with the moral support and approval of the British Government, have lost none of their force or importance in the progress of time, and the governments of Great Britain and the United States are really interested in conserving a status the wisdom of which has been demonstrated by the experience of more than half a century." The Spanish Government and several of the South American republics also offered their good offices, and the Pope offered also to act as arbitrator. His offer and that of the United States were declined by Great Britain. The President of Venezuela appointed Dr. Jesus Muñoz Tebas and Gen. Rodil commissioners to investigate the acts of encroachment by Great Britain. Acting on their report, Minister Diego B. Urbaneja, on Jan. 26, 1887, represented that Great Britain had violated the convention that was her own suggestion by entering the Waini, Morajuana, Amacuka, and Barima rivers and posting notices on the banks proclaiming that her laws were in force there, by seizing a Venezuelan commissary within Venezuelan jurisdiction and carrying him off to Georgetown to be tried and fined, by establishing a public office in Amacuka, by cruising in a revenue cutter between the Amacuka and the Barima, by sending a magistrate to decide on criminal and police cases there, by authorizing the working of mines on Venezuelan territory, and finally by appropriating said territory on the pretext that a dispute regarding limits is pending. The Venezuelan minister accordingly demanded in the name of the President that the British evacuate the territory from the mouth of the Orinoco to the Pumeron by Feb. 20, 1887, the date for the assembling of the congress; otherwise the diplomatic relations of the two countries would be severed. In the final note dismissing the British minister, Señor Urbaneja recapitulated the case of Venezuela and protested before the British Government and before all civilized nations against the British acts of spoliation, "which Venezuela would never recognize as altering the rights she had inherited from Spain, and will ever be willing to submit to the decision of a third power." Since then official communications between the two governments have been presented through the German minister at Caracas.

Secretary Bayard, having been informed in February, 1888, that the Government of British Guiana, by formal decree, had laid claim to the territory traversed by the route of a proposed railroad from Ciudad Bolívar to Guasipati, wrote to the United States minister in London: "The claim now stated to have been put forth by the

authorities of British Guiana necessarily gives rise to grave disquietude and creates as apprehension that the territorial claim does not follow historical tradition or evidence, but is apparently indefinite." He intimated anew the great gratification that it would afford the United States Government to see the Venezuelan dispute amicably and honorably settled by arbitration or otherwise. After pointing out that Guasipati lies considerably westward of the line officially claimed in 1887, which followed the Yuruari and itself made a wide detour to the west of the line given out by the Colonial Office ten years earlier, Mr. Bayard concluded: "If, indeed, it should appear that there is no fixed limit to the British boundary claim, our good disposition to aid in a boundary settlement might not only be defeated, but be obliged to give place to a feeling of grave concern." Information having been received in 1889 that Barima had been declared a British port, Secretary Blaine authorized the acting minister in London to confer with Lord Salisbury, with a view to the re-establishment of diplomatic relations between Great Britain and Venezuela on the basis of the temporary restoration of the *status quo*. In May, 1890, the Secretary telegraphed to Mr. Lincoln to use his good offices to bring about the resumption of diplomatic intercourse as a preliminary step toward the settlement of the boundary dispute by arbitration, and to that end he suggested an informal conference in Washington or London of representatives of the 3 powers in which conference the position of the United States would be "one solely of impartial friendship toward both litigants." The minister was instructed to do all that he could consistently with such an impartial attitude, to bring about some accord between the contestants by which "the merits of the controversy can be fairly ascertained and the rights of each party justly confirmed." Without expressing an opinion as to what those rights were, the Department of State "was confident that the shifting footing on which the British boundary question has rested for several years past is an obstacle to such a correct appreciation of the nature and grounds of her claim as would alone warrant the formation of an opinion."

With the development of mining, the boundary claim of Great Britain continued to be moved farther west. Venezuela was forced by British aggressions to resume the negotiations, which were reopened in 1890 through the Venezuelan minister in Paris and a special envoy. The latter went to London with a view to the resumption of regular diplomatic relations, and was received by Lord Salisbury through the good offices of the minister of the United States; but the mission failed because a condition of such resumption that Venezuela steadily adhered to was the reference of the boundary dispute to arbitration. When, in his interview with the British minister, the Venezuelan commissioner broached the subject of the boundary dispute, he was informed that "England is not aware that any such nation as Venezuela exists, and does not admit that there is any question pending between the two countries." The line claimed by Lord Salisbury at that time began at the mouth of the Amacuka, west of Point

Barima. Señor Michelena, a confidential agent of Venezuela, reopened informal negotiations in London in 1893. Lord Rosebery carried the frontier west of the Amacuka and in the interior as far as the source of Cumano river and the sierra of Usupamo, and offered to arbitrate regarding territory west of that line. The Venezuelan agent abandoned his fruitless mission in October, 1893, leaving at the Foreign Office a declaration protesting against the proceedings of the colony of British Guiana as encroachments upon the soil of the republic, and also against the claim of the British Government that that part of the territory belonged to British Guiana, and laying upon the British Government the responsibility for the incidents that might arise in the future from the necessity to which Venezuela was driven to oppose the dispossession of a part of her territory and provide for her legitimate defense.

After the failure of the Michelena mission Venezuela repeatedly brought the controversy to the notice of the Government in Washington, insisting on its importance to the United States as well as to Venezuela, and represented it as having reached an acute stage. The minister at St. James's was informally instructed to exert all his influence in the direction of the re-establishment of diplomatic intercourse and in favor of arbitration. On July 13, 1894, Secretary Gresham wrote to Mr. Bayard: "I can discern but two equitable solutions of the present controversy. One is the arbitration of the rights of the disputants as the respective successors of Holland and Spain over the region in question. The other is to create a new boundary line in accordance with the dictates of mutual expediency and consideration. The two governments having so far been unable to agree upon a conventional line, the consistent and conspicuous advocacy by the United States and England of the principle of arbitration and their recourse thereto in settlement of important questions arising between them, makes such a mode of adjustment especially appropriate in the present instance."

The authorities of British Guiana in 1894 established a police station at Yuruan, at the junction of the Yuruan and Yuruari rivers, 100 miles beyond the Schomburgk line and outside of the Aberdeen and Granville lines, or any line previously claimed by Great Britain. Warning was sent from the Venezuelan military post on the opposite side of the Cuyuni that the upper Cuyuni district was administered by Venezuela and never had been claimed by Great Britain. In September a party went over and arrested Inspector Barnes and Subinspector Baker, carrying them to Upata for trial. As soon as the facts became known in Caracas peremptory orders were sent for the release of the prisoners, who were thereupon conducted back to the place where they had been captured, and were repaid for the loss of clothes and other property. The English hauled down the Venezuelan flag and raised their own again. The leaders of the raiding party were ordered to Caracas, and were there severely punished. In October, 1895, England demanded an indemnity of £12,000 for "the arrest and imprisonment of 2 English subjects on English territory." Vene-





LAKE DWELLINGS NEAR MARACAIBO.



zuela had immediately informed the London Government of the reparation already made, and President Crespo demurred to paying an indemnity, and especially to the form in which it was demanded, implying an acknowledgment of British sovereignty over Yuruan. Great Britain then proposed arbitration of the question; but to this Venezuela would not agree, because it would likewise assume that the incident occurred on British territory.

Mining began in 1886, and since the rupture the invading miners have advanced up Cuyuni river beyond the Schomburgk line until they have reached the district of the Callao mine, owned in great part by the English firm of Rothschild, which has long been worked, producing \$30,000,000, by a company that holds its concession from and pays royalties to the Venezuelan Government. All the streams flowing into the Cuyuni, the Mazaruni, the Barima, and the Amacuka are rich in gold. The work is largely done for the English miners by imported coolie contract laborers. The output rose from \$112,000 in 1886 to nearly \$500,000 in 1888. The product for the first five years was \$2,272,000. In 1893 \$2,400,000 was taken out; in 1894, \$2,485,000. About 10,000 laborers were employed in the diggings in 1895. The richest field is the Yuruari district, the farthest within the Venezuelan claim, bordering on settled Venezuelan territory, and this is now entirely covered by English mining claims. The only mining in British Guiana is in this part of the disputed territory that lies mostly west of the Schomburgk line, and was never claimed nor visited by England until after the gold discoveries. The British colonial authorities look to this new industry of gold mining, at the extreme limit of their territorial claim in this region, to retrieve the decay and bankruptcy of British Guiana, where, in spite of the gold exports, the total exports have fallen off from \$12,600,000 in 1891 to \$11,700,000 in 1894, so rapid is the decline of the sugar industry, which has been the colony's only source of wealth, and has not been resuscitated by supplanting free negro labor with contract coolie labor. The sugar estates are rapidly going out of cultivation, the acreage having diminished from 79,500 acres in 1884 to 69,800 in 1894 and about 60,000 in 1895, when the process still continued at a more rapid rate, with the prospect of a reduction of 10,000 acres more in the course of another year. Hence Joseph H. Chamberlain, the British Colonial Secretary, has urged the building of a road from the Barima to the Cuyuni for the development of the northwest district of British Guiana, as the mining region is called. In a dispatch to the Governor of British Guiana in September, 1895, he said it would be necessary, in order to provide adequately for the safety of the district and secure it against incursion, to strengthen the existing police and to erect barracks at Yuruan and at one or two other points. When the Court of Policy considered a proposition of the Colonial Government prompted by this message to buy quick-firing and Gatling guns and send one of the latter to the frontier, it was vigorously opposed by the elective members, who thought it would be folly to make a show of force on the Venezuelan frontier, which could

only be reached by three weeks' traveling through the bush, one of them prophesying that the first news they would get of the Gatling gun would be of its being exhibited as a curiosity in Ciudad Bolivar. Mr. Chamberlain, considering that there was not enough capital in British Guiana or among the adventurers who were attracted to the gold fields to develop the mines with desirable rapidity, set about seeking a syndicate in England prepared to purchase for a capital sum the concession of a fair portion of the gold field in the northwest district. The white or European-born population of British Guiana in 1891 was 2,533, while there were 99,615 Africans, 105,465 East Indians, and 3,714 Chinese.

Besides Callao, there are other mines in Venezuelan Guiana worked by French, English, and Venezuelan companies. Except in the towns and mining settlements, the country is inhabited only by a few primitive tribes. The immense forests of the upper Cuyuni district, rich in quinine, rubber, cinnamon, and sarapia, are unexploited, owing to the lack of transportation facilities. A railroad has been projected to run 170 miles from the Orinoco to the Yuruan, passing through the towns of St. Felix, Upata, Guasipati, and Caratal. American companies have obtained concessions for the development of the lands, forests, and mines in this region. The Orinoco Company has a grant of 14,400,000 acres. The Manoa grant, which lapsed and was afterward resuscitated, covered about 14,000,000 acres near the mouth of the Orinoco.

The United States Congress, on Feb. 22, 1895, in a joint resolution, declared that "the President's suggestion that Great Britain and Venezuela refer their disputes as to boundaries to friendly arbitration be earnestly recommended to the favorable consideration of both parties in interest."

On July 20, 1895, Secretary Olney sent a letter to the American ambassador at London, in which he said it is impossible to treat the Schomburgk line as a matter of right, or as anything but a line originating in considerations of convenience and expediency; that the various other boundary lines suggested by Great Britain were proposed as conventional lines to which the assent of Venezuela was desired, not demanded as a matter of right; and neither party stands for a boundary line predicated upon strict legal right, Great Britain having formulated no such claim, and Venezuela insisting on the Essequibo line only as a concession to Great Britain, granted out of moderation and prudence. The Secretary of State analyzed the situation as follows:

1. The title to territory of indefinite, but confessedly very large extent is in dispute between Great Britain on the one hand and the South American republic of Venezuela on the other.

2. The disparity in the strength of the claimants is such that Venezuela can hope to establish her claim only through peaceful methods—through an agreement with her adversary either upon the subject itself or upon an arbitration.

3. The controversy, with varying claims on the part of Great Britain, has existed for more than half a century, during which period many earnest and persistent efforts of Venezuela to establish a boundary by agreement have proved unsuccessful.



4. The futility of the endeavor to obtain a conventional line being recognized, Venezuela for a quarter of a century has asked and striven for arbitration.

5. Great Britain, however, has always and continuously refused to arbitrate, except upon the condition of a renunciation of a large part of the Venezuelan claim and of a concession to herself of a large share of the territory in controversy.

6. By the frequent interposition of its good offices at the instance of Venezuela, by constantly urging and promoting the restoration of diplomatic relations between the two countries, by pressing for arbitration of the disputed boundary, by offering to act as arbitrator, by expressing its grave concern whenever new alleged instances of British aggression upon Venezuelan territory have been brought to its notice, the Government of the United States has made it clear to Great Britain and the world that the controversy is one in which both its honor and its interests are involved and the continuance of which it can not regard with indifference.

The United States had already done all that a purely sentimental interest in the affairs of the two countries justifies, but the Secretary pointed out that the settled national policy, based upon the principle of international law that a nation may justly interpose in a controversy between other nations whenever what is done or proposed is "a serious and direct menace to its own integrity, tranquillity, or welfare," imposed the right and duty upon those charged with the interests of the United States to see that the integrity of the Venezuelan territory is not impaired by the pretensions of its powerful antagonists. Washington, in his farewell address, warned his countrymen against entanglement in the politics or the controversies of European powers, and President Monroe, in his message to Congress of Dec. 2, 1823, completed the outlines of a distinctive American policy, which was enunciated in the following language :

In the wars of the European powers in matters relating to themselves, we have never taken any part, nor does it comport with our policy to do so. It is only when our rights are invaded or seriously menaced that we resent injuries or make preparations for our defense. With the movements in this hemisphere we are of necessity more immediately connected, and by causes which must be obvious to all enlightened and impartial observers. The political system of the allied powers is essentially different in this respect from that of America. This difference proceeds from that which exists in their respective governments. And to the defense of our own, which has been achieved by the loss of so much blood and treasure and matured by the wisdom of their most enlightened citizens, and under which we have enjoyed unexampled felicity, this whole nation is devoted. We owe it, therefore, to candor and to the amicable relations existing between the United States and those powers to declare that we should consider any attempt on their part to extend their system to any portion of this hemisphere as dangerous to our peace and safety. With the existing colonies or dependencies of any European power we have not interfered and shall not interfere. But with the governments who have declared their independence and maintained it, and whose independence we have, on great consideration and on just principles, acknowledged, we could not view any interposition for the purpose of oppressing them, or controlling in any other manner their destiny, by any European power in any other light than as the manifestation of an unfriendly disposition toward the United States. . . . Our policy in regard to Europe, which was adopted at an early stage of the wars which have so long agitated that quarter of the globe, nevertheless

remains the same, which is not to interfere in the internal concerns of any of its powers ; to consider the Government *de facto* as the legitimate Government for us ; to cultivate friendly relations with it and to preserve those relations by a frank, firm, and manly policy, meeting in all instances the just claims of every power, submitting to injuries from none. But in regard to these continents, circumstances are eminently and conspicuously different. It is impossible that the allied powers should extend their political system to any portion of either continent without endangering our peace and happiness ; nor can any one believe that our southern brethren, if left to themselves, would adopt it of their own accord. It is equally impossible, therefore, that we should behold such interposition in any form with indifference.

The scope and limitations of the Monroe doctrine Mr. Olney defined as follows :

The rule in question has but a single purpose and object. It is that no European power or combination of European powers shall forcibly deprive an American state of the right and power of self-government and of shaping for itself its own political fortunes and destinies.

That it has been the accepted public law of the United States ever since its promulgation, he showed from the utterances of statesmen ; from its approval by every Administration ; from the declarations of Congress, as when the House, in 1864, condemned the monarchy in Mexico, and when the Senate, in 1889, disapproved the connection of any European power with a canal across the isthmus of Darien, and from the acts and declarations of the executive branch of the Government. He affirmed that it was the most influential factor in the emancipation of South America : it compelled the French to evacuate Mexico, led to the neutralization of any inter-oceanic canal across Central America, and the exclusion of Great Britain from exercising any dominion over any part of Central America by the Clayton-Bulwer treaty, inhibited the transfer of Cuba by Spain to any other European power, and the proposed cession of Yucatan to Great Britain or Spain, and was influential in bringing about the final relinquishment of any supposed British protectorate over the Mosquito coast. In the spirit of this doctrine, President Grant, in his message of 1870, declared that existing dependencies, when the present relation of colonies ceases, are to become independent powers ; another development is the objection to the arbitration of American questions by European powers, which prompted the United States Government to refuse to mediate jointly with Great Britain and France in the war between Chili and Peru ; and on the ground, among others, that the Monroe doctrine and the prestige of the United States would be impaired Secretary Bayard strenuously resisted the enforcement of the Pelletier claim against Hayti. Mr. Olney defined the facts and principles on which the doctrine rest ; the intervening ocean, which makes any permanent political union between a European and an American state unnatural and inexpedient ; the armed truce of Europe, with which American states have nothing to do ; and the difference in moral interests, Europe being, with a single exception, monarchical, while America "is devoted to the idea that every people has an inalienable right to self-government, and in the United States has

furnished to the world the most conspicuous and conclusive example and proof of the excellence of free institutions." If the forcible intrusion of European powers is to be deprecated and should be resisted, resistance must come from the United States, since it only has the adequate strength, and Mr. Olney declared that the safety and welfare of the United States are so concerned with the maintenance of the independence of every American state against any European power as to justify and require the interposition of the United States whenever that independence is endangered. He defined the position of the United States further :

To-day the United States is practically sovereign on this continent, and its fiat is law upon the subjects to which it confines its interposition. Why? It is not because of the pure friendship or good will felt for it. It is not simply by reason of its high character as a civilized state, nor because wisdom and justice and equity are the invariable characteristics of the dealings of the United States. It is because, in addition to all other grounds, its infinite resources, combined with its isolated position, render it master of the situation and practically invulnerable as against any or all other powers. All the advantages of this superiority are at once imperiled if the principle be admitted that European powers may convert American states into colonies or provinces of their own. The principle would be eagerly availed of, and every power doing so would immediately acquire a base of military operations against us.

He pictured the disastrous consequences that would befall the United States were the struggle now going on for the acquisition of Africa transferred to South America, when all South America might be partitioned among European powers, one of the least of which would be the loss of prestige, of authority, of weight among the councils of nations, for then "our only real rivals in peace as well as enemies in war would be located at our very doors"; then "we too must be armed to the teeth, we too must convert the flower of our male population into soldiers and sailors, and by withdrawing them from peaceful industry we too must practically annihilate a large share of the productive energy of the nation." He pointed out that if the political control at stake involves the command of the mouth of the Orinoco, it is of immense consequence in connection with the whole river navigation of the interior of South America. Should Great Britain insist that it, too, is a South American state, he argued that, if the boundary question can not be settled otherwise than by force, British Guiana, with her independent resources, should be left to settle it with Venezuela; but the proposition that a European power with an American dependency is, for the purposes of the Monroe doctrine, to be classed as an American state, he thought, did not admit of serious discussion, for then any European power having a South American colony, or any one that can procure a fraction of South American soil by voluntary cession, would be enabled to extend its possessions indefinitely. The declaration in the Monroe message that existing colonies or dependencies would not be interfered with meant "colonies or dependencies then existing, with their limits as then existing." Having made it clear that the United States may legitimately insist upon the merits of the

boundary question being determined, Secretary Olney declared that the only feasible mode of determining them is by peaceful arbitration, any conventional adjustment having been found impracticable, and an appeal to arms were not only condemnable as a relic of barbarism, but "so one-sided a contest could not be invited nor even accepted by Great Britain without distinct disparagement to her as a civilized state." Great Britain admits, he wrote, that there is a controversy and that arbitration should be resorted to for its adjustment; but the practical effect of this attitude is nullified by her insistence that, as a condition of arbitrating her right to a part of the disputed territory, the remainder shall be turned over to her, consisting of territory that has always and consistently been claimed by Venezuela. It is intimated that the claim of Great Britain to this particular territory rests upon an occupation which, whether acquiesced in or not, has ripened into a perfect title by long continuance; but, even if prescription affecting territorial rights can be said to exist between sovereign states, the legitimate consequence is, "not that all arbitration should be denied, but only that the submission should embrace an additional topic, namely, the validity of the asserted prescriptive title either in point of law or in point of fact." The principle that a sovereign state can not be asked to arbitrate its political rights over its territory has no pertinency when the interests or the territorial area involved can not appreciably affect by their loss its honor or power, as Great Britain has shown by arbitrating the extent of her colonial possessions twice with the United States, once with Portugal, and once with Germany. The attitude assumed by Great Britain in refusing to arbitrate unless a part of the debatable land, designated by herself, is first abandoned to her, seemed to Mr. Olney to deprive Venezuela of her free agency and put her under virtual duress.

Lord Salisbury did not answer Mr. Olney until the points raised had been carefully considered by the law officers of the Crown. In the first of two notes, both dated Nov. 26, 1895, he dealt with the Monroe doctrine, which, he believed, had never before been advanced in a written communication addressed to another government, and which had undergone a notable development since 1823.

The formation of the Holy Alliance, the congresses of Labach and Verona, the invasion of Spain by France for the purpose of forcing upon the Spanish people a form of government which seemed likely to disappear unless it was sustained by external aid, were incidents fresh in the mind of President Monroe when he penned his celebrated message. The system of which he speaks, and of which he so resolutely deprecates the application to the American continent, was the system then adopted by certain powerful states upon the Continent of Europe of combining to prevent by force of arms the adoption in other countries of political institutions which they disliked, and to uphold by external pressure those which they approved. Various portions of South America had recently declared their independence, and that independence had not been recognized by the governments of Spain and Portugal, to which, with small exception, the whole of Central and South America were nominally subject. It was not an imaginary danger that he foresaw if he feared that the same spirit which had dictated the French expedition



into Spain might inspire the more powerful governments of Europe with the idea of imposing, by the force of European arms, upon the South American communities the form of government and the political connection which they had thrown off. In declaring that the United States would resist any such enterprise if it was contemplated President Monroe adopted a policy which received the entire sympathy of the English Government of that date.

Lord Salisbury found it intelligible that Mr. Olney should invoke "an authority which enjoys so high a popularity with his own fellow-countrymen," but the dangers apprehended by President Monroe "have no relation to the state of things in which we live at the present day." Great Britain is imposing no "system" upon Venezuela, but the British Empire and the republic of Venezuela "are neighbors having a controversy about boundaries with which the United States have no apparent concern," it being "simply the determination of the frontier of a British possession which belonged to the throne of England long before the republic of Venezuela came into existence." While denying the applicability of the Monroe doctrine to the Guiana dispute, and controverting the extension of it which invests the United States with the "novel prerogative" of demanding the submission of any frontier difference which a European power may have with a South American community to arbitration, he disclaimed any acceptance of the doctrine itself, a novel principle forming no part of international law, having never been recognized by the government of any other country. The right of the United States to interfere when their interests are affected he held to be in no way strengthened by the fact that the controversy affects American territory, and he protested against Mr. Olney's declaration that a permanent political union between a European and an American state is inexpedient and unnatural, the necessary meaning of which is that the union between Great Britain and Canada, Jamaica, Trinidad, British Honduras, or British Guiana is "inexpedient and unnatural." The British Government, he said in conclusion, was "not prepared to admit that the interests of the United States are necessarily concerned in every frontier dispute which may arise between any two of the states who possess dominion in the western hemisphere," and still less to accept the doctrine "that the United States are entitled to claim that the process of arbitration shall be applied to any demand for the surrender of territory."

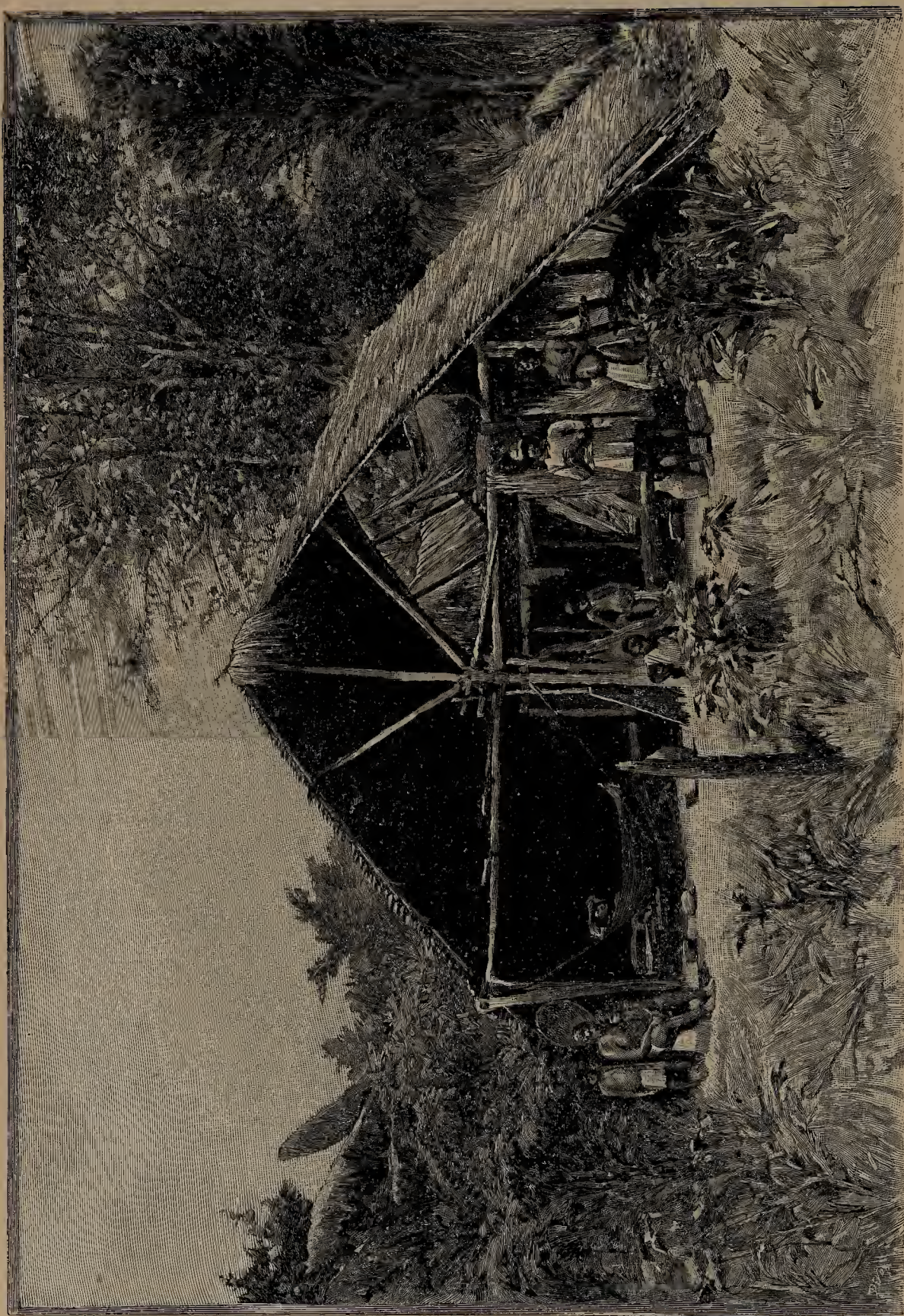
In his second note Lord Salisbury said that Great Britain's title to the territory in dispute was derived by conquest from the Dutch; that Venezuela derived no title from Spain, because Spain had not asserted ownership of it, Venezuela's argument being based upon the principle "that, inasmuch as Spain was originally entitled of right to the whole of the American continent, any territory on that continent which she can not be shown to have acknowledged in positive and specific terms to have passed to another power can only have been acquired by wrongful usurpation, and, if situated to the north of the Amazon and west of the Atlantic, must necessarily belong to Venezuela as her self-constituted inheritor in those regions." The Schomburgk line he described as a great

reduction of the boundary claimed by Great Britain as matter of right, which has been held from the first to comprise the coast line up to the river Amacuka and the whole basin of the Essequibo river and its tributaries. A portion of this claim, said Lord Salisbury, the British authorities have always been willing to waive altogether; in regard to another portion they have been, and continue to be perfectly ready to submit the question of their title to arbitration; but "as regards the rest, that which lies within the so-called Schomburgk line, they do not consider that the rights of Great Britain are open to question." Sir R. Schomburgk, he said, "did not discover or invent any new boundaries. He took particular care to fortify himself with the history of the case. He had further from actual exploration and information obtained from the Indians, as at Point Barima, and from local traditions, as on the Cuyuni, fixed the limits of the Dutch possessions and the sphere from which all Spanish influence was absent." Even within that line they have offered, he asserted, considerable concessions as a matter of friendship and conciliation, and if these concessions, as time has gone on, "diminished in extent and have now been withdrawn, this has been the necessary consequence of the gradual spread over the country of British settlements, which her Majesty's Government can not, in justice to the inhabitants, offer to surrender to foreign rule." In conclusion, he refused, in behalf of the British Government, "to submit to arbitration of another power or to foreign jurists, however eminent, claims based upon the extravagant pretensions of Spanish officials of the last century and involving the transfer of large numbers of British subjects, who have for many years enjoyed the settled rule of a British colony, to a nation of different race and language, whose political system is subject to frequent disturbance, and whose institutions as yet too often afford very inadequate protection to life and property."

After the receipt of the British Government's refusal to arbitrate except in regard to territory west of the Schomburgk line and not yet claimed by the miners from Guiana, President Cleveland laid the matter before Congress, on Dec. 17, in the following message:

In my annual message addressed to the Congress on the 3d inst I called attention to the pending boundary controversy between Great Britain and the republic of Venezuela, and recited the substance of a representation made by this Government to her Britannic Majesty's Government, suggesting reasons why such dispute should be submitted to arbitration for settlement, and inquiring whether it would be so submitted. The answer of the British Government, which was then awaited, has since been received, and, together with the dispatch to which it is a reply, is hereto appended. Such reply is embodied in two communications addressed by the British Prime Minister to Sir Julian Pauncefote, the British ambassador at this capital. It will be seen that one of these communications is devoted exclusively to observations upon the Monroe doctrine, and claims that in the present instance a new and strange extension and development of this doctrine is insisted on by the United States; that the reasons justifying an appeal to the doctrine enunciated by President Monroe are generally inapplicable "to the state of things in which we live at the present day," and especially in-





GALIBI HOUSE ON THE MARONI.



applicable to a controversy involving the boundary line between Great Britain and Venezuela.

Without attempting extended argument in reply to these positions, it may not be amiss to suggest that the doctrine upon which we stand is strong and sound because its enforcement is important to our peace and safety as a nation and is essential to the integrity of our free institutions and the tranquil maintenance of our distinctive form of government. It was intended to apply to every stage of our national life, and can not become obsolete while our republic endures. If the balance of power is justly a cause for jealous anxiety among the governments of the Old World and a subject for our absolute noninterference, none the less is an observance of the Monroe doctrine of vital concern to our people and their Government.

Assuming, therefore, that we may properly insist upon this doctrine without regard to the state of things in which we live or any changed conditions here or elsewhere, it is not apparent why its application may not be invoked in the present controversy. If a European power, by an extension of its boundaries, takes possession of the territory of one of our neighboring republics against its will and in derogation of its rights, it is difficult to see why to that extent such European power does not thereby attempt to extend its system of government to that portion of this continent which is thus taken. This is the precise action which President Monroe declared to be "dangerous to our peace and safety," and it can make no difference whether the European system is extended by an advance of frontier or otherwise. It is also suggested in the British reply that we should not seek to apply the Monroe doctrine to the pending dispute because it does not embody any principle of international law which is "founded on the general consent of nations," and that "no statesman, however eminent, and no nation, however powerful, are competent to insert into the code of international law a novel principle which was never recognized before and which has not since been accepted by the Government of any other country." Practically, the principle for which we contend has peculiar if not exclusive relation to the United States. It may not have been admitted in so many words to the code of international law, but, since in international councils every nation is entitled to the rights belonging to it, if the enforcement of the Monroe doctrine is something, we may justly claim it has its place in the code of international law as certainly and as securely as if it were specifically mentioned; and when the United States is a suitor before the high tribunal that administers international law, the question to be determined is whether or not we present claims which the justice of that code of law can find to be right and valid. The Monroe doctrine finds its recognition in the principles of international law, which are based upon the theory that every nation shall have its rights protected and its just claims enforced. Of course, this Government is entirely confident that under the sanction of this doctrine we have clear rights and undoubted claims. Nor is this ignored in the British reply. The Prime Minister, while not admitting that the Monroe doctrine is applicable to present conditions, states that in declaring that the United States would resist any such enterprise if it were contemplated, President Monroe adopted a policy which received the entire sympathy of the English Government of that date. He further declares that though the language of President Monroe is directed to the attainment of objects which most Englishmen would agree to be salutary, it is impossible to admit that they have been inscribed by any adequate authority in the code of international law. Again, he says they (her Majesty's Government) fully concur with the view which President Monroe apparently entertained—that any disturbance of existing territorial distribution in that hemisphere by any fresh acquisitions on the part of any European state would be highly inexpedient.

In the belief that the doctrine for which we contend was clear and definite, that it was founded upon substantial considerations and involved our safety and welfare, that it was fully applicable to our present conditions and to the state of the world's progress, and that it was directly related to the pending controversy, and without any conviction as to the final merits of the dispute, but anxious to learn in a satisfactory and conclusive manner whether Great Britain sought, under a claim of boundary, to extend her possessions on this continent without right, or whether she merely sought possession of territory fairly included within her lines of ownership, this Government proposed to the Government of Great Britain a resort to arbitration as a proper means of settling the question, to the end that the vexatious boundary dispute between the two contestants might be determined and our exact standing and relation in respect to the controversy might be made clear. It will be seen from the correspondence herewith submitted that this proposition has been declined by the British Government upon grounds which in the circumstances seem to me to be far from satisfactory. It is deeply disappointing that such an appeal, actuated by the most friendly feelings toward both nations directly concerned, addressed to the sense of justice and to the magnanimity of one of the great powers of the world, and touching its relations to one comparatively weak and small, should have produced no better results.

The course to be pursued by this Government, in view of the present condition, does not appear to admit of serious doubt. Having labored faithfully for many years to induce Great Britain to submit this dispute to impartial arbitration, and having been now finally apprised of her refusal to do so, nothing remains but to accept the situation, to recognize its plain requirements, and to deal with it accordingly. Great Britain's present proposition has never thus far been regarded as admissible by Venezuela, though any adjustment of boundary which that country may deem for her advantage and may enter into of her own free will can not, of course, be objected to by us. Assuming, however, that the attitude of Venezuela will remain unchanged, the dispute has reached such a stage as to make it now incumbent upon the United States to take measures to determine with sufficient certainty for its justification what is the true divisional line between the republic of Venezuela and British Guiana. An inquiry to that end should, of course, be conducted carefully and judicially, and due weight should be given to all available evidence, records, and facts in support of the claims of both parties. In order that such examination should be prosecuted in a thorough and satisfactory manner, I suggest that Congress make an adequate appropriation for the expenses of a commission, to be appointed by the Executive, who shall make the necessary investigation and report upon the matter with the least possible delay. When such report is made and accepted it will, in my opinion, be the duty of the United States to resist by every means in its power, as a willful aggression upon its rights and interests, the appropriation by Great Britain of any lands or the exercise of governmental jurisdiction over any territory which, after investigation, we have determined of right to belong to Venezuela.

In making these recommendations I am fully alive to the full responsibility incurred and keenly realize all the consequences that may follow. I am nevertheless firm in my conviction that, while it is a grievous thing to contemplate the two great English-speaking peoples of the world as being otherwise than friendly competitors in the onward march of civilization and strenuous and worthy rivals in all the arts of peace, there is no calamity which a great nation can invite which equals that which follows supine submission to wrong and injustice and a consequent loss of national self-respect and honor, beneath which is shielded and defended the people's safety and greatness.

The Congress having unanimously authorized the appointment of commissioners to report upon the true divisional line between British Guiana and Venezuela, the President appointed a commission composed as follows: Justice David J. Brewer, of the United States Supreme Court; Chief-Justice Alvey, of the Court of Appeals of the District of Columbia; Andrew D. White, of New York; Frederick R. Coudert, of New York; and Daniel C. Gilman, President of Johns Hopkins University, Baltimore.

**VERMONT**, a New England State, admitted to the Union March 4, 1791; area, 9,565 square miles. The population, according to each decennial census since admission, was 154,465 in 1800; 217,895 in 1810; 235,966 in 1820; 280,652 in 1830; 281,948 in 1840; 314,120 in 1850; 315,098 in 1860; 350,551 in 1870; 332,286 in 1880; and 332,422 in 1890. Capital, Montpelier.

**Government.**—The following were the State officers during the year: Governor, Urban A. Woodbury; Lieutenant Governor, Zophar M. Mansur; Secretary of State and Insurance Commissioner, Chauncey W. Brownell, Jr.; Treasurer, Henry F. Field; Auditor, Franklin D. Hale; Adjutant General, T. S. Peck; Superintendent of Education, Mason S. Stone; Bank Inspector, Frederick E. Smith; Railroad Commissioners, Olin Merrill, Orion M. Barber, Charles J. Bell; Chief Justice of the Supreme Court, Jonathan Ross; Associate Justices, John W. Rowell, Russell S. Taft, Henry R. Start, L. H. Thompson, James M. Tyler, Loveland Munson—all Republicans.

**Finances.**—The total State expenses for the year ending June 30, 1895, were \$683,863.67. The cost of the Legislature of 1894 was \$58,815.04. The payments into the treasury by towns of all profits upon the sales of liquors in excess of 10 per cent., according to the law of 1894, amounted to only \$544.36, many towns having reduced the selling prices. The estimate of the income for the year 1895-'96 from State and corporation taxes place it at \$520,000.

**Education.**—The number of public schools in the State is 2,292; the aggregate cost in 1882 was \$476,478.08; in 1892 it had risen to \$735,480.18, and in 1894 to \$783,805.40. Of this amount, \$561,809.89 was paid to teachers in 1894. The number of children in parochial schools is 3,118. In 1892 it was 4,305. The expenditure *per capita* of population in 1890-'91 was \$2.18. The total valuation of school property is \$1,022,086.95.

**Charities.**—Preparations for the completion of the insane asylum at Waterbury were finished early in the year, and the contract was let. The State has bought a farm of 60 acres adjoining the asylum property for \$7,000. The cost of finishing the buildings will be about \$90,000.

The report of the Soldiers' Home, at Bennington, shows that the number cared for during the year was 127; the number of inmates June 30, 1895, was 104. Four had died, and 18 were in hospital. The receipts for the year ending June 30, 1895, including \$2,065.65 cash on hand at the beginning of the fiscal year, were \$18,518.21. The amount on hand was \$800.64, from which it appears that the current expenses and ordinary repairs amounted to \$17,317.57. The cost *per capita* was \$228.08.

**Insurance.**—Fire insurance companies have long maintained that their losses incurred in Vermont and the expense of doing the business largely exceed the premiums. In 1894 the premiums amounted to \$763,429.77; the losses incurred were \$716,571.27, or about 94 per cent. of the premiums. Individual instances are given of losses largely exceeding premiums, and, in the case of 20 of the 45 companies doing business in the State, the losses exceed the premiums in varying amounts.

The report of the National Life Insurance Company of Vermont, which has been in business for forty-five years, shows that the net assets aggregated at the beginning of the year \$10,205,635.60. It had received during the year \$2,931,322.50. It had paid in death claims \$476,758.23; in matured endowments and surrendered policies, \$607,669.28; in surplus returned, \$122,179.81; aggregating \$1,206,607.32 returned to policyholders. The total expenses had been \$651,171.63. Interest due and accrued, unreported and deferred premiums, and premium on stocks and bonds aggregated \$840,041.11, making the gross assets \$11,045,676.71. The total liabilities as to policyholders, including computed reserve (actuaries' 4 per cent.), \$9,216,926.10, and extra reserve of life-rate endowments, \$354,216.54, were \$9,614,962.69, leaving a surplus (4 per cent.) of \$1,430,714.02, or, computed at 4½ per cent., of \$2,075,898.85. It has now in force 30,186 policies, insuring \$64,975,950. In new business the following is the record for 1894: Policies issued and revived, 6,813, insuring \$14,769,916; increase in gross ledger assets, \$1,158,824.70; increase in surplus, \$296,621.66; increase in interest received, \$55,932.88. The gain during the year of the number of policies in force is 1,842; in insurance in force, \$3,343,337; in receipts from premiums, \$83,887.32. The payment for death claims was \$57,931.19 less than in 1893, but payments to policyholders \$117,963.15 more.

**Industries and Products.**—The report of Victor I. Spear, Secretary of the Board of Agriculture, shows that \$1,142,650 was invested during 1894 in new manufacturing enterprises and that employment is given by them to 1,367 persons. The amount of new capital invested is nearly three times the amount for 1893, with more than double the number of employees. During the four years just past \$3,108,960 in capital was invested, giving employment to 5,264 persons. The largest two industries undertaken were the cotton mill at Burlington and the furniture factory at Canaan, the former with a capital of \$400,000, and the latter with \$250,000.

The number of farms sold in 1894 was 1,973, of which 155 were unoccupied. The total sales of this class of farms in five years were 909.

There were 650 hotels, boarding houses, and private dwellings open for guests during the summer.

At the beginning of the year there were 190 dairy factories in the State, receiving milk from about 100,000 cows, and several were established during the year. The largest is at St. Albans, where 11 tons of butter were made in a single day in 1895.

Vermont is interested in the sugar bounty, as



one third of the entire crop of maple sugar in the country is made there. The bounty for 1894 amounted to \$81,270.90.

New marble quarries have been opened in Washington and Barre.

**New Cities.**—Montpelier and Barre received charters from the Legislature of 1894. The census of Montpelier, finished in the summer, shows a total population of 5,045. The increase since 1880 is 1,808; since 1890 it is 900. The indebtedness of the city is \$128,871.33. Montpelier has a new free library, finished in 1895, called the Kellogg-Hubbard Library, from the names of the donors. The Montpelier Public Library received an offer from Thomas W. Wood, President of the Academy of Design in New York, a native of the city, to establish as a part of the library "an attractive collection of oil paintings, water colors, and etchings, for the benefit of students who may wish to copy these works of art, as well as for the gratification and education of the public," provided the library should be removed to the building of the Young Men's Christian Association. The gift was accepted, and the gallery was opened formally in August. The collection contains 24 oil paintings, 11 etchings, and 7 water colors. The two latter exhibits are original works of the donor in conception and execution; but of the oil paintings, there are 14 copies from the works of famous men. Another gift to the capital city is a cottage hospital, which was in process of erection during the year at a cost of \$20,000 to \$25,000; it is the gift of a citizen, Homer W. Heaton.

**Revision of the Statutes.**—The statutes as revised by the committee and accepted by the Legislature of 1894, which gave the copy to the printers in July, went into effect Aug. 1.

**State Boundary.**—The Boundary-line Commission of the States of Vermont, New Hampshire, and Massachusetts finished its work in the summer. The meeting point of the three States was fixed on the west bank of Connecticut river, just east of the South Vernon Railroad station, at about low-water mark. A monument of rubble masonry will be put deep in the soil, reaching to the surface; then a properly inscribed marker of granite is to be erected, referring to the actual corner. About 60 monuments are to be erected between Vermont and Massachusetts. The line as defined between Vermont and Massachusetts runs through the ladies' room of the railroad station at South Vernon.

**Bennington-battle Day.**—The last Legislature made a law providing that Aug. 16 shall be a legal holiday, to be known as Bennington-battle Day, and it was so observed this year. The report of the Bennington Battle Monument Association shows that the receipts from visitors are more than sufficient to pay expenses.

**Legislative Reunion.**—A reunion of present and past members of the Legislature was held at Montpelier, Oct. 2 and 3. It was estimated that there were 3,000 or more ex-members living—many in other States—and invitations were sent to all. Hon. W. P. Dillingham was chosen president of the Reunion Association. There was a procession in the morning of Oct. 2, with about 800 in line, and a session of the Sen-

ate in the afternoon, at which the Lieutenant Governor presided. In the evening the Governor and ex-governors held a reception in the executive chamber. In the afternoon of Thursday, the second day, a session of members and ex-members of the House was held, after an historical address by ex-Gov. Stewart. The evening was given to a banquet. A similar reunion, the first of its kind, was held in October, 1885.

**VIRGINIA**, a Southern State, one of the original thirteen, ratified the Constitution June 25, 1788; area, 42,450 square miles. The population, according to each decennial census, was 747,610 in 1790; 880,200 in 1800; 974,600 in 1810; 1,065,116 in 1820; 1,211,405 in 1830; 1,239,797 in 1840; 1,421,661 in 1850; 1,596,318 in 1860; 1,225,163 in 1870; 1,512,565 in 1880; and 1,655,980 in 1890. Capital, Richmond.

**Government.**—The following were the State officers during 1895: Governor, Charles T. O'Ferrall, Democrat; Lieutenant Governor, Robert C. Kent; Secretary of the Commonwealth, James T. Lawless; Attorney-General, R. Taylor Scott; First Auditor, Morton Marye; Second Auditor, Josiah Ryland, Jr.; Treasurer, A. W. Harman; Adjutant General, Charles J. Anderson; Superintendent of Public Instruction, John E. Massie; Commissioner of Agriculture, Thomas Whitehead; President of the Court of Appeals, James Keith; Justices, John W. Riely, John A. Buchanan, George M. Harrison, and Richard H. Cardwell.

**Finances.**—The report of the Auditor for the year ending Sept. 30, 1895, showed the following figures: Amount on hand Oct. 1, 1894, \$132,235.99; receipts from all sources during the year, \$3,333,257.57; total, \$3,465,493.56; disbursements during the year, \$3,404,097.92; balance on hand Oct. 1, 1895, \$61,395.64. Among the receipts were \$693,450.17 from licenses; \$368,119.91 from personal property; \$1,059,339.49 from real estate; \$211,578.29 from railroads; \$156,850.58 from tax on law processes; and \$64,981.88 from insurance companies; and among the disbursements were \$722,331.32 for interest on the public debt and bonds held by educational institutions; \$337,868.87 for the support and care of lunatics; \$362,682.08 for account of criminal charges; \$947,634.98 for the support of public education; \$118,497.58 for account of the State Penitentiary; and \$113,553.96 for expenses connected with the erection of the library building.

The Second Auditor reported for the year ending Sept. 30, 1895, concerning the State debt: Amount of bonds and certificates (3 per cent.) issued under acts of Feb. 14, 1882, and Nov. 29, 1884, \$9,289,067.17; amount canceled, \$600,704.01; amount held by the commissioners of the sinking fund and canceled, \$2,357,576.60; leaving amount outstanding \$6,330,786.56, of which \$1,430,327.28 was held by the literary fund and \$4,900,459.28 by the public. The amount of bonds and certificates issued under the act of Feb. 20, 1892, and its amendment of Jan. 31, 1894 (2 per cents.), was \$17,677,253.54; canceled, \$1,551; leaving \$17,675,702.54, of which the sinking and literary funds held \$368,500, and the public \$17,307,202.54. The amount of bonds and certificates outstanding Oct. 1, 1895, issued under acts prior to Feb. 14, 1882 (the

unfunded bonds reduced one third for West Virginia's portion), was \$1,028,217.74; amount of interest outstanding due to July 1, 1891, \$1,624,252.67; total, \$2,652,470.41. There was held by the United States Government, in trust for certain Indian tribes, bonds of the State of Virginia, which, with interest to July 1, 1891, amounted to \$1,495,678, two thirds of which, deducted from the preceding amount of \$2,652,470.71, leaves \$1,655,351.74. The Literary fund held a total in bonds and a loan of \$1,464,227.28.

**Valuations.**—Under the reassessment of 1895 the total value of land, town lots, and buildings was fixed at \$189,571,619 in the counties and \$112,496,521 in the cities, an aggregate of \$302,068,140. The land books of 1895 fixed this total at \$313,182,340, of which \$302,753,610 was charged against white persons and \$10,428,730 against colored. The total assessed valuation of personal property was \$83,132,476, of which \$79,958,026 was charged against white persons and \$3,174,450 against colored persons. Of the aggregate tax assessed (\$1,983,042.30) the amount against white persons was \$1,808,234.21, and against colored persons \$174,808.09.

**Banks.**—On Oct. 31, 1895, there were 37 national banks in operation and 16 in liquidation. The active banks had a combined capital of \$4,796,300; United States bonds on deposit, \$2,096,750; outstanding circulation, \$1,992,339; excess of United States bonds over the amount required, \$1,061,500; loans and discounts, \$15,677,095; coin and coin certificates, \$859,623.40; deposits, \$13,829,545; reserve required, \$2,074,432; and reserve held, \$3,314,248. The State banks on July 11, 1895, numbered 85, and had an aggregate capital of \$6,503,896; loans and discounts, \$17,898,196; resources, \$25,040,095; deposits, \$14,604,673; and surplus and undivided profits, \$2,520,908. The State banks held a total of \$1,493,658 in specie, paper currency, and unclassified cash. The aggregate banking capital of the State was \$11,300,196.

**Education.**—The school census of 1895 showed that there were in the State 665,533 children of school age, of whom 397,030 were white and 268,503 colored. The enrollment in the public schools was 235,533 white children and 120,453 colored—total, 355,986; and the average daily attendance was 137,830 whites and 64,700 colored—total, 202,530. There were 8,278 public schools in operation, 6,035 for white children and 2,243 for colored. The teachers numbered 8,292, of whom 6,211 were white, 2,081 colored, 3,039 males, and 5,253 females. The estimated value of school property owned by districts was \$2,982,828.98; revenue of the school system, \$1,824,287.77; and expenditures for current expenses, \$1,622,392.94; for permanent improvements, \$185,199.46; total, \$1,807,592.40. At the close of the school year 1894 there were 9 universities and colleges of liberal arts, with a total of 152 professors and instructors and 1,971 students in all departments, of whom 1,763 were males and 208 females. These institutions had 141,650 volumes in their libraries, \$403,200 invested in scientific apparatus and libraries, \$2,123,000 in grounds and buildings, and \$1,867,982 in productive funds, and received from tuition fees \$94,175, from productive funds \$99,823, and from Federal, State, and other ap-

propriations \$40,000—total income, \$297,775; and benefactions, \$22,565. The public high schools numbered 31, and had 89 instructors and 1,867 pupils; the endowed academies, seminaries, and other private secondary schools, 53, with 148 instructors, 2,225 pupils in secondary grades, of whom 98 were colored, and 24,000 volumes in the libraries; and the colleges exclusively for women, 14, with 176 instructors, 1,869 students in all departments, and 9,260 volumes in the libraries. There were 2 public normal schools, with 21 instructors and 274 students in the normal course and 269 in the nonprofessional course; and 2 private normal schools, Hampton Normal and Agricultural Institute and Hartshorn Memorial College, with 87 instructors and 386 students in the normal course and 423 in the nonprofessional course. Commercial and business colleges numbered 4, and had 13 instructors and 542 students in day classes and 80 in evening classes. The financial report of the Virginia Agricultural and Mechanical College for the school year 1894-'95 showed: Receipts from the State, \$18,500; from the United States Government, under the act of Congress of 1862, \$20,569; under the act of 1890, \$13,333, and for support of experiment station, \$15,000; and from fees and all other sources, \$15,509—total, \$82,911; and expenditures for the college proper, \$66,036; for the experiment station, \$20,594—total, \$86,630. The Hampton Normal and Agricultural Institute for colored students and Indians had receipts in the same period of \$10,329 from the United States Government under the act of 1862, and \$6,668 under that of 1890, and \$121,848 from fees and all other sources—total, with balance of \$6,168 from 1894, \$145,013; and expenditures for all departments, \$128,852.

The main building of the University of Virginia, at Charlottesville, was destroyed by fire on Oct. 27. The institution had 46 professors and instructors, 567 students, 53,000 volumes in its library, \$274,600 invested in productive funds, income of \$136,000, and benefactions \$55,000. The calamity aroused the friends of the university everywhere and elicited prompt and liberal means for rebuilding and refurnishing.

**Mineral Resources.**—According to the report of the United States Geological Survey on "Mineral Resources of the United States in 1894," issued in 1895, Virginia's production of coal aggregated 1,229,083 short tons valued at \$933,576, an increase of 408,744 tons in quantity and \$240,828 in value over the output of the previous year. The number of persons employed in the mines was 1,635, and the number of days worked in the year two hundred and thirty-four. Because of its exemption from the miners' strike, the Pocahontas field increased its output nearly 50 per cent. over that of the preceding year, or from 779,590 short tons to 1,158,437. Of the total product of the State, 1,015,713 short tons were loaded at the mines for shipment, 21,162 were sold to local trade or used by employees, 4,690 were used at the mines for steam and heat, and 187,518 were burned into coke. Two coking plants had 736 ovens completed and 100 building, used 280,524 short tons of coal, and had an output of 180,091 short tons of coke, valued at \$295,747. The State ranked fourth in the



production of iron ore. For the purpose of not revealing individual operations Virginia and West Virginia were grouped, but little of the iron ore came from the latter State, and the output may be practically credited to Virginia. The aggregate production was 35,843 long tons of red hematite, 562,493 of brown hematite, and 2,226 of magnetite—total, 600,562 long tons; value, \$873,305. Twenty-two out of 30 furnaces were in blast during the year, and the production of pig iron was 298,086 long tons; production in the first half of 1895, 142,580 long tons. The output of manganese was 1,797 long tons; value, \$16,658. Quarry operations yielded granite to the value of \$123,361, principally in Chesterfield, Amherst, Henrico, Alexandria, Campbell, and Dinwiddie Counties; slate, \$138,151, chiefly in Buckingham County, with some in Amherst and Albemarle Counties; and limestone, \$284,547, mostly in Botetourt, Warren, Alleghany, and Shenandoah Counties. There were 104 clay-working plants, which had outputs valued as follow: Common and pressed brick, \$779,285; fancy and ornamental brick, \$76,474; fire brick, \$4,794; vitrified paving brick, \$52,750; drain tile, \$10,705; tile other than drain, \$6,696; and miscellaneous, \$6,889; total, \$937,593. The State ranked first in the number of mineral springs, of which 30 out of 34 reported an output for commercial sale of 402,827 gallons; value, \$80,715.

**Taxable Manufactures.**—The collections of internal revenue in the fiscal year ending June 30, 1895, amounted to \$2,607,181.90, an increase of \$59,258.55 over those of the previous fiscal year. There were 241 single-account tobacco factories, which used 1,289,050 pounds of tobacco for cigars and 3,362,282 pounds for cigarettes, and had an output of 86,752,368 cigars and 822,654,500 cigarettes; and 134 other tobacco factories, which used 41,235,067 pounds of leaf, 570,954 pounds of scraps, 1,505 pounds of stems, 2,610,110 pounds of licorice, 1,885,094 pounds of sugar, and 1,861,712 pounds of other materials, and had an output of 31,402,678 pounds of plug tobacco, 4,151,187 pounds of smoking tobacco, and 725,500 pounds of snuff. Out of 322 registered grain, molasses, and fruit distilleries, 102 grain and 149 fruit were in operation. The production of fruit brandy was 4,160 gallons; fermented liquors, 76,617 barrels; amount of spirits rectified, 708,165 gallons; and amount of distilled spirits gauged, 1,632,986 taxable gallons.

**Agriculture.**—The United States Department of Agriculture reported as follows on the principal crops of Virginia in the calendar year 1895: Corn, 1,753,073 acres, 32,607,158 bushels, value \$12,064,648; wheat, 699,525 acres, 6,505,583 bushels, value \$4,228,629; oats, 459,043 acres, 8,125,061 bushels, value \$2,437,518; rye, 45,141 acres, 496,551 bushels, value \$258,207; potatoes, 41,525 acres, 3,031,325 bushels, value \$1,151,904; and hay, 685,488 acres, 774,601 tons, value \$8,853,689; total value, \$28,994,595. The same authority reported in 1895 on the tobacco crop of the calendar year 1894 as follows: Acreage, 54,592; yield, 35,593,984 pounds; value \$2,135,639. Cotton planting was confined to about 12 counties in the southeastern portion of the State, and the acreage was controlled largely

by the comparative prices of cotton and peanuts, as both crops are grown in the same section, and a preference is given to the one bringing the best price.

**Live Stock.**—The estimates on the number and value of domestic animals on farm, Dec. 31, 1895, were as follow: Horses, 246,046, value \$9,808,229; mules, 38,248, value \$2,134,133; milch cows, 265,635, value \$4,818,619; oxen and other cattle, 386,675, value \$6,138,896; sheep, 426,889, value \$894,760; and swine, 985,748, value \$3,768,514; total value, \$27,563,151.

**Fisheries.**—The Commissioner of Fisheries reporting for the year ending Dec. 31, 1895, stated that the attention of the commission had been directed almost wholly to the propagation of Spanish mackerel, and that 6,500,000 fry had been liberated from the hatchery on Chesapeake Bay. Excepting shad, the catch of which is constantly increasing, all the finer varieties of fish are becoming less abundant. The United States Commissioner estimated that the yield of the shore fisheries of Virginia, exclusive of shellfish, crustacean, and reptilian fisheries, amounts annually to \$665,000. The crabbing industry on the East Shore amounts annually to \$60,000. The commissioner gave Virginia second rank among the States in the oyster industry, following Connecticut and preceding Maryland. He declared that the State owns 204,000 acres of natural oyster beds of an actual and immense money value and 400,000 acres of planting ground, and that the planting industry has yielded nearly one half of the oyster revenue collected by the State, in spite of legislation that has cramped and circumscribed its development. He was convinced that with businesslike legislation, Virginia would soon become the foremost oyster-producing State in the Union.

**Political.**—The General Assembly met in regular biennial session and organized on Dec. 4, 1895, by electing Senator Lovenstein president *pro tem.* of the Senate, and John F. Ryan Speaker of the House. In his annual message, Gov. O'Ferrall called attention to the proposed constitutional convention, and discussed the principal reasons that had been urged in its favor; that the expenses of the State government could be diminished by returning to the old system of county courts, reducing the number of circuit judges and superintendents of public schools, abolishing the office of county treasurer, and imposing the duties now performed by him on the sheriff, and changing existing criminal laws in many particulars. The State treasury had been able to meet promptly every demand made on it, and scarcely at any period in her history have the finances of the State been in better condition. He regarded the public debt as having been settled on a basis honorable to the State and satisfactory to its creditors, and he could conceive of no condition of affairs that could arise to renew any contention over it. Concerning the Walton election law, he expressed the belief that so far its effects must meet with the hearty support of every citizen who values orderly elections, condemns the use of money at the polls, and desires a free, untrammelled, and unpurchased expression of the will of the people. The Governor denounced lynching severely, and recommended the prompt

enactment of laws that would put an end to it. He also recommended the amendment of the Code, so as to conform to enlightened public sentiment, making prize fighting a felony, and a glove contest, whether in public or private or for any consideration whatever, also a felony. The act of 1894 against gambling on horse races had not had the beneficial result expected, and the Governor recommended that the act be amended by striking out the exception in favor of agricultural associations or fairs and driving clubs or parks, urging that the selling of books or making of pools or mutuels should be absolutely prohibited.

Among the legislative bills approved were

those to amend the act to provide for the settlement of the public debt of the State, not funded under the act to ascertain Virginia's debt at the time of the portion of her territory; to make the rector and visitors of the University of Virginia to repair the loss sustained by the fire there; to amend sections of the Code in relation to the proceedings against delinquent treasurers and their sureties; to authorize a vote in the city of Danville and town of Neapolis on the question of uniting the city and town in one city; to give a defendant in any case of misdemeanor the right to waive trial by jury; and to amend an act in reference to property that may be distrained for taxes.

## W

**WASHINGTON**, a Pacific coast State, admitted to the Union Nov. 11, 1889; area, 69,180 square miles; population, according to the census of 1890, 349,390; estimated in 1894 at 410,000. Capital, Olympia.

**Government.**—The State officers for the year were: Governor, John H. McGraw, Republican; Lieutenant Governor, Frank H. Luee; Secretary of State, James H. Price; Treasurer, Ozro A. Bowen; Auditor, J. E. Frost, succeeding L. R. Grimes, deceased; Attorney-General, William C. Jones; Superintendent of Public Instruction, Charles W. Bean; Land Commissioner, William T. Forrest; Acting Adjutant General, E. C. MacDonald; State Printer, Oliver C. White; Secretary of the Board of Health, Dr. George S. Armstrong; State Librarian, G. A. Kennedy, succeeding F. T. Gilbert, deceased; Chief Justice, R. O. Dunbar; Associates, T. C. Stiles, John P. Hoyt, T. J. Anders; Superior Judge, Mason Irwin; United States Senator, John L. Wilson.

**Finances.**—The Treasurer's report for December shows a total cash balance of \$213,517.28. The total value of real and personal property in the State in 1895, as equalized by the State Board in October, was \$204,190,377. The increase on railroad property was \$54,014; on personal property, \$7,193. Real property was lowered \$43,790. The levy in Seattle was 12.5 in the old limits and 9.4 in the new. In King County the amount was \$42,260,615, and in Pierce \$34,499,410.

**Legislative Session.**—The fourth assembly of the legislative body was convened on the first Monday in January, and adjourned March 20. It passed 178 bills, only 2 of which were vetoed. One enactment abolishes prize fighting; the killing of singing birds is made punishable by a fine of not less than \$50 or more than \$100. Obstruction of railways brings imprisonment for twenty years; when life is lost by such obstruction it is considered murder. The people are to be permitted to plant oysters, and hold as personal property and be protected in tide and shore lands pending sale, lease, or reservation of such lands by the State. The anniversary of Abraham Lincoln's birth, Feb. 12, is made a holiday. The powers of State boards were in some particulars increased and new boards were created. The Stock Board is to guard against false entries, and to use stringent measures regarding the

care of stock. The Dairy Commissioners shall impose analysis upon State chemists and guard against adulteration. The Horticultural Board is given full power to attempt keeping pests in check, and liberal appropriations are made. A Grain Commission was also appointed. The new Adjutant General is an officer of the regular United States service. Other measures that became laws were as follow:

To provide for diking districts.

To compel street railway companies to require not more than ten hours' labor in twenty-four.

To punish deception in the sale of nursery stock.

Relating to the descent of real estate of deceased persons.

Creating a professor of veterinary science, to be added to the regular Health Board.

To amend the act for the preservation of large game.

To provide for State grain weighing and grading.

To grant title to land conveyed to aliens prior to the adoption of the State Constitution.

To provide for creating drainage districts.

For the relief of innocent applicants for the purchase of tide lands.

To prevent destruction of game on certain islands.

For the protection of Eastern oysters.

For the protection of trout.

Exempting the proceeds of life insurance from liability for debt.

To prohibit minors entering saloons.

To amend the act relating to the purchase of jute and other fabrics.

To amend the act relating to the organization of corporations.

Relating to trade-marks.

To establish the legal rate of interest in the State at 8 per cent. The contract rate may be as high as 12 per cent.

To punish fraud in the sale of stock.

Authorizing the establishment of public libraries in cities.

Establishing a fiscal agency in New York.

To prevent the spread of contagious diseases among cattle.

**State Lands.**—The Land Office business shows an increase of immigration. For the month of July, at the Olympia Land Office, the total number of acres sold was 4,134.34, for which \$6,267.05 was received. There were 8 homestead entries, comprising 783.54 acres; 58 final proofs, covering 8,397.37 acres; 6 timber-land entries; and 1 military land location.

**Harbor Improvements.**—The harbor at Olympia has been deepened to 12 feet. The ap-



appropriation was exhausted by March 1. The report of the engineer, Capt. T. W. Symonds, in charge of the improvements says:

The water way connecting Puget Sound with lakes Union and Washington contemplates the construction of a ship canal to connect the waters of the lakes with Puget Sound. A preliminary survey was made under the appropriation of 1890, and the work of last season was devoted to a verification of the surveys and to preparation for securing the right of way. This work is still in progress. The procurement of right of way is a work of considerable magnitude and expense.

The river and harbor appropriation passed in December included additional appropriation for Hoquiam.

**State Capitol.**—The foundation of the Capitol was completed June 13. The Capitol Commission resolved, in December, to issue the Capitol warrants in one block, and the legality of their act was laid before the Supreme Court, which sustained them in their intentions as proposed, and as firms were found ready to pay cash for them at par, the letting of the contracts was assured, and the next session of the Legislature is to be held in the new building.

**State Institutions.**—The State has property of great value, as follows:

Penitentiary at Walla Walla, farm and grounds, jute mill, brickyard, buildings, and other improvements, \$504,243.09.

Western Washington Hospital for the Insane, at Fort Steilacoom, lands, buildings, furniture, etc., \$293,154.44.

Eastern Washington Hospital for Insane, Medical Lake, buildings, lands, live stock, water plant, and furniture, \$237,386.

State University, Seattle, old and new sites, old and new buildings, library, laboratory, etc., \$751,000.

Agricultural College, Pullman, buildings, farm and campus, equipment, sewer system, \$1,000.

School for Defective Youth and Feeble-minded Children, Vancouver, buildings and grounds and furniture, \$134,000.

Reform School, Chehalis, buildings and improvements, furniture and stock, land, \$67,000.

Soldiers' Home, Orting, land, buildings, water plant, etc., \$53,155.37.

Normal School, Ellensburg, buildings and grounds, equipment and furniture, \$71,000.

Normal School, Cheney, site and grounds, equipments and furniture, \$14,000.

State Fair, North Yakima, 120 acres, race track, stalls, etc., \$47,000.

Capitol, buildings and grounds, \$150,000.

The total value of these institutions is \$2,453,988.90.

**Education.**—The State Superintendent of Public Schools apportioned in September to the various counties their shares of \$30,552.85, to be used for school purposes. King County received \$4,360.70, and Franklin \$34.30. The total school census figures were 119,347.

The State University has recently been placed in position to make rapid progress. In addition to its generous endowment of public lands, including a site of 320 acres in Seattle and new buildings, it has received an equipment of the best and latest new apparatus. It opened on Sept. 3 with 500 students. Dr. Mark W. Harrington, late chief of the Weather Bureau at Washington and Professor of Astronomy of the University of Michigan, is the newly elected president.

The Normal School, at Cheney, received an ap-

propriation of \$60,000 for a new building. The school at Whatcom received \$40,000. The Legislature passed the bill forbidding vivisection in the public schools, and also to enjoin strict teaching of the duty and obligation of showing care and kindness to animals.

**Timber.**—The output of the Tacoma mills for 1895 was about 115,000,000 feet.

Forest fires did great injury during the year. These fires were serious in the vicinity of Shelton and Mount Vernon, in Whatcom County, at Skagit, Montbourne, Skamokawa, Summit, Etna, Nelson, and Waneta, and at some points made mining dangerous.

**Mining.**—Coal was discovered at Gate City in June in quantities sufficient to prove important to Olympia and Gray's Harbor. The survey in July of the mines in Lewis County found 187 acres on the northeast side of the ravine and 452½ acres on the southwest side of the cañon. The whole thickness of the veins is 42 feet. Geologists estimate that 14 different veins of 112 feet of coal lie under the land as surveyed. Railway surveys have been made for roads to this section from Tacoma and Olympia.

**Fisheries.**—During September and October the shipments of oysters, clams, fish, and mussels from Olympia Harbor equaled the shipments of eight months of 1894. The total number of pounds for those two months was 18,473. An appropriation of \$20,000 was made to establish fish hatcheries on the Columbia.

**Mount Tacoma.**—The party who climbed Mount Tacoma in December, 1894, returned in January, 1895, reporting no actual change in the contour of the crater. It is elliptical, with major and minor axes of 1,500 and 1,200 feet. The supposed eruption was due to the falling of pillars of ice under the snow, and the apparent smoke was steam. A party of heliographers set out to ascend the mountain July 10, 1895. The smoke from forest fires was so thick that the signals arranged between Mount Tacoma and Mount Adams were not discernible. Only 5 other people had ever reached the summit of the North peak at as high an altitude as this party accomplished. They found it 100 feet lower than last year. The heliographers slept in the crater for ten days.

**WEST AFRICA.** European powers previous to 1882 had only a few trading stations on the western coast of Africa between the river Draa, forming the southern boundary of Morocco, and the mouth of the Congo. Since then the whole coast (except Liberia) and vast territories in the interior have been acquired by military occupation or divided among the powers by mutual agreement. The French have claimed sovereign rights in Senegal, and the English have had stations in Gambia and Lagos since the middle of the seventeenth century. The colony of Sierra Leone was peopled by freed negro slaves from the British West Indies. The French settlements on the Gabun were first established in 1843, and in 1880 the occupation of the higher reaches of the river Ogowe was begun, with a view of establishing a trade route to the upper Congo region. In 1884 Germany, which had previously no African settlements, occupied Togoland and the Cameroons. That and the founding of the Congo Free State

spurred England and France to extend their possessions, and the rivalry between the three powers that began with exploring expeditions and the securing of treaties from the native chiefs took the form of military conquests when the doctrine of effective occupation was adopted in African international law. The powers were compelled to agree upon conventional boundaries not only for their possessions on the coast, but for their spheres of interest, because Algeria and the Congo State were not delimited, the coasts faced west, south, and southwest, causing the *Hinterlands* to overlap, and 2 powers were established on the Niger, and 2 also on the Congo. The northern boundary of the Congo State was defined in a convention first made between the International Association of the Congo and Germany, on Nov. 8, 1884, and signed by France and Portugal in February, 1885. The British Royal Niger Company, first organized in 1882, obtained in 1884-'86 about 300 treaties from native chiefs, covering Borgu and Sokoto, and the whole basin of the middle Niger and the Benue, thus defeating German hopes of trade and colonization and endeavoring to thwart French expansion in the Soudan. The company obtained a royal charter on July 10, 1886. By an agreement made with Germany by the British Government in August, 1886, the line between the sphere of the Niger Company and Cameroons was to be drawn from a point on the Cross river to some point on the Benue, east of Yola, which was fixed at a point near the mouth of the Faro by the supplementary agreement of Nov. 15, 1893, while the delimitation was further extended to a point on the southern shore of Lake Chad, about 40 miles east of Kuka, the capital of Bornu. By an agreement concluded between the English and French governments on Aug. 5, 1890, the limit between their spheres is a line from Say, on the upper Niger, to Barraua, on Lake Chad, drawn so as to leave to the Niger Company all that properly belongs to the Kingdom of Sokoto. An agreement was made between France and Germany in 1894, by which Germany abandoned to France the *Hinterland* of the Cameroons, excepting the trade route to Lake Chad, permitting the French to extend the French Congo territory northward behind the Cameroons and east of the Shari to Lake Chad, and ultimately, if they forestall the English in Bornu or Wadai, to join their possessions on the Congo with the French Soudan, thus shutting out England from the central Soudan, and uniting in a continuous colonial empire the French possessions on the Senegal, the Ivory Coast colonies, the French Congo and Gabun, the French Soudan, the Sahara, and Algeria. The coast of the Sahara, north of the French coast of Senegambia, from Cape Blanco to Cape Juby, where England has some territory, has been conceded to Spain, which claims Adrar in the interior, but has not yet come to an agreement with France as to the limit of the protectorate. Spain has done nothing in recent times to establish a government in these territories, or to develop their resources. By a treaty made between France and Liberia in 1894, the Cavally river was made the boundary between their territories on the Ivory Coast, and the districts behind Liberia that were occupied

by the Sofas of Samory were acknowledged to be within the French sphere. In the same year the French republic made a treaty with the Congo State, conceding to the latter territory in the Welle region occupied by Congo troops, though it is north of the 4th parallel.

The extent of the Spanish protectorate is 243,000 square miles, with perhaps 100,000 inhabitants. The French colony of Senegal has an area of 14,700 square miles, and a population of 174,000. Including its dependencies, its area is 57,900 square miles, with a population of 1,029,540, not including protectorates having an area of 96,500 square miles, and about 80,000 population. There are 246 miles of railroad in Senegal. The Rivières du Sud and Futa-Jalon territory have an extent of 42,600 square miles, and about 600,000 inhabitants. The settlements on the Ivory Coast are Grand Bassam, Assinie, Grand Lahou, and Jakerville. From these a French protectorate has been extended over the Kingdom of Kong, and into the Soudan. On the Gold Coast there are French establishments at Porto Novo, Kotonu, Grand Popo, and Agoué, and a protectorate has been imposed upon the Kingdom of Dahomey, which has a population of about 600,000. The extent of the French possessions here is undetermined. The English seek to cut them off from those on the upper Niger. The French Soudan embraces all the region of the upper Senegal and the upper Niger. The annexed territories on the Senegal have an area of 54,000 square miles, and 360,000 population. The protectorates were estimated in 1891 to have an area of 230,000 square miles, and 2,500,000 population. The French Congo, including Gabun, with the territories on the Ubangi, has an area estimated at 300,000 square miles, with a population estimated at 6,900,000.

The British Niger protectorates are estimated to have an area of 500,000 square miles, with over 20,000,000 inhabitants; but this includes large areas that the French have not conceded to England. The British colony of Gambia, surrounded by French territory, has an area of 2,700 square miles, and a population of 50,000, including 62 whites. Sierra Leone has an area of 4,000 square miles, and had 74,835 inhabitants in 1891, of whom 224 were whites. The protected territories have an area of 11,000 square miles, and 105,000 inhabitants. The Gold Coast colony and protectorate, including Ashanti, are 46,600 square miles in extent with an estimated population of 1,474,000. Lagos, an island on the Slave Coast, with the protected territory on the mainland, has an area of 1,000 square miles, and about 100,000 inhabitants. Behind it is Yoruba, having 19,000 square miles, and 3,000,000 inhabitants.

Near Gambia, and inclosed likewise by French possessions, is Portuguese Guinea, for which an area of 14,000 square miles is claimed, with 800,000 inhabitants.

The German protectorates of Togoland and Little Popo have an area of 19,660 square miles, and 800,000 inhabitants. The area of Cameroons is 160,000 miles, and the population is 2,600,000.

The independent republic of Liberia has been diminished by English encroachments from Sierra Leone, and by French annexations in the



interior and on the Ivory Coast. The estimated area is 14,360 square miles, and the population is 1,068,000, of whom 18,000 are descendants of liberated American slaves.

Dahomey was conquered by the French army under Gen. Dodds in 1892 and 1893. King Behanzin was deposed, and his realm was divided into 2 kingdoms—Abomey, over which Agoli Agbo, Behanzin's brother was made king on Jan. 15, 1894, and Allada, where Ganhu Hugnu, a fetish priest, was crowned. A French protectorate was secured by treaties signed on Jan. 29 at Abomey, and on Feb. 4 at Allada.

In the Soudan Col. Achinard, Governor and commander of the forces, had strict orders from the French Government not to extend the French occupation. Nevertheless Col. Bonnier, who was operating on the upper Niger with a flotilla against Samory, marched up to the city of Timbuctoo and took possession on Jan. 11, 1894. Finding his position menaced by Tuaregs, he led out a detachment of 70 native sharpshooters, with 10 European officers, for the purpose of warding them off and of obtaining food supplies, leaving the main body to hold the town. On Jan. 15 Col. Bonnier's force was surprised at Goundam by Tuaregs, and was annihilated. The French Government sent re-enforcements to avenge the disaster and to hold Timbuctoo, which could not now be evacuated without loss of prestige. The relieving column under Col. Joffre cleared the country of Tuaregs.

Samory, Emperor of the Sofas, the last of the Soudan conquerors, was expelled from the Niger valley and driven southwestward into Kong by the forces of Col. Combes early in 1893. Capt. Briquelet established a station at Erimankono, on the border of Sierra Leone, to prevent Billali, Samory's principal lieutenant, from obtaining arms from British merchants. Col. Achinard at the same time conducted an expedition against Ahmadu, the old enemy of the French, who had mounted the throne at Warina, in the same region. The presence of French troops there caused the British colonial authorities to display a military activity on the frontier, which, although a conventional line, was not precisely known. In the Niger basin also, and in Gambia, the British developed a military strength far beyond any they had shown before, though not equal to that of the French, who had organized an efficient native colonial army, while the British had to depend on negro troops imported from the West Indies and on marines. A British expedition was sent from Sierra Leone against the Sofas in Bambara and at Kerra Yemma. On Dec. 23, 1893, a small detachment of French troops under Lieut. Maritz was annihilated by a Jamaican regiment under Col. A. B. Ellis in Warina, each mistaking the others for the common enemy. On the British side Capt. Lendy and 26 men were killed. Both the British and the French Government claimed that the incident occurred within its own sphere.

In January, 1894, the British defeated the Sofas and captured Kerra Yemma and Warina, proclaiming a protectorate over the territory traversed, including the Sanda district of the Konno country. On Feb. 3, 1894, a second collision occurred between the French and the British police, who had established themselves at

Samu, within the sphere claimed by the French, and forced the natives to build roads. This skirmish, in which 5 were killed on the British side, was also held by the 2 governments to be due to a misapprehension. Col. Monteil, who had been ordered to the Ubangi to take command of the forces there and conduct an expedition to the upper Welle, if not also to penetrate the Bahrel Gazel country and occupy it temporarily as custodian in behalf of Egypt and the Sultan, as the English feared, was sent instead to operate from the Ivory Coast against the Sofas, and thus prevent the British from subduing them and reaping benefits therefrom. When Col. Monteil arrived at Grand Bassam early in 1895 he found that no adequate provision had been made for the advance into Kong. The supplies and means of transport were not sufficient for the mobilization of more than 300 men out of more than 1,000 placed under his command. With this small force he undertook to advance and begin the campaign. Samory was more powerful than ever, having an army of 12,000 men well armed and well officered, and when Col. Monteil found himself confronted with a force so superior he retreated, abandoning three quarters of his baggage and guns. When he was already in full retreat, orders came from France countermanding the expedition.

On Jan. 21, 1895, British and French plenipotentiaries signed at Paris a new boundary agreement regarding the *Hinterland* of Sierra Leone. The line follows the watershed between the Mellakori and Grande Scarcies rivers, the *Thalweg* of the Mola, the right bank of the Grande Scarcies, crosses this river in a line drawn to the river Kita, follows its *Thalweg* down to the Lolo, runs straight to a point on the Petite Scarcies 4 miles south of 10° of north latitude, follows the *Thalweg* of the Petite Scarcies up to that parallel which forms the boundary as far as its intersection with the watershed of the Niger, and follows this watershed, terminating at the parallel of latitude that passes through the source of the Tembiko or head waters of the Niger.

In the beginning of 1894 a force was sent to consolidate British authority on the Gambia. The troops attacked Fodi Silah, the principal chief on the river, who would not acknowledge British sovereignty although Col. Ellis had destroyed his capital two years before. After the column had burned several villages Fodi Silah's men surprised and defeated the British column, and subsequently cut to pieces a landing force in January, 1894. The West Indian regiment, commanded by Major Madden, subsequently drove the chief from his country, blowing up his town of Gunjur and burning all his people's villages. He sought aid among the Mohammedan chiefs on French territory for a fresh campaign against the British, but was made a prisoner by French troops in March. In April, 1894, the British made a treaty with Moussa Mollah, whom they recognized as the king of the natives on the Gambia.

In the spring of 1894 Sir Francis Scott, inspector general of constabulary, conducted an expedition to the borders of Ashanti for the purpose of incorporating certain tribes that were willing to accept British rule instead of that of

the King of Kumassi. The annexation of these tribes was accomplished without bloodshed, and a Houssa garrison was left at Attababoo.

By the Franco-German agreement of March 15, 1894, the fifteenth meridian east of Greenwich is recognized as the eastern limit of the German sphere of influence from 4° to 8° 30' of north latitude. The southern boundary of the Cameroons protectorate was defined by the Franco-German agreement of Dec. 24, 1885, as running from the mouth of the Campo river due east to about 15° of east longitude. Since then the French expeditions of Savorgnan de Brazza, Mizon, and Maistre have penetrated the German *Hinterland* from the Ubangi up to the Benue and Lake Chad, establishing stations on the Sanga river and the station and ivory depot of Gasa and making treaties with the local chiefs on the Sanga and Shari rivers and in the intermediate country. The German expeditions of Kund, Tappenbeck, Zintgraff, Gravenreuth, and Morgen never penetrated beyond the twelfth meridian in the south or the longitude of the English station of Yola in the north. The English were chagrined at the abandonment of the *Hinterland* to France in the new treaty. Kunde is reserved to France, although it was found to lie just west of longitude 15°. The German frontier is extended east of the fifteenth meridian in the south, so as to give to Germany the right bank of the Ngoko for a part of its lower course and 30 kilometres of the right bank of the Sanga for the development of the commercial interests of eastern Cameroons. In the north the German sphere is contracted above latitude 8° 30', where the line runs northwest to Lame and Bifara, which are included in the French possessions, and then due north to longitude 10°, giving France access to the Benue through its tributary, the Mayo Kebbe. It follows the tenth parallel eastward to the Shari beyond the seventeenth meridian, and includes the whole left bank of that river down to Lake Chad, thus giving to Germany a part of the territory of Bornu and the south shore of Lake Chad from the mouth of the Shari to the boundary of the English sphere, west of Deggela. The treaty secures to Germany the right of navigation on the Sanga and on the Shari, affording commercial communications with the Congo basin and the central Soudan.

The German administration in Cameroons received in 1894 a severe setback. The Soudanese soldiery mutinied and seized the arms and ammunition. They were subdued, but an investigation into the causes of the outbreak revealed the atrocious cruelty of the German officials, especially Leist, the head of the administration, who was promptly dismissed when it was proved that he had been guilty of inhumanity not only to the soldiers and native men, but to women.

In the spring of 1895 the Governor of the Cameroons, Herr von Puttkamer, carried on a campaign against the Bakoko tribes in the interior. The German forces stormed 4 of their strongholds, losing 12 killed and killing 200 tribesmen.

For two years the British carried on active operations for the subjugation of the Egbas and Jebus baek of Lagos. In 1894 a naval force was sent to Benin to reduce the chief Nana,

who refused to submit to the authority of the Niger protectorate. His town was stormed on Sept. 25, after which he delivered himself up at Lagos. In the autumn a British official named Ferguson proclaimed a protectorate over Salaga and other districts northwest of Togoland, although these were declared neutral in an Anglo-German agreement made in 1888. Herr Kling, Lieut. von Karnap, and Dr. Grüner led German expeditions into the *Hinterland* of Toga, while Capt. Decœur, M. Alby, Lieut. Baud, and M. Ballot, Governor of French Dahomey, as agents of France, traversed the same regions, and all obtained treaties from local chiefs in respect to some of the same territories that the mulatto Ferguson had negotiated for in August, 1894. Capt. F. D. Lugard, following Ferguson, obtained new treaties in Borgu. The Germans claimed the whole empire of Gando, which they said was independent of Sokoto, and also the lands of Ilorin, Lokoja, Saria, and Keffi. They were extremely desirous of extending their protectorate to the Niger, but the French were unwilling to concede all their claims, because these would sever the Dahomey protectorate from the Soudan. In February, 1895, Capt. Toutée, crossing from Dahomey to the Niger, concluded various treaties. The French claimed Niki and Bussa as the *Hinterland* of Dahomey, but the English held that the treaty line from Say to Barua precluded them from acquiring any rights within the bend of the Niger or even in Bornu or Adamawa. The King of Bariba, or Borgu, signed a treaty for Capt. Lugard on Nov. 15, 1894, at Niki; but Capt. Decœur, who obtained a political treaty on Nov. 26, believed the English document to be a commercial arrangement only. Lieut. Mizon had obtained a protectorate treaty from the ruler of Adamawa in August, 1893, and had left a force at Yola; but the English claimed Adamawa as a dependency of Sokoto, although they had previously conceded it to Germany, and Germany had resigned her rights to France. The French and the Germans persistently denied that the British Niger Company had ever concluded a political treaty with the Sultan of Sokoto or the other potentates, asserting that the treaties simply extended to Europeans in general the right to trade subject to the payment of tolls to the native rulers. Many complaints have been made, both by the French and by the Germans, of the stopping of trading vessels and expeditions by the Niger Company in contravention of the Berlin act of 1885, which made the Niger free to the flags of all nations. Indemnity has been paid for the illegal seizure of vessels; but this has not deterred the company from repeating the act in order to defeat the commercial and political designs of its foreign competitors. Toward the close of 1894 a French gunboat, the "Ardent," entered the Niger for the purpose of succoring the French post at Yola, but ran upon a sand bank, and could not be got off for six months. The French Government ordered the commander to return to the sea with his vessel, which he did as soon as the water rose. The company's officials, who had allowed the gunboat to proceed, because they had not the force to stop it, arrested a German steamer that entered the river with supplies for the stranded vessel.



Ashem, Sultan of Bornu, was defeated and his capital, Kuka, was taken by Rabah, once a slave and afterward a trusted lieutenant of Zobeir in the Egyptian Soudan, who, on the rise of the Mahdi, had fled with a band of fighting men and subjugated Baghirmi before he conquered Bornu. He established his rule in Bornu, imposing a tax of a dollar on every inhabitant. Kiari, nephew of the fallen sultan, raised a force to expel the invaders and attacked them several times, but was always repelled.

The French expedition from the Ubangi that Col. Monteil was to have led set out in October, 1894, pushed 900 miles to the northeast, and in the spring of 1895 occupied territory near the Bahr el Gazel and bordering on the country held by the dervishes.

The people of Brass, in the Niger territory, revolted against the British authorities and pillaged the station of Akassa on Jan. 28, 1895. The rising was put down by British marines and troops of the protectorate under Sir Claude MacDonald. The British captured and burned Ninbi, King Koko's town, on Feb. 22. The hostility of the natives here and elsewhere in the forest belt was occasioned by the determination of the English to deprive the negro traders and porters of the commerce that they have always monopolized, none others being allowed to transport goods between the coast and the interior through their territory. The same cause led to the imprisonment of Nana and the rebellion of Jaja.

In February, 1894, the British Government presented to Prempeh, King of Kumassi, the remnant of the Ashanti empire that was disrupted by the British conquest of 1874, an agreement to sign, accepting a British resident. This he refused to do, and on June 11 he proclaimed the restoration of the empire of his fathers and was formally enthroned as King of Ashanti. He appointed his brother and two cousins ambassadors to lay his objections to British rule before the English Government. Though the Governor of the Gold Coast, Sir Brandford Griffith, refused permission for them to start and the British Government gave notice that no envoys would be received from a ruler so unimportant as the King of Kumassi, for his title to the throne of Ashanti was not recognized, from one, moreover, who countenances human sacrifices, yet the embassy went to England and appealed to the Government for a hearing, which was refused. A British expedition was prepared, and an ultimatum was sent to King Prempeh, reiterating the former demands that he put an end to slave raiding and human sacrifices, cease hampering trade, and accept a British protectorate and a British resident who should direct him in all relations with his neighbors. In answer to this ultimatum, which expired on Oct. 31, the young king denied that he countenanced or permitted slave raiding or human sacrifices or hindered trade, and declared that he preferred war to resigning his prerogatives into the hands of a British agent. The king, who ruled over an industrious population of 2,000,000 light-skinned Africans, was reported to have 50,000 fighting men, armed with rifles. The British expeditionary force consisted of 700 Houssa troops, 500 West Indians, and 300 picked men from English regiments. The command was

given to Sir Francis Scott, inspector of constabulary for the Gold Coast. The English relied upon their Maxim guns and upon native allies, neighbors, and enemies of King Prempeh, to whom were supplied 4,000 rifles. The British force marched to Kumassi, surmounting many difficulties. There was no fighting, for Prempeh, convinced of the futility of contending against the power of England, succumbed without firing a shot.

**WEST INDIES.** The West Indian islands, except Hayti (see HAYTI and SANTO DOMINGO), are all occupied by European colonies. Cuba and Puerto Rico are the only remaining Spanish colonies in America (see CUBA). The majority of the inhabitants are descendants of the former negro slaves, who constitute almost the entire population on many of the islands. The staple products on all the larger islands are sugar and rum, and these have suffered a continuous economic depression, owing to the competition of the beet-root-sugar industry of Europe, which is stimulated by bounties. A partial recovery has been brought about in the British colonies by the substitution of fruit culture and other new industries. Wages having fallen almost to the lowest life-supporting limit, there has been a large emigration to the United States of young colored men, most of whom have received a good elementary education.

**British Colonies.**—The British possessions are divided into 6 groups, each of which has its own Governor and its separate administration.

*The Bahamas* have an area of 5,450 square miles and a population of 48,155, nearly one third of whom are white. The Governor is Sir William F. Haynes Smith, who was transferred from the Leeward Islands in January, 1895. The product of the sponge fisheries in 1893 was valued at £58,615; export of pineapples, £39,386. The cultivation of the sisal plant, introduced from Yucatan, is spreading, and the raising of cotton has been begun. Shells, pearls, and ambergris are other products. There were 1,939 births and 1,181 deaths in 1893; average school attendance, 3,281.

*Barbadoes* has an area of 166 square miles, with about 185,000 inhabitants. The births in 1893 numbered 8,053, and the deaths 4,956. There were 201 primary schools, with an average attendance of 16,606. The Governor is Sir J. S. Hay. The land is divided into sugar estates, outside of which the laboring population live in very crowded areas. The death rate has increased from 21.54 per 1,000 before 1870 to 34.40 in 1894, and yet the population has grown at the rate of almost 10 per cent. per annum. The headquarters of the European troops in the West Indies is here, the garrison consisting of 40 officers and 818 men.

*Jamaica*, with Turk's and Caicos islands, has an area of 4,424 square miles, with a population of about 660,000, including 10,000 whites and 13,800 East Indians. The school attendance in Jamaica is 52,983; the births in 1893 numbered 24,475, and the deaths 13,717. The West Indian regiments have a strength of 1,570 officers and men. There are 119 miles of railroad and 700 miles of telegraphs. The revenue in 1893 was £863,644, and expenditure £800,418; imports, £2,075,689; exports, £2,157,794.

The *Leeward Islands* have an area of 706 square miles and 129,470 inhabitants, of whom 5,000 are white. The Governor is Sir Francis Fleming. The budgets and commerce of the 5 presidencies in 1893 were:

PRESIDENCIES.	Revenue.	Expenditure.	Imports.	Exports.
Virgin Islands.....	£1,552	£1,715	£3,885	£4,643
St. Kitts, Nevis, and Anguilla.....	53,859	51,975	184,192	181,582
Antigua.....	50,881	50,870	178,931	188,358
Montserrat.....	8,371	7,882	29,325	26,774
Dominica.....	22,347	25,518	64,552	61,303

*Trinidad* has an area of 1,754 square miles, with 220,285 inhabitants. Tobago, which is connected with it administratively, is 114 square miles in extent, with 18,353 inhabitants. There were 7,568 births and 5,987 deaths in Trinidad in 1893. There are 173 schools, with 18,483 pupils. The pitch lake in the center, which is leased to an American company, produced 90,204 tons of asphalt in 1893. There are 54 miles of railroad and 136 miles of telegraph. The Governor is Sir F. Napier Broome. The revenue of Trinidad in 1893 was £497,396, and the expenditure £488,503. Imports amounted to £2,270,885, and exports to £2,320,824. The chief exports are sugar, cacao, and molasses. The exports of Tobago, which produces cotton, tobacco, and sugar, were valued at £25,429.

Of the *Windward Islands*, which have Sir Charles Bruce for their Governor, Grenada has an area of 133 square miles and 56,413 inhabitants; St. Vincent, an area of 132 square miles and 40,054 inhabitants; and St. Lucia, an area of 243 square miles and 43,310 inhabitants. The products are sugar, cacao, cotton, spices, coffee, rum, arrowroot, logwood, and timber. The finances and trade of the islands in 1893 were as follow:

ISLANDS.	Revenue.	Expenditure.	Imports.	Exports.
St. Lucia.....	£51,598	£49,271	£165,978	£178,429
St. Vincent.....	28,495	29,589	98,424	114,694
Grenada.....	59,210	58,039	166,679	316,063

**Danish Colony.**—The islands of Santa Cruz, St. Thomas, and St. John, constituting the Danish Antilles, of which C. E. von Hedemann is Governor, have an area of 118 square miles and a population of 32,786, consisting almost entirely of negroes engaged in the cultivation of the sugar cane. The imports in 1893 were valued at 317,986 kroner, and the exports at 195,511 kroner.

**Dutch Colony.**—Under the Government at Curaçoa are the islands of Curaçoa, Bonaire, Aruba, St. Eustache, Saba, and the Dutch part of St. Martin. The negro inhabitants are engaged in cultivating corn and beans, cattle raising, and the production of salt and lime. Curaçoa, which is a free port, has a large trade with other West Indian islands.

**French Colonies.**—These are Guadeloupe and the adjacent islands of Marie Galante, Les Saintes, etc. There were 49 primary schools, attended by 9,753 pupils. The local revenue for 1894 was estimated at 5,551,619 francs, the expenditure of France in 1895 at 1,596,832 francs. There are 60 miles of railroad. The

products besides sugar are cotton, ramie, tobacco, coffee, cacao, rubber, cattle, corn, rice, and potatoes. The imports amounted to 20,456,000 francs, and exports to 15,164,000 francs in 1891.

**WEST VIRGINIA**, a Southern State, admitted to the Union June 19, 1863: area, 24,780 square miles. The population, according to each decennial census since admission, was 442,014 in 1870; 618,457 in 1880; and 762,749 in 1890. Capital, Charleston.

**Government.**—The following were the State officers during the year: Governor, William A. MacCorkle, Democrat; Secretary of State, William E. Chilton; Treasurer, John M. Rowan; Auditor, Isaac V. Johnson; Attorney-General, Thomas S. Riley; Adjutant General, J. A. Holley; Commissioner of Labor, J. M. Sydenstricker; Superintendent of Public Schools, Virgil A. Lewis; Bank Examiner, C. A. Wever; State Librarian, E. L. Wood; Secretary of the Agricultural Board, C. C. Brown; Meteorologist, W. W. Dent; Secretary of the Board of Health, N. D. Baker, M. D.; State Veterinarian, E. E. Terry; Secretary of the Fish Commission, C. I. White; Commissioner of Immigration, Thomas Popp.

**Finances.**—The State is out of debt. The estimated receipts and expenditures for the fiscal year ending Sept. 30, 1895, were as follow: For the State fund, \$656,600, with balance of \$127,138.36, making a total of \$783,738.36. The estimated charges are \$577,318.30, leaving a balance of \$206,420.06. For general school fund, \$351,883.30, with balance of \$313,683.40, making a total of \$665,566.70; for school fund, \$28,000, with balance of \$282,745.91, making a total of \$310,745.91.

**State Institutions.**—The Legislative Committee reported the Weston Hospital as overcrowded. The hospital at Spencer had 70 men and 75 women patients. The Penitentiary reported \$4,017.05 unexpended balance and 240 convicts at work and 136 unemployed. The Colored Institute, at Farms, had arranged for the erection of the new Mechanical Hall for which \$6,000 had been appropriated. The Reform School had a balance on hand of \$12,581.44.

**Education.**—The university has a new chemical laboratory, and \$40,000 has been expended upon new machinery in Mechanical Hall. Part of the funds for the university is supplied by the State, and it also derives \$20,000 a year from the Morrill fund for scientific instruction, besides the interest on the original endowment. The agricultural experiment station is maintained by the United States Government.

A preparatory branch of the university, for which the Legislature appropriated \$13,000, is to be located at Montgomery.

An officer of the United States army is in command of the cadet corps. The enrollment of the university was 340, an increase upon any previous year. The whole cost of the buildings is \$200,000.

**Legislative Session.**—The Legislature was convened in January, and adjourned in March. Its most important enactments were as follow:

Enabling an insolvent debtor to prefer a creditor for the purpose of giving security for loan made at



the time of the transaction, but not to prefer a creditor as a pre-existing debt.

Providing that two days' work shall be performed on the public roads before the first day of June in each year.

To prevent the owner or occupant of any shanty boat from anchoring his boat on real estate belonging to another for more than twelve hours.

Establishing the county of Mingo out of part of the county of Logan.

Providing that towns of fewer than 300 voters may hold municipal elections under the law in force prior to the adoption of the Australian ballot system.

Reducing the number of regents for the State University from 13 to 9, 5 of whom are to be appointed from the dominant political party; and requiring the regents of the State Normal School to be equally divided between the two political parties.

Amending the divorce statute so as to enable one to get an absolute decree of divorce on the ground of cruelty or ill treatment.

Requiring railroads to use the classification of freight used by them for interstate traffic; and prescribing a tariff increasing slightly the charges on short hauls and decreasing the charges on long hauls.

Making it unlawful for any railroad company to engage in the business of buying and selling coal or to lend its credit or money to another engaged in the business.

Authorizing the county court of any county to issue bonds for the purpose of funding its indebtedness.

To authorize married women to convey property by an attorney in fact; the property of a married woman, when living apart from her husband, not to be subject to her husband's disposal nor liable for his debts.

Making a fence built wholly of barbed wire a lawful fence.

Fixing the fees for catching and securing floating timber.

Providing for a series of text-books for the public schools of the State, and fixing the price therefor.

Imposing a license tax of \$500 on cigarette dealers.

Allowing a lot owner in property where the entire tract has been returned delinquent for nonpayment of taxes to redeem such part of the property as he may own instead of the entire tract.

Among the charters amended were those of Charleston, Huntington, and Parkersburg.

**Railways.**—The total certified assessment for 1895 of all the property of the various railroads in the State is \$22,432,791. The mileage is about 2,000.

Several railroads are being built to open up rich territories. Among them are the road from Charleston to Sutton, up the Elk, to connect with the West Virginia and Pittsburg, thus making a line north and south through the center of the State; the West Virginia Short Line road from Clarksburg to New Martinsville; and the Chesapeake and Western to extend from the Chesapeake Bay through Fredericksburg and Harrisonburg, Va., into the eastern coal field. In addition there is a road up Guyandotte river from Huntington, to extend eventually into Virginia; a road from Morgantown to Kingwood; a road from Burlington to a rich territory in Randolph County; the Cairo and Kanawha Valley road; and the West Virginia Southern, which is now being constructed up Lewis creek from Brownstown and will open up a coal and timber territory.

**Oil.**—While the oil belt extends for 200 miles across the State, only a few counties have been tapped. The Sisterville field leads in productivity, outranking all others in the Union. The

Monroe County field is small, but producing well. Wells in Wetzel County have given from 25 to 35 barrels a day.

**Coal.**—The total output in 1895 was 11,629,757 short tons. The average annual increase for fourteen years has been 718,555 tons.

**Timber.**—The mills on the Great Kanawha employed 400 men and boys, with a weekly pay roll of over \$4,000. Mills in other territories showed pay rolls of \$60,000 monthly, not including logging operations, stave mills, and the great tie industry.

**Agriculture.**—The State board is reorganized under the enactment of 1895. The fiscal year begins on July 1; \$3,000 is appropriated for the expenses of the board, with \$1,000 for the secretary.

**WISCONSIN**, a Western State, admitted to the Union May 29, 1848; area, 56,040 square miles. The population, according to each decennial census since admission, was 305,391 in 1850; 775,881 in 1860; 1,054,670 in 1870; 1,315,497 in 1880; and 1,686,880 in 1890. By the State census of 1895 it was 1,937,915. Capital, Madison.

**Government.**—The following were the State officers during the year: Governor, William H. Upham, Republican; Lieutenant Governor, Emil Baensch; Secretary of State (who also acts as Auditor), Henry Casson; Treasurer, Sewell A. Peterson; Attorney-General, William H. Mylrea; Adjutant General, Charles King; Superintendent of Public Instruction, John O. Emery; Commissioner of Insurance, William A. Fricke; Railroad Commissioner, D. J. McKenzie; Chief Justice of the Supreme Court, Harlow S. Orton (who died July 4), and afterward John B. Cassoday; Associate Justices, Silas U. Pinney, John B. Winslow, and A. W. Newman; Clerk of the Supreme Court, Roujet D. Marshall.

**Legislative Session.**—The Legislature met March 9, and adjourned April 18. To meet the needs of the State University a tax to produce \$120,000 for each of two years was authorized. An appropriation of \$180,000 was made toward the erection of a fireproof building for the protection of historical collections. Appropriation was made for the improvement of the State Prison; a board of arbitration was created; the Board of Control was reorganized; laws protecting the cheese and butter industries were passed; and a reapportionment of the State was provided for, based upon population and territory. Among other laws enacted were several to secure uniformity with those of other States relating to acknowledgment of written instruments; to the presentment of notes, checks, drafts, or bills of exchange and abolishing days of grace; to the establishing a standard of weights and measures; to the execution of wills; to the probate in the State of foreign wills; and to the sealing of deeds and other written instruments. Other acts were:

Providing for the better supervision of banks.

Establishing public warehouses.

Providing for inspecting, weighing, storing, receiving, and shipping grain within certain cities.

To provide for a State Board of Arbitration and Conciliation.

To provide for the appointment of a deep-channels commissioner.

Declaring meandered lakes public waters.

To provide for fishways in the dams on and across all streams in the State.

To provide a contingent fund to be used for prevention of dangerous diseases.

To authorize formation of a mutual insurance company to insure against hail, tornadoes, cyclones, and hurricanes.

To prevent unjust discrimination by insurance companies.

To promote the establishment and efficiency of free public libraries in the State.

Fixing the age of consent at fourteen years.

**Finances.**—From the report of the Treasurer for the fiscal year ended Sept. 30, 1895, the following statements are taken: The amount on hand in the general fund at last settlement, Sept. 30, 1894, was \$977,315.71; the receipts during the year from all sources were \$1,788,809.52. The disbursements were \$2,729,506.73, and the balance on hand at the close of the fiscal year was \$36,618.50. Among the items of disbursement are the following: Salaries and permanent appropriations, \$200,641.94; legislative expenses, \$161,411.68; State Hospital for Insane, \$113,702.79; Northern Hospital for Insane, \$137,694.55; State Prison, \$87,399.97; School for Deaf, \$41,050.58; School for Blind, \$30,978.84; Industrial School for Boys, \$74,161; State public schools, \$47,036.47; clerk hire, \$66,594.16; labor about the Capitol, \$48,821.38; transient laborers, \$11,294.11; militia, \$93,684.55; free high schools, \$47,600.08; maintaining chronic insane in county asylums, \$301,796.80.

The school fund amounted to \$3,371,657.94; the university fund to \$212,204; the agricultural fund to \$271,270.06; the Normal School fund to \$1,819,421.20; the total investment of trust funds being \$5,674,553.20.

The amount paid by railroad companies during the fiscal year was \$1,175,752.52; by telegraph companies, \$9,999.45; by telephone companies, \$9,838.99; by sleeping-car companies, \$503.80. Insurance licenses amounted to \$131,574.60, and peddlers' licenses to \$19,663.38.

The tax levy for 1895 amounted to \$1,372,713, which was divided as follows: One-mill tax, \$603,473; certificates of indebtedness to school fund, \$157,570; university tax, \$256,476; normal-school tax, \$120,694; free high schools, \$50,000; fifth normal school, \$10,000; manual-training schools, \$2,500; Feeble-minded School, \$100,000; special for normal schools, \$72,000.

The report of the Railroad Commissioner for 1894 says that the mileage of the State is 578 miles, an increase of 219 miles. The capital stock of the companies amounts to \$112,394,000; funded debt, \$160,400,000; unfunded debt, \$6,300,000; cost of railway properties in the State, \$230,000,000; cost per mile, \$40,000. The amount received from the companies for 1894 was \$1,295,999.13. There were 116 persons killed and 281 injured on the tracks.

**Education.**—The apportionment of the school-fund income for 1895, amounting to \$602,268.48, was made on the basis of 89,431 cents for each person of school age in the State. The last Legislature authorized the establishment of a State home for the 3,000 feeble-minded persons in Wisconsin, and appropriated \$100,000 therefor, and in October it was located at Chipewewa Falls. Superior was decided upon in July

as the site for the new normal school, contingent on the paving by the town of the streets surrounding the school.

**State Prison.**—The Legislative Committee appointed by Gov. Peck to visit the charitable and penal institutions of the State reported to the Legislature of 1895, condemning the State Prison at Waupun, on account of its unsanitary and overcrowded condition, as wholly unfit for a reformatory, and advising the erection of an intermediate prison in a central county.

**Census.**—A State census taken this year gives the official population as 1,937,915, an increase of 374,502 since the taking of the State census in 1885. The expenditure from the general fund for this work this year was \$77,219.84. The Legislature provided that as soon as the result of the census was known an apportionment committee should prepare a bill districting anew the members of the Senate and Assembly according to the number of inhabitants. This apportionment was made in November.

**The Gold Cure.**—A law passed by the last Legislature provided for compulsory subsection of inebriates to this cure. Statistics gathered in October show that in only 25 of the 75 counties have judges availed themselves of the law; in these the number of treatments was 137 at a cost of \$17,030. Objection to the law is made by many magistrates on the ground of the large expense involved, as well as a belief that it is unconstitutional.

**Immigration.**—In pursuance of the effort to secure settlement of the 25,000,000 acres of unoccupied land in Wisconsin, an immigration commission visited New York to make a personal investigation of the character of the immigrants and other matters connected therewith, and to provide for the circulation among desirable immigrants of literature giving facts relative to the lands they desire to settle. For this purpose a handbook of was prepared.

**Dairy Industry.**—Wisconsin has \$160,000,000 invested in the dairy industry, and the milk products of 1894 aggregated \$30,000,000.

**Treasury Cases.**—As stated in the "Annual Cyclopædia" for 1893, ex-State Treasurers were under obligation to repay to the treasury interest collected and used by them accruing from the deposit of public funds, with interest thereon. The last Legislature passed an act releasing ex-Treasurers Baetz and Kuehn from judgment in the treasury cases, and ex-Treasurer McFetridge from the balance over principal and 3-per-cent. interest. It was claimed that this act was contrary to the Constitution; but the Attorney-General decided that it was constitutional, and took action accordingly.

**Decision.**—The Supreme Court sustained the validity of the law which provides that life imprisonment works absolute divorce without further legal proceedings.

**WYOMING**, a Northwestern State, admitted to the Union July 10, 1890; area, 97,890 square miles. Population in 1890, 60,705. Capital, Cheyenne.

**Government.**—The following were the State officers during the year: Governor, W. A. Richards, Republican; Secretary of State, Charles W. Burdick; Treasurer, Henry G. Hay; Auditor, William O. Owen; Attorney-General, B. F.



Fowler; Adjutant General, Frank A. Stitzer; Superintendent of Instruction, Estelle Reel; Chief Justice of the Supreme Court, H. V. S. Groesbeck; Associate Justices, A. B. Conway, C. N. Potter; Clerk of the Supreme Court, R. H. Redpath.

**Finances.**—The Auditor's report gives the following information as to the financial condition of the State: Balance in the treasury Sept. 30, 1894, \$148,336.16; moneys received from all sources during the year ending Sept. 30, 1895, \$184,490.34; total receipts, \$332,825.50. The disbursements were: General fund (on account of appropriations), \$160,249.69; Capitol tax, \$5,618.97; bond tax (interest on State debt), \$19,200; university income tax, \$3,691.71; stock indemnity, \$1,507.81; fund for the insane, \$10,405.04; hospital maintenance tax, \$6,055.33; hospital building tax, \$275.86; Capitol building fund, \$1,893.37; inspection fund, \$790.65; Rawlins penitentiary building tax, \$12,494.31; total disbursements, \$222,182.74; cash in treasury, Sept. 30, 1895, \$110,642.76. The annual expense is materially increased every alternate year by the assembling of the State Legislature, and in this year's expenditures are included the expense of the third Legislature and the payment of bounties on predatory wild animals, the latter a charge heretofore borne by the several counties.

The balances in all appropriations Sept. 30, 1894, and the appropriations since made amounted to \$380,995.39; there was paid over during the year \$160,249.69; restored to general fund, \$4,938.20; and there remained Sept. 30, 1895, balances amounting to \$215,807.50. For the construction of public buildings \$17,695.30 was paid out during the year, making the total expense of construction since 1883 \$564,262.30. Of this sum, \$297,273.49 has been expended for the Capitol at Cheyenne.

**Valuation.**—The property valuations of 1895 amounted to \$29,838,938.79, a gain in value during the year of \$640,897.59. The valuation of land and improvements on land was \$6,857,698.69; of town lots and improvements thereon, \$5,497,842.49; of capital employed in merchandise and manufactures, \$1,488,271.69; of moneys and credits, \$524,098.84; of stock in corporations, \$307,795.02.

The rate of the State levy for 1895 was 6.2625 mills, the assessment amounting to \$186,866.35. This levy includes a levy of a half mill authorized by the third Legislature for the support of State charitable institutions, which levy produced \$14,919.46. The total tax to be collected is \$845,000, exclusive of the school poll tax in Albany and Fremont Counties. The amount of delinquent taxes Sept. 30, 1895, was \$17,321.57, and \$395.32 was paid during the fiscal year as interest on delinquent taxes.

**Railroads and Telegraphs.**—The number of miles of railroad operated in the State during 1895 was 1,177.54, valued at \$7,127,381, an increase in mileage over 1894 of 20.19 miles, and a decrease in valuation of \$49,461. The valuation of Pullman palace cars was \$283,500, and the mileage proportion of the value in Wyoming was \$84,037, the mileage for these being 818.89 miles.

The mileage of the telegraphs was 1,019.6, and the total valuation \$107,186.50. For the Western

Union Company this valuation is made up as follows: The rate per mile for poles and first wire is \$50, and \$15 is added for each additional wire.

**Bounties.**—To encourage the destruction of predatory wild animals, the third State Legislature passed a law authorizing the payment of \$3 for each gray or black wolf killed and \$1 for each coyote, and made an appropriation for this purpose of \$25,000. Between Feb. 16 and Sept. 30, 1895, \$2,544 was paid for coyotes and \$5,088 for gray and black wolves, a total of \$7,751, and on Dec. 19 a total of \$11,256 had been paid.

**Banks.**—An abstract of the statement of the condition of the 4 State banks, July 17, 1895, shows their resources as \$258,395. The deposits subject to check were \$88,919; demand deposits, \$17,945; time deposits, \$59,402. The report shows all the banks to be in a healthy condition, and having on hand and available in cash over 30 per cent. of the total liabilities.

**Live Stock.**—The valuation for 1895 of the 300,264 cattle in the State was \$3,473,142.50; of the 73,518 horses, \$1,547,299.83; of the 1,407 mules and asses, \$68,996; of the 1,172,810 sheep, \$1,762,606; and of the 3,359 swine, \$10,035; making the total valuation of live stock amount to \$6,862,079.33.

**Public Lands.**—The total area of public lands in the State vacant and subject to entry June 30, 1895, was 42,828,559 acres, of which 7,976,414 have not been surveyed. The area in railroad selections was 145,157.99 acres.

**Education.**—The College of Agriculture was reorganized at the opening of the school year, with additional buildings, laboratories, and instructors. The total amount available for its support for the year ended June 30, 1895, was \$21,774.73, of which \$4,785.46 remained unexpended at the end of the year. The Wyoming Experiment Station issued 6 bulletins during the year, and conducted a stock-feeding experiment, which will be made the subject of a seventh. The appropriation for the year was \$15,000, all of which was expended, as was an additional sum of \$427.73 received from the sale of farm products.

**Soldiers' Home.**—In accordance with the suggestion made by the Governor in his message to the third Legislature, an appropriation of \$7,500 was made for the establishment of a home for veterans, a board of trustees was organized, and repairs were begun to fit the State building erected for a deaf, dumb, and blind asylum to be used as a home.

**Insurance.**—The report of the Auditor as *ex-officio* Insurance Commissioner shows that at the beginning of the year the life insurance in force amounted to \$5,303,866, on which a premium of \$128,323.89 was paid. In addition to this there was \$2,439,900 of life insurance in the assessment companies. The amount of losses paid was \$97,858.92. The 45 fire insurance companies entitled to do business in the State wrote insurance in 1894 to the amount of \$6,779,634.86, on which \$131,848.99 was paid as premiums. Losses amounting to \$49,905.51 were incurred, and losses to the amount of \$53,966.28 were paid.

**Sacaline.**—Great hopes have been based upon the value of sacaline (*Polygonum sacalinense*)

as a forage plant. It was expected to grow with such luxuriance as to furnish shade in summer for cattle and a wind break in winter, as well as food, but the experiment station reports: "Our trials indicate that sacaline is not sufficiently hardy to be of any practical value in any part of the State."

Report is also made that both the Canada and the Russian thistle have secured a foothold in Wyoming.

**Indian Troubles.**—In the early part of the summer Bannock Indians and others, from reservations in Idaho, entered Wyoming and hunted, thereby breaking the laws for the preservation of game. Certain of the Indians being arrested by the constable of Jackson Hole—which is south of and very near Yellowstone Park—tried to escape, when one Indian was killed and six others were wounded. This was on July 13. The settlers at Jackson Hole organized to drive the Indians from the Hoback basin, where they were assembling, and the Governor of Wyoming demanded of the General Government that it should return these Indians to their reservations in other States. Cavalry and infantry were sent to the neighborhood, when, within a reasonable period, the Indians peaceably dispersed. The Indians claim that they received insufficient rations and were hunting for necessary food on unoccupied land, as they had a treaty right to do. The settlers assert that they were killing game for the hides. The United States deputy marshal who investigated the trouble says, in his report, that "the killing of game by Indians and the increasing number of tourist hunters threatens to deplete the region of big game—deer, elk, moose, etc.—so as to jeopard the occupation of the professional guides at Jackson Hole. It was decided at the close of last season to keep the Indians out of the region this year, and the several events this summer are the results of carefully prepared plans." He also says it was decided that some one should be killed, so that the matter could be brought before the courts, and he justifies the action of the Indians, of whom 3 in all were killed. The State contends that the lands on which the In-

dians were hunting were not unoccupied; that the admission of Wyoming to statehood gave the State the right to make proper police regulations; and that the game laws are proper police regulations, and apply to Indians as well as to white men.

**Legislative Session.**—The third Legislature convened on Jan. 7, and continued in session forty days, during which period it enacted 126 laws. Among these was a general law for the incorporation of cities having over 4,000 population; an act allowing verdicts to be rendered upon a concurrence of three fourths of the jurors; an act providing that a party producing a witness is allowed to impeach him by proving prior contradictory statements; and an act whose object is to preserve the few remnants of the buffalo by an absolute prohibition of the killing of that animal. Provision was made for the establishment of a Home for Soldiers and Sailors, with an appropriation of \$7,500, and \$2,500 was voted for the construction of a fish hatchery at Sundance. A bill was also passed accepting the 1,000,000-acre grant of arid land under the Carey act, and providing terms and conditions under which the land shall be selected and reclaimed, and an act to regulate the formation and procedure of guarantee and surety companies was passed.

Since 1893, when the Legislature failed to elect a Senator, Wyoming has been represented by Joseph M. Carey only, whose term expired in March of this year. On Jan. 8, 1895, the Republican members of the Legislature in caucus nominated Clarence D. Clark for the short term, to end on March 3, 1899, which seat was vacant, and nominated Francis E. Warren to succeed Joseph M. Carey, who did not get a single vote. The opposition to Senator Carey was due to his votes in the Senate against the free coinage of silver. On Jan. 22 both houses proceeded to an election with the following result: Short term—Clark (Republican), 47; Samuel T. Corn (Democrat), 6. For six years from March 4, 1895—Warren (Republican), 47; William H. Holliday (Democrat), 6.

## Y

**YACHTING IN 1894 AND 1895.** Following the unprecedented activity of the racing season in 1893, as described in the "Annual" for that year, there came a period of comparative quiet, or at least of indifference on the part of the general public. It was then believed that the development of the sailing yacht had reached a point where the outlay was no longer justified by the conditions. The building of 9 large "single stickers"—5 American and 4 British—overstocked the market for such craft. In American waters when a vessel of this size has won in the trial races and served her purpose in successfully defending the "America's" cup she is of little use for pleasure yachting, and is usually altered into a schooner, or in some way adapted to the needs of her owner.

In British waters the conditions are somewhat different, since the whole coast of the United

Kingdom is within easy sailing distance, and it is possible to arrange a series of races offering attractive inducements to yachtsmen throughout the season. The Prince of Wales's cutter "Britannia," built after G. L. Watson's design, had unequalled success as a sailing yacht. At the close of the season of 1895 she was easily champion of the British sailing fleet. Some of her successes were no doubt due to the intense loyalty of the British yachting public to the prince. To be one of the "Britannia's" crew is the highest honor within the reach of the English sailorman, and her outfit is probably the most perfect, from the yachtsman's point of view, that is attainable in the wide world. Beyond all this, however, is the undoubted excellence of her model and her proverbial "luck," which is a powerful element in the estimation of seagoing folk, however much it may be despised by the matter-of-fact



landsman. The "America's" cup is the only prize that appears to be beyond "Britannia's" reach. There have been rumors at times that she would cross the ocean and at least try for this coveted trophy, but the regrettable incidents of 1895 have probably placed a veto upon any such undertaking.

"Vigilant," the winner of the international races of 1893, was for sale during the ensuing winter, and was purchased by Mr. George J. Gould, of New York, and sent across the ocean early in the season of 1894 to take part in as many regattas as were open to her. While she was beyond question a fast boat, she embodied a last attempt to combine keel and centerboard in one craft. Her centerboard always bothered her even in home waters, and when she reached the coast of Britain it seemed to take especial delight in justifying the distrust that the English have always cherished for that useful and effective contrivance.

Americans may perhaps be pardoned for feeling a certain pride in the fact that no American pilot has ever permitted a British cup challenger to run aground during an important race, and it is equally to the honor of British yachtsmen that they used very plain language in regard to the British pilot who three several times ran "Vigilant" upon the rocks, and finally knocked the centerboard out of her altogether, disabling her for the most important race of the season—that for the Cape May cup.

The first race for which "Vigilant" was entered (the Clyde Regatta of July 5) saw a grievous mishap, in which most fortunately the sole American yacht was not concerned. "Valkyrie," "Vigilant's" antagonist of the year before, was run down and sunk by "Satanita." "Satanita" was laid up for repairs for some time, leaving "Britannia" and "Vigilant" to do all the racing in the 90-foot class.

Altogether they sailed 18 races, of which "Britannia" won 11, "Vigilant" 6, and "Satanita" 1. Almost all the stated regattas of British waters are sailed over sheltered courses where frequent turns are necessary and where "true" winds are the exception rather than the rule. Whenever "Vigilant" had an open sea before her and a "strong and steady wind" she gave a good account of herself. "Under such conditions," wrote a British naval officer, George Leigh Blake, "'Britannia' can not look at her." When all is said, however, it must be admitted that the result of "Vigilant's" expedition to British waters was not very satisfactory, though she brought home a number of very handsome silver cups to prove that she was no mean antagonist even for "Britannia" in her own home waters. It is very much to be regretted that she was prevented by the loss of her centerboard from sailing the cross-channel race to Cherbourg and back, which would have afforded a fairer opportunity for comparing the two boats than was given by all the other races combined.

1895.—After his plucky but unsuccessful contest for the "America's" cup in 1893, Lord Dunsraven, as has been related, lost "Valkyrie II" in collision with "Satanita." He very soon challenged anew for the "America's" cup, and placed an order with his former designer, Mr. G. L. Watson, for "Valkyrie III." As soon as the

conditions for the race were fairly agreed upon steps were taken by the New York Yacht Club to secure a worthy antagonist for what must needs prove a formidable craft. The necessary funds were promptly provided and the order placed with the Herreshoff Brothers, of Bristol, R. I., who since the death of Mr. Edward Burgess have attained the first rank among American designers.

For the first time in the history of the cup races the centerboard was discarded, to the great delight of the "cutter faction," who had for years been endeavoring to banish it from sea-going yachts.

Of late both these accomplished designers have been studying one another's models, and as a result "Valkyrie III" and "Defender" came out very much alike. The American abandoned the long, straight line of keel that was, perhaps, a survival of early prejudices, and considerably narrowed his beam. The Englishman widened his beam, probably as the result of his observations in American waters.

The American made many innovations in the matter of construction, using aluminium for deck beams and other parts of the frame, and resorting to many novel and ingenious devices to secure lightness and strength. The Englishman adhered in the main to traditional methods of composite framing, but introduced at least one novel feature, which will no doubt be adopted by other builders, namely, placing the bulwarks some 10 inches inboard from the gunwales, so that less water remains on deck and less frictional resistance is offered when sailing with the lee rail awash.

When compared in their general sailing features the two yachts were so much alike that there was every prospect of the most exciting series of international races ever witnessed.

The official measurements of the two were:

DIMENSIONS.	"Valkyrie."	"Defender."
	Feet.	Feet.
Length on load water line.....	88.85	88.45
Length from after end of main boom to forward point of measurement.	186.02	181.79
Length from fore side of mast to forward point of measurement...	78.94	78.55
Length of spinnaker boom.....	78.94	78.86
Length of gaff.....	59.00	64.00
Length of topmast.....	44.78	45.94
Height from upper side of main boom to topmast head block.....	129.80	125.48
Square root of sail area as per rule..	114.14	112.26
Sail area, square feet.....	13,027.93	12,602.80
Sailing length, per rule.....	101.49	100.86
"Valkyrie" allows "Defender" 29 $\frac{1}{10}$ seconds.		

One noteworthy incident of "Defender's" outfit was the shipment of an American crew, a matter which was attended with some difficulty since American sailormen are not inclined to submit themselves to strict naval discipline, except in case of war. However, an excellent crew was shipped by appealing to the patriotism of Maine fishermen, and after a few days of drill they fully justified Capt. Haff's expectations.

Mr. C. Oliver Iselin managed the "Defender" for the Regatta Committee of the New York Yacht Club, and it was thought that every precaution had been taken to guard against all possible misunderstandings. In regard to the great bugbear of English yachtsmen, namely, the

presence of an uncontrollable fleet of excursion steamers, special measures were taken, and some at least of the English spectators declared that they could not see that one boat was more annoyed than the other.

The first race was sailed on Sept. 7. "Defender" won by eight minutes, twenty seconds. Upon the whole, the race was satisfactory, with a good sailing breeze and fair all-round conditions.

The second race was on Sept. 10. When the boats were making for the line an excursion boat lay in "Defender's" course. She avoided her, and, coming out near the line, was to the leeward of "Valkyrie," consequently having right of way. By a miscalculation "Valkyrie's" main boom struck "Defender's" rigging and carried away one of her topmast shrouds. "Defender" hoisted a protest flag, but continued the race and was beaten. Every effort was made to call the race "off" and resail it, but Lord Dunraven declined.

The third race was started Sept. 12 under what seemed extremely favorable conditions—a good breeze, a clear course, and the excursion fleet quite out of the way. After seeing "Defender" across the starting line, "Valkyrie" put about and returned to her anchorage. Lord Dunraven explained this action by saying that under the existing conditions (specifying the excursion fleet) he must decline to sail any more races.

This decision excited much indignation in America and some surprise in England, but nothing could be done, and Lord Dunraven sailed for home.

In a few weeks there appeared in "London Field" a letter from Dunraven specifically charging that after having been officially measured the "Defender" was secretly loaded with extra ballast, sinking her 4 inches deeper in the water than when she was measured.

As this was a direct charge of scoundrelism against the managers, it could not be ignored, and a meeting of the New York Yacht Club was called to take action. A committee was appointed, consisting of J. Pierpont Morgan, William C. Whitney, George L. Rives, Capt. A. T. Mahan, U. S. N., and the Hon. E. J. Phelps.

Lord Dunraven crossed the ocean, bringing with him distinguished legal counsel. The New York Yacht Club engaged Joseph H. Choate, of the New York bar. Lord Dunraven returned at once to England after giving his own testimony, in effect that to the best of his judgment, from ocular observation, the trim of the "De-

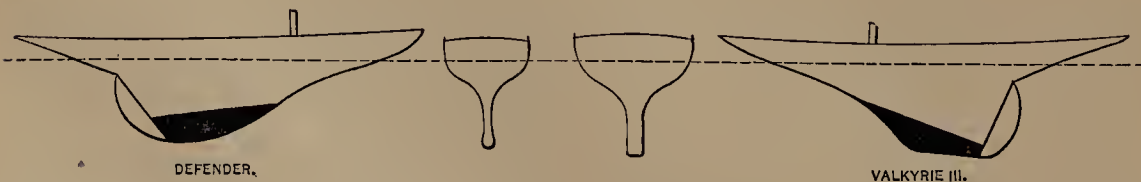
fender" was altered as charged by him in his letter to the "Field." Many witnesses were examined, including members of the crews of both yachts, and after careful consideration of all the evidence the committee made the following report:

"Upon a careful consideration of the whole case, the committee are unanimously of the opinion that the charge made by Lord Dunraven, and which has been the subject of this investigation, had its origin in mistake; that it is not only not sustained by evidence, but is completely disproved; and that all the circumstances indicated by him as giving rise to his suspicion are entirely and satisfactorily explained. They deem it, therefore, but just to Mr. Iselin and the gentlemen concerned with him, as well as to the officers and crew of the 'Defender,' that the committee should express emphatically their conviction that nothing whatever occurred in connection with the race in question that casts the least suspicion upon the integrity or propriety of their conduct. And the committee are not willing to doubt that if Lord Dunraven had remained present throughout the investigation, so as to have heard all the evidence that was introduced, he would of his own motion have withdrawn a charge that was so plainly founded upon mistake, and that has been so unfortunate in the publicity it has attained and the feeling to which it has given rise."

A courteous message was sent to Lord Dunraven, informing him of this conclusion and hinting that as a member of the club some personal recognition of this conclusion would be expected. None was forthcoming, although it was understood that his lordship's resignation was on the way. It did not arrive in time for the meeting of the club, and if it had the fact would probably have made no difference, as the club in its then temper would have refused to accept it.

The club therefore proceeded to pass a resolution, with only one dissenting vote, expelling Lord Dunraven from his honorary membership, on the ground that having made charges of dishonorable conduct against fellow-members, and having failed to prove them, he had also failed to make the only *amende* possible for a gentleman when he finds himself mistaken.

The yacht club acted throughout with the utmost courtesy and consideration for Lord Dunraven, and a number of the best English journals have admitted the practical justice of its verdict.





# INDEX

TO THE TWENTY VOLUMES, NEW SERIES, OF THE ANNUAL CYCLOPÆDIA.

1876 to 1895.

- Aarifi Pasha, sketch, ii, 1.  
 Abba, battle at, x, 317.  
 Abbe, C., observations by, iii, 34; xii, 487.  
 Abbe, Prof., ix, 502, 507-510.  
 Abbett, Leon, obit., xix, 560.  
 Abbot, Ezra, obit., ix, 601.  
 Abbott, B. V., obit., xv, 631.  
 Abbott, C. C., discovery by, vi, 19; ix, 16; xi, 23.  
 Abbott, Emma, obit., xvi, 603.  
 Abbott, H. C. D., x, 45; xi, 46.  
 Abbott, J. C., obit., vi, 678.  
 Abbott, Josiah G., obit., xvi, 603.  
 Abbott, J. S. C., sketch, ii, 1.  
 Abbott, W. P., obit., iii, 631.  
 Abdallah, Tashi, xii, 244.  
 Abdallah, the Sheik, v, 623.  
 Abd-el-Kader, sketch, iv, 1; x, 317, 318.  
 Abd-el-Samet, ix, 301.  
 Abdomen, the, xiii, 752.  
 Abdominal section, x, 742.  
 Abdul-Aziz, i, 1, 760.  
 Abdul-Hamid II, i, 2; vi, 841.  
 Abdul Kerim, sketch, ii, 1; x, 317.  
 Abdul Melik, xi, 6.  
 Abdul Munin Khan, xi, 6.  
 Abdurrahman Khan, v, 1; struggle with Ayoub, vi, 3; viii, 1, 4; ix, 3, 5; x, 2, 4, 7, 12; xi, 4, 5; xii, 491.  
 Abdy, Sir T. N., obit., ii, 591.  
 A'Beckett, G. A., obit., xiv, 663.  
 Abeel, Gustavus, obit., xii, 567.  
 Abel, Frederick A., experiments by, iv, 131; theories, x, 160, 343, 574; port., xv, 31.  
 Abell, Arunah S., sketch, xiii, 621.  
 Abercorn, Duke of, obit., x, 655.  
 Abercrombie, J. J., obit., ii, 574.  
 Abercrombie, Ralph, xii, 491.  
 Aberdare, H. A. B., obit., xx, 602.  
 Aberdare Mountains, ix, 347.  
 Aberdeen, Earl of, port., xviii, 263.  
 Aberdeen, S. Dak., xv, 118.  
 Aberdeen, Wash., xvi, 145.  
 Aberration, constant of, xiii, 56.  
 Abou Roash, pyramid of, ix, 21.  
 About, E., obit., x, 655.  
 Absentee, xiii, 1.  
 Absorption of liquids, xii, 676.  
 Abt, Franz, obit., x, 656.  
 Abu Hubba, inscriptions, xii, 17.  
 Abu Klea Wells, engagement at, ix, 304; x, 116, 314, 319.  
 Abydos, Tablet of, vii, 257.  
 Abyssinia, xix, 1.  
 Abyssinia, in every volume except iii, v-x; war with Egypt, i, 3; ii, 2; iv, 2, 333; v, 236; views in, illustrations, i, 4, 5; ii, 2; provinces of, ii, 2; cession of Massowah, viii, 302; treaty, ix, 296; the Italians in, xi, 1; xii, 1; attack on them, xii, 2; conquest of Harrar, xii, 2; treaty with England, xii, 1; intercourse with Russia, xi, 1; xiii, 2; xiv, 1; xv, 1; xvi, 1; xvii, 1; xviii, 1.  
 Academy of Sciences, National, xv, 572; xvi, 543; xvii, 480; xviii, 502; xix, 502.  
 Acadia, ix, 265.  
 Acadia College, i, 67.  
 Accident-insurance law, ix, 357.  
 Accident to workmen, Congress on, xiv, 813.  
 Acclimatization, xii, 669; capability of races for, 669.  
 Acetanilide, xi, 289.  
 Acetophenone, xi, 289.  
 Acetoxims, xii, 111.  
 Achard, invention by, vi, 255.  
 Acbarezza, Duchess of, obit., i, 627.  
 Acheen, war in, i, 584; ii, 541; iii, 597; iv, 657; v, 555; vi, 625; vii, 590; viii, 557; ix, 557; x, 625; xi, 608, 609; pirates in, 609; new disease in, 608.  
 Acheson, A. W., obit., xv, 631.  
 Achterfeldt, J. H., obit., ii, 591.  
 Acids, new, ii, 91; viii, 111; xii, 105.  
 Accolas, Émile, obit., xvi, 663.  
 Acocagua Mountains, ix, 542, 543.  
 Acoustics, xx, 649.  
 Acropolis at Athens, xiii, 26.  
 Adair, W. P., obit., v, 587.  
 Ada Kaleh, fortress of, iii, 45.  
 Adam, Edmond, obit., ii, 551.  
 Adam, John J., sketch, xiii, 621.  
 Adam, W. P., obit., vi, 690.  
 Adami, J. G., experiments by, x, 692.  
 Adams, Alvin, obit., ii, 574.  
 Adams, Charles Francis, obit. and portrait, xi, 1.  
 Adams, Edwin, sketch, ii, 3.  
 Adams, Henry, xii, 479.  
 Adams, J. C., obit., xvii, 583.  
 Adams, J. F., obit., vi, 678.  
 Adams, James O., obit., xii, 567.  
 Adams, John Q., obit., xix, 560.  
 Adams, Myron, obit., xx, 561.  
 Adams, William, obit., v, 587.  
 Addington, Lord, sketch, xiv, 654.  
 Adce, Daniel, obit., xvii, 531.  
 Aden, xiv, 398; xv, 404; xvi, 342; xvii, 325.  
 Adirondack Forests, viii, 356, 576; ix, 582; x, 635.  
 Adler, ix, 359.  
 Adler, N. M., obit., xv, 672.  
 Adler, Samuel, obit., xvi, 603.  
 Adlie, battle at, x, 728.  
 Admiralty building explosion, x, 454.  
 Adolf, prince, obit., xviii, 576.  
 Adrain, G. B., obit., iii, 631.  
 Adulterations of Food, iv, 2; vi, 81, 407, 523, 639; ix, 1; test for glucose in sugar, viii, 112; laws concerning, ix, 3.  
 Advancement of Science, Associations for, in every volume after viii.  
 Advent Christian Church, v, 2. See Adventists.  
 Adventists, i, 5; ii, 3; iii, 1; iv, 5; vi, 1; a prophetess, ii, 4; iv, 5; differences between Seventh-Day, and Seventh-Day Baptists, iii, 49; faith, vi, 1; xi, 2; xii, 3; history, xi, 2; Sabbath question, iii, 4; xiii, 5; xiv, 3; xviii, 4.  
 Æolian Harp, the, x, 607.  
 Æolian Organ, the, x, 618.  
 Aërial Navigation, vi, 543; ix, 72.  
 Aërial Transportation. See Telegraphage, viii, 679.  
 Affirmation. See Oaths.  
 Afghanistan, in every volume except vii and viii; xii, 4; maps, i, 7; iii, 3; iv, 8, 13; v, 5; viii, 1; x, 3; map of Cabul, iv, 13; map of Candahar, v, 7; frontier question, ix, 6, 406, 713; x, 1, 2, 16; xi, 4; Russian and British embassies to, i, 6; views of Cabul and Herat, ii, 5, 6; x, 1; negotiations with Russia, ii, 5, 6; with the Indian Government, iii, 4; view of Candahar, iii, 5; of Lasgird, ix, 5; towers of refuge in, ix, 7; Zhob valley expedition, ix, 7; strategic railroad in, ix, 6; x, 12, 13; xii, 6; map of neutral territory, x, 3; Russian advance, x, 5; xi, 5; the disputed district, x, 6; Herat, x, 7; Penjdeh affair, x, 8; battle, x, 9; the Durbar at Rawal Pindi, x, 12; the Hindus, x, 14; the great powers, x, 15; illustration, junction of the Murghab and Kushk, x, 17; submission of Vakhani to

- Russia, xi, 5; revolt, xi, 5; trans-Caspian railway, xi, 6; xii, 6; Ghilzal revolt, xii, 5; Russian occupation of Kerki, xii, 7, 308; new ally for Russia, xii, 7; rebellion in, xvii, 2; Chitral expedition, xx, 4.
- Afghans, descent claimed by, ii, 4; tribes of, v, 3.
- Afghan War, the, see Afghanistan in vols. iii to x; effect in India, iii, 437; iv, 491; meeting in London, iv, 494; discussed in Parliament, v, 330, 337, 343; vi, 362; Russian correspondence, vi, 800; cost of, v, 386; effect in Persia, v, 622; change in British policy, vi, 2; withdrawal of British troops, vi, 359; neutral territory, x, 3; Afghan boundary, x, 2, 4; xii, 8, 309; map, x, 3, 497; history of the question, ix, 4; x, 1; negotiation, xii, 8.
- Africa, i, 8; ii, 7; iii, 7; iv, 14; v, 9; vi, 4; dispute of England and Germany in, ix, 362-365; x, 119, 395, 415, 459; French annexation in eastern, ix, 339; Italian, x, 504; xii, 304; Portuguese claims in, xi, 371; French, xi, 374; religious institutions in, x, 316. And see articles Cape Colony, Congo Free State, and East Africa.
- Africa, Central, exploration of, see Geographical, etc., in every volume, and ix, 165, 171; treatment of travelers in, iv, 401, 402, 406, 407; customs, iv, 403, 404; extermination of a tribe, iv, 407; interior sea, ix, 315; map of, xiv, 349; southern, map of, xiii, 123; exploration, with map, xviii, 336.
- African migration, xix, 4.
- Afridis, hostilities by, ii, 394.
- Afrikander Bond, the, x, 135.
- Agar, F. L. C., obit., xvi, 663.
- Agaricine, vii, 88.
- Agassiz glacier, ix, 35.
- Agassiz, L., glacier theory, x, 407.
- Agates, ix, 790; Brazilian, ix, 790.
- Agar, Antonio Augusto, obit., xii, 567.
- Agnew, C. R., sketch, xiii, 621.
- Agnew, D. H., obit., xvii, 531.
- Agnostic, xiii, 7.
- Agop, P. K., obit., xvi, 663.
- Agout, Countess d', sketch, i, 9.
- Agrarian agitations in Wales, xi, 404; in Russia, 791; in Germany, xviii, 348; xx, 321.
- Agricultural distinctions, xiv, 723.
- Agricultural wheel, xi, 42.
- Agriculture, i, 10; ii, 8; iii, 7; v, 10; percentage of cultivated lands in various countries, ii, 8; department of, in N. C., ii, 573; sugar in Minn., ii, 523; in Miss., i, 574; wheat weighing and inspection, iv, 623; facilities in N. C., iv, 690; decline of, in England, vii, 1; experiment station, vii, 511; U. S. Department of, established, xiii, 234; xiv, 217; statistics, xvi, 845. And see the articles on the States.
- Ahmed el Heday, ix, 299.
- Ahmed el Hoda, ix, 299.
- Ahmed Mukhtar Pasha, xii, 242.
- Ahmed Vefyk Pasha, sketch, ii, 11.
- Ahn, Prof., x, 191.
- Ahrens, C. D., ix, 517.
- Aigan, J., obit., iii, 631.
- Aignier, Joseph, obit., xi, 708.
- Aiken, Charles Augustus, xvii, 531.
- Aiken, David W., obit., xii, 567.
- Aiken, F., obit., iii, 631.
- Aikem, William, obit., xii, 567.
- Ain Quadis, Kadesh-Barnea, ix, 27.
- Ainsworth, W. H., obit., vii, 644.
- Air, compressed, xx, 255.
- Aird, Thomas, sketch, i, 14.
- Air-thermometer, vii, 92.
- Airy, G. B., observations, vi, 39; obit., xvii, 583.
- Aizpuruz, Gen., x, 179.
- Akerman, A. T., obit., v, 587.
- Akerson, Garret, Jr., obit., xi, 708.
- Akhoond of Swat, obit., iii, 648.
- Akkas, the, vi, 4.
- Akmin, inscribed tablet at, xi, 29.
- Akron, Ohio, xvi, 146.
- Aksakoff, Ivan S., obit., xi, 708.
- Aktapa, x, 8, 10; view of, 17.
- Aktcha, district of, x, 4, 8.
- Alabama, government, statistics, etc., in every volume; Department of Agriculture, viii, 2; tax law, viii, 2; Treasurer absconded, viii, 3; lumber industry, ix, 7; coal in, ix, 7; Confederate monument in Montgomery, xi, 8; view of Capitol, ii, 12; pensions, xix, 4.
- Alabama claims, the, x, 436.
- Alameda, Cal., xviii, 151.
- Alarcon, P. A., obit., xvi, 663.
- Alarms, electric, ix, 309.
- Alaska, iv, 24; xx, 9; map, iv, 25; xx, 9; people, v, 301; need of government, v, 648; statistics, vi, 9; fur-seal industry, vii, 6; glaciers, xx, 10; mountains, xx, 10; volcanoes, viii, 287; xx, 10; Territorial government, ix, 10; x, 399, 765; xi, 380, 826; expedition to, xii, 314; gold in, xii, 779; xvii, 298; boundary of, xiv, 362; xv, 355, 831; reindeer, seal islands, whaling, xx, 14.
- Alaskan chief, tomb of an, ill., xx, 11.
- Alatorre, Gen., x, 466.
- Albanian League, the, against surrender of territory, v, 637, 638; vi, 842; opposition to Montenegro, v, 542; viii, 549; map of Albania, i, 751; disturbances in, ix, 764; x, 752.
- Albany, Capitol at, iv, 671; vi, 658; vii, 614; viii, 570, 575; xi, 159; bi-centennial of, xi, 8; stadt huis, illustration, xi, 8; old Dutch church, illustration, xi, 11; flag, illustration, xi, 11; water, xix, 773.
- Alberger, F. A., obit., ii, 574.
- Alberi, E., obit., iii, 649.
- Albert, J. S., obit., v, 588.
- Albert, Prince of Prussia, made Regent of Brunswick, x, 418.
- Albert, Prince, obit., xvii, 583.
- Albert, W. J., obit., iv, 692.
- Albert Lake circumnavigated, i, 331; Stanley's journey, i, 333.
- Alberta, viii, 81; ix, 270.
- Alberti, C., obit., xv, 672.
- Albertis, explorations by, i, 329.
- Albery, James, sketch, xiv, 651.
- Alboni, Marietta, obit., xix, 608.
- Albrecht, F. R., obit., xx, 603.
- Albrecht, W. E., sketch, i, 18.
- Albuféra, Duc de, obit., ii, 591.
- Albuminoids, in grain, v, 92.
- Albumose, new forms of, ix, 121.
- Alecester, F. B. P. S., obit., xx, 603.
- Alcohol, test for, i, 97; estimation of, in a mixture, ii, 92; freezing-point of mixtures, vi, 100; statistics, iv, 24; effect of, xii, 672.
- Alcorn, J. L., obit., xix, 560.
- Alcott, A. B., sketch and port., xiii, 10.
- Alcott, L. M., obit. and port., xiii, 11.
- Alden, Admiral J., sketch, ii, 13.
- Alden, Joseph, obit., x, 645.
- Aldrich, Anne R., obit., xvii, 531.
- Aleko Pasha, sketch, iv, 26; x, 107.
- Alencar, J. M. de, obit., ii, 591.
- Alert, the, ix, 29; x, 133, 399.
- Alessandria, illustration, i, 418.
- Alexander I. of Bulgaria, sketch, iv, 26; viii, 74; x, 105 *et seq.*, 719, 727 *et seq.*, 752, 754; dethronement and abdication of, xi, 102.
- Alexander II, of Russia, sketches, ii, 13; vi, 10; assassination, vi, 795; trial of assassins, vi, 796.
- Alexander III, of Russia, accession, vi, 798; port., v, 661; coronation, viii, 704, 706; sketch and port., xix, 6.
- Alexander VI, Pope, x, 140.
- Alexander, A. J., obit., xii, 568.
- Alexander, B. S., obit., iii, 631.
- Alexander, Mrs. C. F. (Humphrey), obit., xx, 603.
- Alexander, E. B., sketch, vi, 9; xiii, 621.
- Alexander, Grand Duke of Russia, obit., ii, 591.
- Alexander, H., Jr., obit., iii, 631.
- Alexander Karageorgevitch, obit., x, 656.
- Alexander of Battenberg, obit., xviii, 576.
- Alexander of Orange, obit., ix, 614.
- Alexander, Samuel D., obit., xix, 560.
- Alexander, W. L., obit., ix, 614.
- Alexandre, F., sketch, xiv, 616.
- Alexandria, Anglo-French squadron at, vii, 242; riots in, 244; bombardment of, 244; x, 310; British fleet at, vii, 568; indemnity commission, viii, 297; trials on charge of burning, 298.
- Alexandria, Va., xviii, 151.
- Alexandrine, Grand Duchess, obit., xvii, 584.
- Alexeyeff, M., ix, 121.
- Alfalfa, cultivation of, xi, 631.
- Alfaro, Gen. Eloy, ix, 281.
- Alfonso XII, attempt to assassinate, v, 673; insult to, in France, viii, 397; x, 141; portrait, viii, 735; obit., x, 656.
- Algae, ix, 94.
- Algeria, i, 9, 19; map, i, 19; view of Algiers, 20; French Government in, ii, 14; shots of, iii, 725; revolt, iv, 27; government, v, 285; incursions from Tunis, vi, 311; expropriation of lands, viii, 358; ix, 336; x, 331; xii, 293; xiii, 353; xiv, 343; xv, 333; xvi, 313; xvii, 289; xviii, 328.
- Algol system, xviii, 44.
- Algoma, ix, 266.
- Ali bin Said, obit., xviii, 576.



- Alice, Grand Duchess of Hesse-Darmstadt, sketch, iii, 11.  
 Ali-el-Din Pasha, x, 318.  
 Alikhanoff, Lieut.-Col., x, 5, 7, 8, 9; sketch, 19.  
 Alima River, discovery of, iv, 401.  
 Alimentary canal, viii, 750.  
 Alimonda, G., obit., xvi, 663.  
 Alison, Sir A., in Egypt, and portrait, vii, 251.  
 Alkali Desert, the, iv, 340.  
 Alkali metals, processes for reduction of, xi, 536.  
 Alkaliimetry, indicators for, x, 154.  
 Alkaline springs, x, 595.  
 Alkaloid, volatile, iv, 137; vegetable, v, 89; of pituric, vi, 98; a new, xi, 140.  
 Allain-Targé, x, 376.  
 Allaire, James, xii, 716.  
 Allard, Gen. N., obit., ii, 591.  
 Allcock, Thomas, obit., xvi, 603.  
 Allegheny City, Pa., xi, 159; water, xix, 773.  
 Allen, A. H., experiments, vi, 94; x, 161.  
 Allen, G. A., obit., iii, 631.  
 Allen, Horatio, sketch, xiv, 616.  
 Allen, J. B., nominated, xiii, 838.  
 Allen, J. H., obit., xv, 631.  
 Allen, Jerome, obit., xix, 560.  
 Allen, Lewis, ix, 146.  
 Allen, Lieut. H. J., x, 399.  
 Allen, Nathan, sketch, xiv, 616.  
 Allen, Robert, obit., xi, 662.  
 Allen, W. A., obit., vii, 635.  
 Allen, W. H. H., obit., xviii, 538.  
 Allen, William, sketch, iv, 27; jurist, obit., xvi, 603.  
 Allen, William, philanthropist, obit., xvi, 603.  
 Allen, William F., obit., iii, 631.  
 Allen, W. Fernley, obit., ii, 592.  
 Allentown, xii, 118.  
 Allezeit Voran, Prince, x, 382.  
 Alliance affair, the, xx, 224.  
 Alliance, Churchman's, xiv, 13.  
 Alliance electrical machine, iii, 275.  
 Alliance expedition, vi, 323, 324.  
 Allibone, S. Austin, obit. and portrait, xiv, 616.  
 Alligator, illustration, i, 296.  
 Allingham, W., sketch, xiv, 654.  
 Allon, Henry, obit., xvii, 584.  
 Alloys. See Metallurgy.  
 Alluard, invention by, iii, 545.  
 Allyn, Robert, obit., xix, 561.  
 Almaden company case, ix, 626.  
 Alma-Tadema, x, 359, 364; xi, 345; xii, 276, 277.  
 Almshouse, Tewksbury, viii, 517.  
 Almucantar, the, x, 45; xii, 35.  
 Almy, John Jay, obit., xx, 561.  
 Alpaneca, battle at, x, 467.  
 Alpena, Mich., xvi, 146.  
 Alpine Mountain Club, the, ix, 538; view of cabin, xix, 735.  
 Alps, Tunnels, vii, 11; map, 12.  
 Alsace-Lorraine, map, i, 345; powers of Parliament, ii, 349; final regulation of government, iv, 438; incident, v, 208; government of, vii, 359; language question, viii, 397; ix, 340, 359; x, 380.  
 Alsina, Adolfo, sketch, i, 21.  
 Altar Mountain, ix, 542.  
 Altar, Roman, xvi, 16.  
 Altitudes, vi, 332.  
 Altoona, Pa., xvii, 101.  
 Aluminum, wear of, ii, 500; atomic weight, vi, 93; production, vii, 531; manufacture, viii, 524; ix, 123, 476; boride of, xi, 140; reduction of, xi, 535; xii, 482; alloys, 481; plating and welding, 483; bronze, 483; steel, 483; red color of, 109; xiii, 524; xiv, 540; xv, 528; xvi, 509; xvii, 442; xviii, 482; xix, 467; xx, 469.  
 Alveloz, x, 298.  
 Alvensleben, Gen., obit., ii, 592.  
 Alvord, H. E., xi, 47.  
 Alzog, J. B., obit., iii, 649.  
 Amadeo, sketch and portrait, xv, 6.  
 Amalie, ex-Queen, obit., ii, 592.  
 Amaria, Michele, sketch, xiv, 654.  
 Amaryllis, the, catamaran, ix, 116.  
 Amat di San Filippo e Surso, Cardinal, sketch, iii, 11.  
 Amat, Thaddeus, obit., iii, 631.  
 Amatongaland, xii, 93.  
 Amaxebes, tribe of the, x, 136.  
 Amazon, survey of the, iii, 365, 539; explorations near, iii, 365.  
 Amazons, raids of, xvii, 221.  
 Amber, in Canada, xviii, 267.  
 Amberly, Viscount, obit., i, 627.  
 Ambros, A. W., sketch, i, 21.  
 Ambukol, capture of, ix, 299.  
 Amenemhe, King, ix, 19, 21.  
 Am Ende, Max, x, 329.  
 Amenhotep III, x, 32.  
 Amenophis, x, 32.  
 America, i, 22; ii, 15; iii, 12; iv, 28; v, 15. See under names of the various countries; geographical progress and discovery in, xix, 301.  
 America, the yacht, x, 788.  
 American Board, x, 194.  
 American Conference, International, xiv, 440.  
 American country-seats, architecture of, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.  
 American Literature. See Literature.  
 American Party, organized in Pennsylvania, xii, 659.  
 American protectorate, in Hawaii, xviii, 380.  
 American Water-Color Society exhibitions, etc. See under Fine Arts.  
 Americanists, Congress of, xiv, 18.  
 Americans expelled from Germany, x, 419.  
 Amerman, John, Jr., obit., i, 611.  
 Ames, Adelbert, i, 561.  
 Ames, E. R., sketch, iv, 29.  
 Ames, F. L., obit., xviii, 538.  
 Ames, J., Jr., obit., iii, 631.  
 Ames, Oliver, obit., ii, 574.  
 Ames, Oliver, obit., xx, 561.  
 Ames, Sarah Etta, obit., xix, 561.  
 Amici, Prof., ix, 90.  
 Amidon, experiments, viii, 99.  
 Aminof, explorations by, iii, 359.  
 Aminulla Khan, x, 7.  
 Ammen, Jacob, obit., xix, 561.  
 Ammonia, in saliva, vi, 100; in potable waters, vii, 91.  
 Amnesty, bill in Congress, i, 182-193; to Cubans, ii, 700; for press offenses, iii, 343, 344; in France, iv, 389; v, 284; return of exiles, v, 285.  
 Amos, Sheldon, obit., xi, 708.  
 Amphiarus, temple of, xi, 34.  
 Amphibious navigation, xx, 250.  
 Amphill, O. R., obit., ix, 614.  
 Amr-el-Makasef, revolt, viii, 299.  
 Amsterdam fair, viii, 824; riots in, xi, 607. Exhibition, xx, 525.  
 Amsterdam, N. Y., xii, 119.  
 Amu-darja river, the, xii, 307.  
 Amusements, General Assembly on, v, 630.  
 Amylene, xii, 678.  
 Anaconda, illustration, i, 78.  
 Anæsthetic, a new local, ix, 271.  
 Anæsthetics, xiii, 752.  
 Analytic chemistry, viii, 117.  
 Anam, ix, 337; x, 24; map, i, 109; royal treasures in, x, 30; military campaign in, x, 24, 30; massacre of Christians in, x, 31; new king, x, 31; protectorate over, xi, 378; xii, 298. See Tonquin.  
 Anarchists, x, 418; xi, 12; executions of, in Austria, ix, 67; French, ix, 344; x, 379; xix, 289; Niederwald, plot of, ix, 353; expelled from Switzerland, 754; x, 746; trials in Austria, xii, 52; in Illinois, xii, 377; act to punish, xii, 374; xvii, 287; in Belgium, xvii, 61; trial of, xiv, 77; in France, xviii, 328; pardoned in Illinois, xviii, 398; in Spain, xix, 723.  
 Ancient history, earliest date established in, ix, 18.  
 Andaman Islands, xvi, 344; xvii, 327.  
 Anderledy, A., obit., xvii, 384.  
 Anderson, A. A., explorer, iv, 404.  
 Anderson, Charles, xx, 561.  
 Anderson, Ind., xv, 118.  
 Anderson, J. A., obit., xvii, 531.  
 Anderson, J. R., obit., xvii, 532.  
 Anderson, Larz, obit., iii, 631.  
 Anderson, Louise, obit., ii, 574.  
 Anderson, L. W., obit., xii, 568.  
 Anderson, M. B., obit. and port., xv, 631.  
 Anderson, R. H., obit., iv, 692.  
 Anderson, Sir John, obit., xi, 708.  
 Andersonville prison, i, 164-192.  
 Andes, the, explorations in, vi, 330; ix, 540-543; new pass over, viii, 123, 384.  
 Andkhol, x, 2, 8.  
 Andlau, Gaston J. H. d', obit., xix, 609.  
 Andlaw, Comte d', xii, 294.  
 Andlaw, F. X. von, obit., i, 627.  
 Andorra, ix, 345.  
 Andouin, Victor, ix, 273; x, 304.  
 Andover Cases, the, xi, 206; xii, 146.  
 Andrae, C. C., obit., xviii, 576.  
 Andral, Gabriel, sketch, i, 22; investigations by, viii, 60.  
 Andrassy, Count, policy of, i, 387, 388, 710, 760; ii, 55, 57, 381; iii, 43, 44; resignation of, iv, 67; and Bismarck, iv, 67; sketch and portrait, xv, 7.  
 Andrassy, Countess, obit., i, 628.  
 Andrews, invention by, vi, 258.  
 Andrews, Judson B., obit., xix, 561.  
 Andrews, Justin, obit., xix, 561.  
 Andrews, S. Pearl, obit., xi, 662.  
 Andromeda, new star in, x, 53.  
 Anethan, Barcn, obit., xv, 672.  
 Angel, Benjamin F., obit., xix, 561.  
 Angela, Mother, obit., xi, 790.  
 Angelin, N. P., obit., i, 628.  
 Angel's, Philip de, Cardinal, obit., ii, 592.  
 Angle, James L., obit., xvi, 604.

- Anglican Churches, in every volume; resolution in regard to Christian unity, i, 22; iv, 35; to the Athanasian creed, 23, 26; ii, 18; iv, 31; Society of the Holy Cross, ii, 21; missions in Ceylon, ii, 24; iii, 13; communication with the P. E. Church in the United States, ii, 27; controversy concerning cemeteries, i, 25; iii, 13; new rubric, iv, 31; mistakes in history, 31; case of Rev. S. F. Green, vi, 13; vii, 14; viii, 7; marriage regulations, x, 20; free seats in churches, 23; Congress of, x, 23; xx, 19; church reform, xi, 20, 21.
- Anglican ritualistic controversy, i, 25; ii, 21; iii, 15; iv, 32, 34; vi, 13; vii, 14; viii, 6; ix, 11; xii, 11.
- Anglo-Belgian Agreement, xix, 152.
- Anglo-Saxon coins, dug up in Rome, ix, 27.
- Anglo-Turkish convention, failure of, xii, 241.
- Angra Pequena, ix, 110, 362; x, 137, 395.
- Aniline salts, new, iv, 132.
- Animal chemistry, vii, 94; viii, 119.
- Animal industry bureau, ix, 185.
- Animal plants, iv, 36.
- Animals, societies for prevention of cruelty to, iv, 601.
- Anisic acid, x, 298.
- Annam. See Anam.
- Annapolis, Md., xvii, 101.
- Ann Arbor, Mich., xvii, 102.
- Annenkoff, Gen., xiii, 7.
- Annexations, intervention in cases of, vii, 626; Hawaii, xviii, 381.
- Annibale, Giuseppi, xvii, 584.
- Anniston, xiii, 158.
- Ansdell, R., obit., x, 657.
- Anselme, Dom, obit., xvii, 584.
- Anson, A. H. A., obit., ii, 592.
- Ansted, D. T., obit., v, 597.
- Antelopes, x, 387.
- Anthon, G. C., obit., ii, 574.
- Anthony, Allard, ii, 575.
- Anthony, H. B., obit., ix, 601.
- Anthony, James, obit., i, 611.
- Anthony, J. G., obit., ii, 575.
- Anthony, S. B., x, 725.
- Anthracene, ix, 124; x, 157.
- Anthropology, vi, 19.
- Antietam, battle of, x, 560.
- Antifebrin, xi, 289.
- Anti-ferment, an, ii, 97.
- Anti-foreign movement in China, xviii, 149.
- Antilles, Danish and Dutch, xvi, 865; xvii, 793, 794.
- Anti-Mason party, the, v, 697.
- Anti-Monopoly League, vi, 652.
- Antimony-mines in Mexico, v, 18; in Portugal, xii, 485; reduction of ore, xii, 485.
- Antinori expedition, iii, 362.
- Antiochus Theos, ix, 18.
- Antipodes island, xii, 312.
- Anti-Poverty Society, xiii, 20.
- Antipyrine, ix, 271; x, 298.
- Anti-revolution Bill in Germany, xix, 321.
- Antisemitic movement, xvii, 316.
- Antiseptics, vii, 95, 315; viii, 116, 747; ix, 747; x, 300; xiii, 752.
- Anti-Slavery, Congress, xv, 13, 332; xvii, 168; posts at Tanganyika, xviii, 188.
- Anti-Socialist law, xiii, 370; the movement, 758.
- Antonelli, Cardinal, sketch, i, 27.
- Antonelli, Count, explorations, viii, 386; xii, 304.
- Antoninus of Piacenza, x, 37.
- Antonucci, A. B., obit., iv, 697.
- Antwerp, harbor improvement, iv, 345; vii, 280; exposition, x, 91, 366; exposition, ix, 12; views of, xix, 13; main entrance, illustration, xix, 14; U. S. building, xix, 15.
- Anzengruber, L., sketch, xiv, 654.
- Apaches, the. See Indians.
- Apatite, xiv, 15.
- Apex section, xiii, 556.
- Apfaltern, Iwan, obit., i, 628.
- Apolloni, Achilles, obit., xviii, 576.
- Apollonic, musical instrument, history and description of, x, 614.
- Appalachian Club, ix, 538.
- Apparatus, chemical, xii, 148.
- Appleton, D. S., obit., xv, 632.
- Appleton, Col. Daniel, port., xx, 513.
- Appleton, George S., sketch, iii, 16.
- Appleton, John A., sketch, vi, 20.
- Appleton, John A., obit., xvi, 604.
- Appleton, T. G., obit., ix, 601.
- Appleton, Wis., xvii, 103.
- Appomattox, surrender at, x, 430; change of name, xix, 769.
- Apponyi, R., Count, obit., i, 628.
- Apportionment of Representatives, bill in Congress, vi, 184; vii, 142; in New York, iv, 671; xvi, 220. See also Re-districting.
- Apuzzo, F., obit., v, 597.
- Aqua, King, x, 121.
- Aquatic life, physiology of, ix, 661.
- Aqueduct of Samos, xi, 34; at Venice, x, 332; new Croton, ix, 314; x, 332; xii, 555; illustrations, 556, 557, 559, 560; Washington, ix, 316.
- Aquilonda, Lake, v, 295.
- Aquinas, Leo XIII on, iv, 773.
- Arab revolt, xiv, 830; xvii, 170.
- Arabi Ahmed Pasha (Arabi Bey), vi, 236; vii, 241; sketch and portrait, vii, 21.
- Arabia, insurrections in, ix, 764; xvi, 828; xvii, 743; pacification of, xviii, 726.
- Arabic Lexicon. See Lane, i, 442.
- Arago, Etienne, obit., xvii, 584.
- Arana, M. S., x, 100.
- Araucania, vii, 99.
- Arbitration, international, xiii, 234; obligation of merchants to abide by, vi, 21; of United States on disputed boundaries, vi, 777, 778; of claims between United States and Mexico, viii, 469; boards of, in France, ix, 344.
- Arbor-day, xii, 765; xiii, 509.
- Arbuthnot, W., obit., i, 628.
- Arch, memorial, xvi, 593.
- Archæology, in vols. i, vi, ix, x, xi, xii, xiii, xiv, xvi, xvii, xix, and xx.
- Archbishop, powers of, xiii, 14.
- Archer, Fred. J., obit., xi, 708.
- Archibald, Sir A. G., obit., xvii, 584.
- Archibald, Sir T. D., obit., i, 628.
- Architecture, Egyptian, x, 32.
- Arc-lamps, ix, 304.
- Arcionati-Visconti, obit., i, 628.
- Arco-Valley, Count, obit., xvi, 663.
- Arctic discovery, xiv, 355; xix, 298.
- Arctic exploration, maps of Arctic North America, i, 325, and ix, 29; islands discovered, iii, 354; vii, 331, 334; circumpolar stations, viii, 382; Greely Expedition, viii, 420; ix, 33; Greely relief, 38; investigation, 38; ix, 348; x, 398; farthest north, ix, 31. And see Geographical Progress.
- Ardecche, defile of the, in the Cévennes, illustration, xix, 289.
- Ardmillan, Lord, obit., i, 628.
- Area of United States, vi, 850.
- Arekaïne, xi, 290.
- Aretina, Guido, ix, 549.
- Arifak Mountains, iv, 408.
- Argentine, Kan., xvii, 104.
- Argentine Republic, in every volume; maps, i, 37; vi, 26; American products in, viii, 14; gauchos, illustration, iii, 21; treaty of limits with Chili, vi, 25; new steamers, lines, xi, 27; coal and oil in, xii, 28; financial depression, i, 35; ii, 30; iii, 18, 19; v, 20; internal improvements, i, 36; iii, 20; immigration to, iii, 18, 22; iv, 22; ix, 38; xi, 28; view of Buenos Ayres, ii, 31; of bank of, vii, 25; revolts in, iii, 17; Patagonian question, iv, 38; x, 41; financial crisis, x, 39; small trade with United States, x, 40; education, 41; explorations in, xi, 39; drainage of swamp lands, 37; international exhibition in, x, 41; xiii, 34; xiv, 39; xv, 16; xvi, 23; xvii, 9; xviii, 15; boundary, 16; Missiones dispute, xx, 95.
- Argles, Marsham, obit., xvii, 584.
- Argyll, Duke of, sketch, v, 23.
- Aryrodite, xi, 139, 140.
- Aristotle's treatise, *fac simile* of, xvi, 21.
- Arizona, in every volume; Indian question in, viii, 17; Indian relies in, ix, 17; uncertainty of land-grants in, ix, 41; Mormons in, ix, 41; x, 43; railroad surveys in, ix, 41; Indian hostilities in, xi, 40; xii, 28; lumber in, 29; xiii, 37; xiv, 31; xv, 20; xvi, 26; xvii, 16; xviii, 19; land titles, xix, 29; irrigation, xx, 29.
- Ark of Noah, so-called, ix, 28.
- Arkansas, in every volume; pronunciation of name, v, 24; State debt, i, 4; iii, 24; iv, 41; vi, 32; view of capitol, ii, 37; Hot Springs case, iii, 24; iv, 45; v, 25; conflict between Federal and State courts, iii, 25; Indian affairs, iii, 28; iv, 43; bribery investigation, iv, 38; Teller committee investigation, iv, 40; homestead acts, iv, 44; claim against United States Government, v, 25; education in, vi, 31; intimidation in, vi, 31; railroad aid bonds, vii, 28; viii, 19; agricultural wheel, xi, 42; bonds repudiated, ix, 42; Woodruff defalcation, xvii, 18; xix, 30.
- Arkansas City, Kan., xvi, 147.
- Arkansas River, xvii, 18.
- Arlberg Tunnel, viii, 310; x, 331.



- Armenia, misgovernment of, v, 387; scheme for government, v, 689; question of, vii, 803; viii, 773; map, iii, 789; x, 720; agitation, xiii, 769; political trials, xviii, 726.
- Armenian massacres, message on, to Congress, xx, 192.
- Armenian question and Catholic Church, xx, 688; in Turkey, xx, 721.
- Armenian Churches, the, viii, 153; ix, 280.
- Armenian troubles, xix, 745.
- Armies, discipline bill in Great Britain, iv, 452; reorganization in Denmark, iv, 313; new laws in France, ii, 301; v, 278; strength of, in France, iii, 348; bill in Germany, v, 317; new law in Netherlands, vi, 627; the Persian, vi, 733; Spanish, vii, 750; the Swiss, vi, 829. See *Rifles Military*.
- Arminite, xi, 139.
- Arminius, statue of. See *Bandel*, i, 61.
- Armstrong, Edward, x, 364; xii, 277.
- Armitage, Sir E., obit., i, 628.
- Arms, William, sketch, xiv, 617.
- Armstrong, D. H., obit., xviii, 538.
- Armstrong, H. B., obit., ix, 601.
- Armstrong, Henry B., x, 148.
- Armstrong, Henry E., x, 46.
- Armstrong, John J., obit., xi, 663.
- Armstrong, S. C., obit., xviii, 538.
- Armstrong gun, the, vii, 581.
- Army, United States, i, 41; ii, 38; iii, 28; iv, 46; v, 26; vi, 35; vii, 31; appropriations, iii, 136, 196-213, 802; iv, 226, 234, 251-274; veto, 265, 272; v, 167-172; use of, as a *posse comitatus*, iii, 30, 196-213; retirement of officers, vii, 149; grades of office in the, xii, 205.
- Arnason, John, sketch, xiii, 659.
- Arnaud, F., obit., iii, 649.
- Arndt, H., obit., i, 628.
- Arndt, W., obit., xx, 603.
- Arndts von Arnesberg, K. L., obit., iii, 649.
- Arnim, Count Harry von, trial of, i, 348; sketch, vi, 36.
- Arnold, Aaron, obit., i, 612.
- Arnold, experiments by, x, 156.
- Arnold, I. N., obit., ix, 602.
- Arnold, Matthew, sketch and portrait, xiii, 41.
- Arnold, T. J., obit., ii, 592.
- Arnot, John, Jr., obit., 663.
- Aronsohn, experiments by, x, 690, 691.
- Aronson, Alexander I., obit., xx, 561.
- Aroostook region, xviii, 472.
- Arrivabene, Count, obit., vi, 690.
- Arrol, Messrs., work by, x, 328.
- Arrom, Cecilia de. See *Caballero*, i, 82.
- Arrow-poison, x, 299.
- Arsenic, solvent for, i, 98; tests for, i, 100; vi, 95; in the body, i, 101; v, 92; viii, 119; separation from antimony, iii, 90; from copper, viii, 113; as coloring-matter, iv, 2, 4; in wall-paper, vi, 99; poisoning by, v, 91; vi, 751; poisoning from bismuth, vii, 90; xiii, 144.
- Art exhibitions and sales. See *Fine Arts*.
- Artesian wells, ii, 280; deepest in the world, ii, 281; in Georgia, vii, 348; patents, viii, 446; xii, 259; cap for, illustration, 259; xiv, 248, 456; xvii, 255, 763.
- Arthur, C. A., sketch and portrait, vi, 36; inaugural and proclamation, vi, 847; messages, see *Congress and Public Documents*; obit., xi, 42.
- Arthur, T. S., obit., x, 645.
- Arthur Kill Bridge, xiii, 298.
- Arthur Land, ix, 31, 35.
- Arts, chemistry of the, xiii, 143.
- Arxane, King, ii, 53; v, 40.
- Ascension Island, x, 139.
- Asherson, explorations, i, 331.
- Ash, Abraham J., obit., xii, 568.
- Ashantee, war declared by, vi, 4.
- Ashburner, C. A., xiv, 617.
- Ashburner, W., obit., xii, 568.
- Ashcroft, E. H., obit., xviii, 538.
- Ashcroft, J. H., explorations, v, 290.
- Ashe, Thomas S., obit., xii, 569.
- Ashland, Wis., xv, 113.
- Ashtabula disaster, report, ii, 617.
- Asia, general review of events, in first five volumes; Central, explorations in, i, 328; ii, 325; iii, 359, 360; iv, 399; v, 289; vii, 335; ix, 348; x, 395; xi, 306; xii, 376; surveys in, xii, 309; new route to, viii, 385; routes to Central, and trade with, viii, 707; geographical progress and discovery in, xix, 307; Russia in, see *Russian Advances in Asia*. See also under the names of the various countries; Central, railway in, xiii, 7.
- Asia Minor, reforms proposed for, v, 689; famine in, xii, 774.
- Asminine, xi, 290.
- Asmara, captured, xiv, 2.
- Aspinwall, xi, 44.
- Aspinwall, Lloyd, obit., xi, 663.
- Aspinwall, T., obit., i, 612.
- Assab, taken by Italy, v, 9.
- Assassination of President Carnot, xix, 290.
- Assassinations, political, and attempts at, in Abyssinia, v, 69; in Austria, vii, 54; in Colombia, iv, 149; in England, vii, 369; in Germany, iii, 381; in India, iv, 494; in Ireland, vii, 368; viii, 414; in Italy, iii, 458; in Japan, iii, 462; in Peru, iii, 687; in Russia, iii, 744, 745; iv, 682-684, 776; v, 662, 663, 665; vi, 12, 796, 799; in Spain, iii, 774; iv, 822; v, 673; in Turkey, v, 690; in United States, iii, 501, 502; in Kashgaria, i, 41.
- Assing, L., obit., v, 597.
- Assiniboia, Territory of, viii, 81; ix, 270.
- Associations for the Advancement of Science, in every volume after volume viii.
- Assolant, Alfred, obit., xi, 703.
- Assos, excavations at, ix, 25.
- Assur-nasir-pal, King of Assyria, ix, 18.
- Assyrian and Babylonian Researches, recent, see *Archæology*.
- Asteroids, xx, 56; whole number of, ix, 51; diameters of, xix, 52; discovered, see *Planets, Minor*, under *Astronomical Progress*.
- Asthma, new drug for, ix, 272; x, 299.
- Astley, Sir John, obit., xix, 609.
- Astor, Charlotte A., obit., xii, 569.
- Astor, J. J., obit., xv, 632.
- Astor, Mary Paul, obit., xix, 562.
- Astor, William, obit., xvii, 532.
- Astoria, Ore., xvi, 147.
- Astringents, strength of, i, 95.
- Astronomical cipher code, x, 55.
- Astronomical Day, change in, xix, 53.
- Astronomical Journals, vii, 41.
- Astronomical Phenomena and Progress, in every volume.
- Astronomical Prizes. See under *Astronomical Progress*.
- Astronomy, progress of, in 1892, xvii, 34; in 1894, xix, 48; in 1895, xx, 52.
- Astronomy, system of communicating discoveries in, ix, 55.
- Astrophotographic Congress, xii, 37.
- Asylum, right of, in Switzerland, vi, 829; in Spain, vii, 751.
- Atalanti, effect of earthquake at, illustration, xix, 341.
- Atcheen, revolt in. See *Acheen*.
- Atehinoff, N., at Sagallo, xiv, 28.
- Atehison, David R., obit., xi, 664.
- Atehison, Kan., xv, 118.
- Athabasca, Territory of, viii, 81.
- Atheists, admission of, to Parliament, v, 334. See also *Oaths*.
- Athens, map of, and ports, i, 367; plan and view of the Acropolis, 370; ancient, i, 368; excavations, x, 36; xiv, 20.
- Atkinson, E., suggestion of, for cotton exhibition, vi, 260.
- Atkinson, H. A., obit., xvii, 584.
- Atlanta, Ga., xi, 159; exposition at (see *Exposition*), vi, 260; xx, 269; to be State capital, iii, 370; capture of, x, 428; State House, xiv, 365, 366; recent growth of, xviii, 339; water, xix, 774.
- Atlantic City, xii, 119.
- Atlantic, hydrography of, xiii, 58.
- Atlas dynamite, x, 343.
- Atlas Mountains, the, vi, 327.
- Atlay, James, obit., xix, 609.
- Atomic Theory, vi, 40; address on the growth of, vi, 91; ix, 118, 119.
- Atomic Weights, v, 86; vi, 92; vii, 89; viii, 117; ix, 126; x, 154; xii, 100, 110, 145; xiii, 146; xiv, 131; xv, 105; xvi, 115; xvii, 83; xviii, 137; xix, 117; xx, 124.
- Attorney-General of Indiana, investigation as to fees of, iv, 499.
- Atwater, L. H., obit., viii, 586.
- Atwater, W. O., investigations by, vi, 671; x, 695, 696.
- Atwood, Charles B., obit. and port., xx, 562.
- Atwood, David, sketch, xiv, 617.
- Aube, Admiral, obit., xvi, 663.
- Aube, H. L. T., obit., xv, 672.
- Aubin, experiments by, viii, 120.
- Auburn, xi, 159.
- Auchietta, residence of, in Central Africa, iv, 405.
- Auchmuty, R. T., obit., xviii, 538.
- Auckland, New Zealand, ii, 49.
- Audebert, explorations, viii, 387.
- Audenried, J. C., obit., v, 588.

- Audience question in China, xviii, 150.
- Andiphone, the, iv, 54.
- Audouard, O., obit., xv, 672.
- Auerbach, B., obit., vii, 644.
- Auersperg, Count, sketch, i, 51, 59.
- Auersperg, Prince, obit., xv, 672.
- Augier, Emile, sketch, xiv, 655.
- Augsburg, illustration, i, 346.
- August, Prince, x, 657.
- Augusta, Empress, obit., xv, 673.
- Augusta, Ga., xi, 160; xviii, 340.
- Auclle de Paladines, Gen., obit., ii, 592.
- Auriga, new star in, xviii, 44.
- Aurists, new drug used by, ix, 271.
- Aurora Borealis, vii, 34; viii, 28; an artificial, viii, 383.
- Aurora Ring, the, 382.
- Auschütz, experiments by, x, 157.
- Austin, Mrs. Jane G., obit., xix, 562.
- Austin, Texas, new Capitol at, vii, 794; xv, 119; dam at, xviii, 715.
- Australasia, xx, 62; explorations in, i, 329; xiii, 51; xv, 45; xvi, 57; xvii, 41.
- Australasian Colonies, movement to consolidate, i, 53; vi, 43; xviii, 30; ix, 56; x, 57; xi, 59; xviii, 51; postal union, ix, 56; defenses, *ibid.*; annexation schemes, viii, 31; x, 59; silver discoveries, ix, 59; Federal Council, x, 57; importation of convicts, ix, 57, 58, 342; xii, 46. See also Australia and Polynesia.
- Australia, scheme of federation, see Australasian Colonies; gold mining, i, 53; animals of, illustrations, i, 54; ii, 51, 52; bottle-tree, illustration, i, 53; view of Melbourne post-office, iv, 57; of parliament buildings at Sydney, iv, 58; libraries in, ii, 50; prize offered for discovery of coal, ii, 51; Chinese immigration, ii, 51; ministerial changes, ii, 50, 52; iii, 41; exhibition at Sydney, ii, 52; iii, 55; v, 40; at Melbourne, iv, 56; v, 39; constitutional crisis in Victoria, vi, 45; sugar culture in Queensland, vii, 44; land act and mining-laws, ix, 58, 59; drought in, 59; silver ore, 476; annexation of Papua, 639; transportation of French convicts to Papua, 57, 58, 342; defenses, x, 60; xi, 59; xii, 45; contingent in Soudan, x, 60; Russian war-scare, x, 61; American postal route, x, 61; railroads in, x, 327; Kimberley gold-fields, xi, 65; bill to prevent importation of convicts, xii, 46; volcanic eruption, xi, 66; xiii, 60; explorations in, xiv, 355; xvii, 303.
- Australia and Polynesia, in every volume; atrocities in Feejee, i, 53; a Feejeean, illustration, ii, 53; view of Auckland, illustration, ii, 49; death of queens, i, 53; ii, 53; Tonga Islands, ii, 53; Samoa or Navigators' Islands, see Samoa; difficulty with Maoris in New Zealand, iv, 57; vi, 47; vii, 45; viii, 37; ix, 60; x, 66; xi, 66; missions and schools, iv, 58, 59; French annexation, v, 40; xi, 60; British, v, 47; xi, 60; German, x, 59; massacre by Christian natives, vi, 47; land system of New Zealand, vii, 46; labor-traffic in the Southern Pacific, x, 62; Germans in South Sea, xi, 60; colonial exhibition, xi, 60; massacre off the coast of New Guinea, xii, 48; annexation schemes, viii, 31; x, 58; gold mining in, xx, 69.
- Australian system of election, xii, 246.
- Austria, xx, 73.
- Austria-Hungary, xiii, 67; xiv, 7; xv, 49; xvi, 64; xvii, 46; xix, 62; xx, 70; civil marriage bill, xix, 67; conflict with the Vatican, xx, 77.
- Austrian Electoral System, vii, 46.
- Austrian influence, Gladstone on, v, 334.
- Austro-Hungarian Monarchy, in every volume; Ausgleich between Austria and Hungary, ii, 55, 56, 57; iii, 42; xii, 51; Galicia, ii, 59; the Poles, ii, 59; treaty of San Stefano, iii, 45; of Berlin, iv, 62; important conference, iv, 64; resignation of Count Andrassy and succession of Baron Haymerle, iv, 65; religious toleration, iv, 67; denominational schools, v, 44; conflict of nationalities, v, 44, 45; x, 72; xi, 73; Taaffe ministry, ix, 66; reconciliation with Russia, 63; labor troubles, x, 72; xi, 73; change of Cabinet, xi, 72; fires and floods, i, 59; xi, 73; xii, 53; illustrations, i, 55, 58, 59; ii, 56, 57, 58; iii, 43. See Eastern Question.
- Autophone, x, 617.
- Autran, Joseph, obit., ii, 592.
- Auzoux, T. L. J., obit., v, 598.
- Avalanches in Switzerland, vi, 830; in Italy, ix, 416.
- Avenger, the, ix, 377.
- Averill, John T., sketch, xiv, 617.
- Avery, D. D., obit., iv, 692.
- Avery, Geo. W., obit., xviii, 539.
- Averysboro, battle of, x, 429.
- Avesta process, the, x, 580.
- Awdry, Sir J. W., obit., iii, 649.
- Axtell, Samuel B., obit., xvi, 604.
- Axun, relies at, illustrations, ii, 2.
- Ayer, J. C., obit., iii, 631.
- Ayers, William O., obit., xii, 569.
- Aylesford, Earl of, obit., x, 657.
- Aymaras, illustration, ii, 71.
- Ayoub Khan, v, 4; vi, 2; defeat and flight, vi, 4.
- Ayr, bridge of, illustration, i, 356.
- Ayres, Daniel, obit., xvii, 532.
- Ayres, R. B., sketch, xiii, 621.
- Ayrton, electric railway, viii, 678.
- Azotine, x, 343.
- Aztec Calendar Stone, the, viii, 536; illustration, ix, 18.
- Aztec Club of 1847, xix, 644.
- Aztecs, relies of the, ix, 17, 18.
- Babbitt, B. T., sketch, xiv, 617.
- Babbitt, Elijah, obit., xii, 570.
- Babeock, G. R., obit., i, 612.
- Babinet, invention by, v, 51.
- Babylon, inscriptions of ancient, ix, 18; Wolfe expedition, ix, 19; xi, 25.
- Babylonia, expedition to, xvii, 14.
- Babylonian documents, xiii, 30; exploration, xiii, 32.
- Bacarini, A., obit., xv, 673.
- Bache, A. D., port., xv, 573.
- Bache, H. W., obit., iii, 632.
- Bachelder, John B., obit., xix, 562.
- Bacilli. See Micro-Organisms.
- Back, Sir G., sketch, iii, 46.
- Backus, W. W., obit., xvii, 532.
- Bac Le, engagement at, ix, 138; x, 25.
- Bacninh, capture of, ix, 137.
- Bacon, George, obit., i, 612.
- Bacon, John W., sketch, xiii, 621.
- Bacon, Leonard, sketch, vi, 51.
- Bacteria, vi, 669; ix, 93, 129, 496; x, 798, 800; xii, 679; relations of, with various gases, vi, 98. See also Germ Theory, Tuberculosis, and Micro-Organisms.
- Bacteriology, xiii, 752; xviii, 139; xix, 118.
- Badakshan, state of, x, 2; xi, 5.
- Badeau, Adam, obit., xx, 562.
- Baden, Prince Ludwig Wilhelm, sketch, xiii, 659.
- Baden-Baden, illustration, i, 347.
- Badger, George, obit., ii, 575.
- Badges, grand army, illustrations, xii, 329.
- Badghis, district of, x, 4, 6.
- Baer, K. E. von, sketch, i, 60, 322.
- Baert, Lieut., obit., xix, 609.
- Baffin Land, researches in, x, 398.
- Bagally, Sir R., sketch, xiii, 660.
- Bagehot, Walter, obit., ii, 592.
- Baggataway, game of, x, 518.
- Bagley, G. R., obit., i, 612.
- Bagley, James, obit., i, 612.
- Bagley, J. J., sketch, vi, 52.
- Bagratiou-Mouchranksy, obit., i, 628.
- Bags, paper, xi, 734.
- Bahadoor, Sir J., obit., ii, 592.
- Bahama Islands, xiii, 839; xv, 407; xvi, 863; xvii, 793; xx, 761.
- Bahamas. See West Indies.
- Bahrain Islands, xv, 404; xvii, 325.
- Bahtiares, revolt of, vii, 681.
- Bailey, G. A., obit., i, 575.
- Bailey, James M., obit., xix, 562.
- Bailey, Joseph M., obit., xx, 562.
- Bailey, Theodorus, sketch, i, 59.
- Bailly, A. N., obit., xvii, 585.
- Bain, Alexander, invention by, x, 615; obit., ii, 592.
- Baines, Sir E., obit., xv, 673.
- Baird, Matthew, obit., ii, 575.
- Baird, Spencer F., sketch and portrait, xii, 54.
- Baireuth, illustration, i, 573.
- Baiter, J. G., obit., ii, 593.
- Baker, Alfred, sketch, xiv, 617.
- Baker, B., x, 47.
- Baker, Rev. G., obit., ii, 575.
- Baker, G. M., obit., xv, 632.
- Baker, Sir H. W., obit., ii, 593.
- Baker, N. B., obit., i, 612.
- Baker, Peter C., sketch, xiv, 617.
- Baker, Sir Samuel, x, 309.
- Baker, Thomas, obit., i, 628.
- Baker Pasha, Valentine, viii, 295-302; ix, 292; destruction of his army, ix, 293; obit., xii, 621.
- Baker, William Bliss, prize to, x, 361; obit., xi, 664.
- Baker, W. E., sketch, xiii, 621.
- Baker, William M., obit., viii, 586.
- Bakeries, ix, 2.
- Baking-powders, alum in, iii, 85; xiv, 132.
- Bakunin, Michael, sketch, i, 60.
- Ba'ance of power, xiii, 72.



- Bala Murghab, x, 4, 5, 8.  
 Balard, A. J., sketch, i, 61.  
 Balch, Thomas, obit., ii, 575.  
 Baldasseroni, G., sketch, i, 61.  
 Baldissera, Gen., xiii, 3.  
 Bald-knobs, xii, 516; xiii, 565; xiv, 567.  
 Baldwin, Charles C., obit., xx, 562.  
 Baldwin, C. H., sketch, xiii, 622.  
 Baldwin, Henry P., obit., xvii, 532.  
 Baldwin, Jesse G., obit., xii, 570.  
 Baldwin, John Abbel, obit., xi, 664.  
 Baldwin, Judge C., obit., i, 612.  
 Baldwin, Prof., obit., xii, 622.  
 Baldwin, Samuel, obit., xii, 570.  
 Balestier, Wolcott, obit., xvi, 604.  
 Balkan provinces, the, ix, 64; religious movement in, 279; x, 107 *et seq.*: 726, 727; Slav sentiment in, 719.  
 Ball, I. W., obit., v, 588.  
 Ball, John, sketch, xiv, 655.  
 Ball, R. S., ix, 45.  
 Ball, Thomas, xi, 347.  
 Ballance, John, obit., xviii, 576.  
 Ballantine, J., obit., ii, 593.  
 Ballantine, William, obit., xii, 622.  
 Ballantyne, Robert M., obit., xix, 609.  
 Ballay, Dr., explorations by, ii, 233, 334; iv, 401.  
 Ballet, the, xiii, 581; xiv, 579.  
 Ballooning, modern, xvi, 71.  
 Balloons, navigable, ix, 72; reconnaissance in a, x, 25; voyage in, by Burnaby, 115.  
 Ballot, law to prescribe form for, iv, 17, 18; antiquity of the, xii, 244; boxes, xii, 245; box forgery, xiv, 674; reform, xiv, 536; defense of, in Missouri, xx, 499.  
 Ballou, G. C., obit., i, 612.  
 Ballou, Maturin M., obit., xx, 562.  
 Balmaceda, J. M., obit., xvi, 663.  
 Balmain, invention by, v, 93.  
 Balsam copaiba, illustration, i, 77.  
 Baltes, Peter Joseph, obit., xi, 66.  
 Baltic provinces, i, 71; Russification in, x, 719; xiii, 727; xiv, 753.  
 Baltimore, xi, 160; illustration, i, 505; anniversary, v, 494; water, xix, 774.  
 Bamangwato, description, iv, 403.  
 Bamboo, xi, 74.  
 Bamian, statues at, xi, 35.  
 Bananas, culture of, viii, 538; in Louisiana, xviii, 468.  
 Banerott, George, sketch and portrait, xv, 57.  
 Banded Bandicot, the, illustration, i, 54.  
 Bandeiro, Dr. R., x, 298.  
 Bandel, J. E. von, sketch, i, 61.  
 Bandelier's investigations, ix, 16.  
 Bandon, Earl of, obit., ii, 593.  
 Bangor, Me., xvii, 104.  
 Bangs, G. F., obit., ii, 575.  
 Bangs, Francis N., x, 645.  
 Banian tree, the, illustration, i, 401.  
 Bank associations, national, xi, 264.  
 Bankhead, Henry Cary, obit., xix, 562.  
 Bank in Toronto, illustration, xii, 131.  
 Bankruptcy bill, English, viii, 410.  
 Banks, decision on national, i, 506; laws for, in Massachusetts, i, 508; vi, 536; of Tennessee, decision on, ii, 711; failure of the City, of Glasgow, iv, 175; savings, in Rhode Island, iv, 769; fees of receivers in Connecticut, v, 195; sale and taxation of shares of national, vi, 52; United States, vi, 126; vii, 392; taxation of, in Delaware, vi, 205; in Argentine Republic, vii, 25, 26; of States, vii, 392; of Canada, viii, 84; in Colombia, viii, 139; statistics of 1883, viii, 332; circulation in United States, ix, 216; condition of national, ix, 780; taxation, x, 621; co-operative, xi, 528; national, xii, 785; xv, 840; xvi, 851; xvii, 758; new laws in Australia, xviii, 55; State banks in Illinois, 398; scandals in Italy, 413. And see Financial Review.  
 Banks, Gen. Nathaniel P., x, 426; obit. and portrait, xix, 563.  
 Banvard, John, obit., xvi, 604.  
 Banville, T. F., obit., xvi, 664.  
 Baptist Church, Free, xix, 293.  
 Baptists, statistics, associations, sects of, etc., in every volume.  
 Bara, Soudan, battle at, x, 318.  
 Baragnon, L. N., obit., xvii, 585.  
 Baraguay d'Hilliers, sketch, iii, 53.  
 Baralong territory, ix, 115.  
 Barbadoes, riots in, i, 366; xii, 800; xiii, 839; xiv, 403; xvi, 864; xvii, 792; xx, 761.  
 Barbedienne, F., obit., xvii, 585.  
 Barbed-wire fence, vi, 266.  
 Barbey d'Aureville, J. A., sketch, xiv, 655.  
 Barbour, J. M., obit., vi, 678.  
 Barbour, John S., obit., xvii, 532.  
 Barbour, Oliver L., sketch, xiv, 617.  
 Barca, F., obit., viii, 597.  
 Barcelona, riots in, vii, 752; exhibition, xiii, 748.  
 Bard, S., obit., iii, 632.  
 Bardoux, Agénor, sketch, ii, 320.  
 Bardsley, Sir J. L., obit., i, 628.  
 Bardsley case, the, xvi, 716.  
 Bareiro, Don Candido, iii, 677.  
 Barff, Prof., discovery by, vii, 315; invention by, vii, 533.  
 Bargash, Ben Said, xiii, 660.  
 Barger, Father, obit., ii, 575.  
 Barge, Charles, xi, 347.  
 Barham, R. H. D., obit., xi, 709.  
 Barili, Antonio, sketch, i, 68.  
 Barillas, Gen., x, 466.  
 Barilochi Pass, Andes, viii, 385.  
 Baring, Sir Evelyn, ix, 285, 286, 289, 299; x, 495.  
 Baring, T. C., obit., xvi, 664.  
 Baringo, Lake, ix, 347.  
 Barker, Fordyce, obit., xvi, 604.  
 Barker, G. W., obit., iii, 632.  
 Barker, Prof., observations by, iii, 34.  
 Barksdale II., obit., vi, 678.  
 Barlow, S. B., obit., i, 612.  
 Barlow, S. L. M., sketch, xiv, 618.  
 Barnard, Daniel, obit., xvii, 532.  
 Barnard, D. P., sketch, xiii, 622.  
 Barnard, E. E., discoveries by, vi, 39; vii, 38; ix, 52; x, 51; xi, 57; xii, 45.  
 Barnard, Frederick A. P., sketch and portrait, xiv, 73.  
 Barnard, J. G., sketch, vii, 65.  
 Barnes, A. S., sketch, xiii, 622.  
 Barnes, Demas, sketch, xiii, 622.  
 Barnes, J. K., obit., viii, 586.  
 Barnett, J., obit., xv, 674.  
 Barnewall, R. A., obit., xii, 570.  
 Barney, Hiram, obit., xx, 563.  
 Barni, J. R., obit., iii, 649.  
 Barnum, Henry A., obit., xvii, 533.  
 Barnum, Phineas T., obit., xvi, 605.  
 Barnum, W. H., sketch, xiv, 618.  
 Barometers, water-, v, 51.  
 Baron, V. A., obit., xvii, 585.  
 Baross de Bellus, Gabriel von, obit., xvii, 585.  
 Barre, Vt., xvii, 106; chartered, xx, 753.  
 Barrett, Com., obit., v, 588.  
 Barrett, J. W., experiments by, x, 690; xii, 674.  
 Barrett, Lawrence, obit. and portrait, xvi, 605.  
 Barrett, Rev. M., obit., i, 612.  
 Barrett, W. F., experiments by, xii, 480.  
 Barrière, P. de la, ix, 57, 342.  
 Barrière, Théodore, obit., ii, 593.  
 Barrios, J. R., iii, 415; attempt on the life of, ix, 385; union decree of, x, 464, 465; his death, 466.  
 Barron, Samuel, sketch, xiii, 622.  
 Barrot, F., obit., viii, 597.  
 Barrow, Frances E., obit., xix, 563.  
 Barrow, Sir G., obit., i, 628.  
 Barrow, Percy H. S., obit., xi, 709.  
 Barrundia, Martin, i, 89; arrested, xv, 414.  
 Barry, E. M., obit., v, 598.  
 Barry, G. R., obit., i, 612.  
 Barry, P., obit., xv, 632.  
 Barry, W. F., sketch, iv, 73.  
 Barrymore, G. D., obit., xviii, 539.  
 Barth, Baron, death of, ii, 330.  
 Barth, J. B. P., obit., ii, 593.  
 Bartholdi's statue, x, 367, 642; xi, 323, 649.  
 Bartlett, F. W., invention by, i, 91.  
 Bartlett, Joseph J., obit., xviii, 539.  
 Bartlett, J. H., discovery, v, 288.  
 Bartlett, John R., obit., xi, 664.  
 Bartlett, Sidney, sketch, xiv, 618.  
 Bartlett, Washington, obit., xii, 570.  
 Bartlett, W. F., obit., i, 612.  
 Bartlett, W. H. C., obit. and portrait, xviii, 539.  
 Bartley, Mrs. Judge, obit., i, 612.  
 Bartol, James Le, obit., xii, 571.  
 Barton, Clara, vii, 718.  
 Barton, William B., obit., xvi, 606.  
 Bartow, Morey H., obit., xii, 571.  
 Bartsch, Karl F., sketch, xiii, 660.  
 Barttelot, Major, xiii, 295 *et seq.*  
 Barus, Carl, experiments of, xii, 479.  
 Bary, E. von, death of, ii, 329.  
 Base, a new, iv, 134; xi, 140.  
 Base-ball, x, 77 *et seq.*  
 Bashford, C., obit., iii, 632.  
 Basque provinces, i, 730.  
 Basques, illustration, i, 730.  
 Bass, Lyman K., sketch, xiv, 618.  
 Bassamas, tribe of the, v, 291.  
 Basset-bound, the, ix, 258.  
 Bassett, Isaac, obit., xx, 563.  
 Bassophone, the, x, 617.  
 Bastian, Adolf, ix, 277.  
 Bastian, H. Charleton, on the germ theory, iii, 390; on the muscular sense, xii, 672.  
 Bastide, J., obit., iv, 698.  
 Bastile celebration, v, 285; illustration, the Bastille, i, 313.  
 Basutoland, xvii, 75.  
 Basutos, the, v, 80; law to disarm, v, 81; vi, 85; revolt of, v, 81; vi, 86; vii, 84; history and separation from Cape Colony, viii, 89;

- ix, 111; x 83; effect of their conflict with the Cape government, 84; spread of drunkenness among, 84.
- Batanga river, x, 393.
- Battie, A. P., obit., xii, 622.
- Bates, Eli, xii, 280.
- Bates, Clara D., obit., xx, 563.
- Bates College, illustration, i, 500.
- Bath, England, illustration, i, 359.
- Bath, N. Y., xv, 120.
- Baths among various nations, v, 354; bath-rooms, v, 362; bath-lift, xvi, 706.
- Bathurst, Earl, obit., iii, 649.
- Batoche, engagement at, x, 127.
- Baton Rouge, La., xviii, 152.
- Batoum, xi, 792.
- Battaglini, E., obit., xvii, 585.
- Battell, Robbins, obit., xx, 563.
- Battenberg, Prince, vii, 73.
- Battershall, J. P., obit., xvi, 607.
- Bathey, Robert, obit., xx, 563.
- Battin, Joseph, obit., xviii, 539.
- Battle Creek, Mich., xv, 120.
- Battle, W. H., sketch, iv, 74.
- Battleford, x, 127, 128.
- Battye, Col. R., killed, xiii, 436.
- Baudet, Paul, obit., ii, 593.
- Baudissin, W. H. F. K., obit., iii, 649.
- Baudot, invention by, vi, 256.
- Baudonin, Prince, obit., xvi, 664.
- Baudry, Paul, obit., xi, 709; exhibition of his works, xi, 344.
- Bauer, Caroline, obit., ii, 593.
- Bauer, Clara, sketch, i, 68.
- Bauernfeld, E., obit., xv, 674.
- Baumann's route, xviii, 336.
- Baumstark, A., obit., i, 623.
- Bausch, E., ix, 506, 515, 518.
- Bavaria, view of Baireuth, i, 573; King Ludwig of, xi, 392; Otto, 392; regent, 392.
- Baviera, J., Cervera, xi, 374.
- Baxendell, discoveries, v, 35, 36.
- Baxter, J. H., obit., xv, 632.
- Baxter, John, obit., xi, 665.
- Baxter, Mary E. K., obit., xx, 563.
- Baxter, S., obit., iii, 632.
- Baxter, W. E., obit., xv, 674.
- Bayard, Émile, x, 358, 363; obit., xvi, 664.
- Bayard, James A., sketch, v, 52.
- Bayard, Thomas F., sketch and portrait, x, 756.
- Bayard mutiny, the, x, 173.
- Bay City, Mich., xvi, 148.
- Bayer, H. J. P. von, sketch, i, 69.
- Bayer, Prof., discovery by, vi, 428.
- Bayfield, Wis., xviii, 153.
- Bayley, J. K., sketch, ii, 66.
- Bayne, Herbert A., obit., xi, 709.
- Baynes, Thomas S., obit., xii, 623.
- Bayonne, illustration, i, 317.
- Bazaine, François Achille, sketch and portrait, xiii, 80.
- Bazalgette, Sir J., obit., xvi, 664.
- Beach, E. J., obit., ii, 575.
- Beach, John S., obit., xii, 571.
- Beach, Moses S., obit., xvii, 533.
- Beach, Sir Michael Hicks, Bart., x, 447; sketch, 449; x, 440; xi, 399.
- Beach, William A., obit., ix, 602.
- Beach, William M., bit., xii, 571.
- Beaconsfield. See Disraeli.
- Beale, Edward F., obit., xviii, 540.
- Beale, Joseph, sketch, xiv, 618.
- Beamer and Clarke, experiments by, iv, 132.
- Bear, voyage of the, ix, 29.
- Beard, Charles, sketch, xiii, 660.
- Beard, George M., obit., viii, 586; ix, 554.
- Beard, Henry, sketch, xiv, 618.
- Beard, James H., obit., xviii, 540.
- Beardsley, Eben E., obit., xvi, 607.
- Beardsley, S. B., obit., xv, 632.
- Bears, x, 387; xvi, 541.
- Beasley, Joseph, invention, x, 575.
- Beaton, Ruth, obit., ii, 575.
- Beatrice Gulf, iii, 362.
- Beatrice, Neb., xvi, 149.
- Beatty, Henry O., obit., xvii, 533.
- Beatty, Ormond, obit., xv, 633.
- Beaubien, J. C., obit., ii, 593.
- Beaume, J., obit., x, 657.
- Beaumont's air-engine, vi, 513; perforator, vii, 281; viii, 31.
- Beaunis, experiments by, viii, 635.
- Beauregard, A. T., obit., vi, 679.
- Beauregard, P. G. T., x, 424; obit. and portrait, xviii, 540.
- Beaver, James A., sketch, vii, 677.
- Bebel, ix, 360; xi, 389.
- Bed, musical, x, 613.
- Beccari, O., explorations of, i, 330; iv, 408.
- Bechamp, investigations, viii, 636.
- Becher, Albrecht, obit., xvii, 533.
- Bechterew, experiments, viii, 634.
- Beechuanaland, ix, 111, 112, 113; xi, 124; war in, viii, 92; x, 85; the Rhodes settlement, x, 86; Warren expedition, x, 87; trial of Niekirk, x, 87; conflict of authority, x, 88; xiv, 106; xv, 95; xvi, 103; xvii, 76; annexation of British, xx, 110. See also Cape Colony.
- Beck, J. B., obit., xv, 633.
- Beck, J. T. von, obit., iii, 650.
- Beck, William E., obit., xvii, 533.
- Becker, G. F., x, 404; xi, 588.
- Becker, H., obit., x, 657.
- Becker, K. F., obit., ii, 593.
- Beckmann, J. H., obit., iii, 650.
- Beckwith, Amos, obit., xix, 564.
- Beckwith, C., obit., xv, 633.
- Beckwith, J. W., obit., xv, 633.
- Beckwith, T., obit., iii, 632.
- Beekyx, Father P. J., obit., xi, 790; xii, 623.
- Béclard, Jules, obit., xii, 623.
- Bequerel, A. C., sketch, iii, 53, 650.
- Bequerel, A. E., observations by, xii, 110.
- Bedell, G. T., obit., xvii, 533.
- Bedford, G. S., obit., xviii, 540.
- Bedford, H. M., obit., v, 588.
- Bedle, Joseph D., obit., xix, 564.
- Beds, folding, xiii, 81.
- Bee, vision of the honey, xii, 672.
- Beebe, Brig.-Gen. C. F., port., xx, 510.
- Beech, Major, xiii, 2.
- Beecher, Cath. E., sketch, iii, 53.
- Beecher, Edward, obit., xx, 563.
- Beecher, Henry Ward, sketch and portrait, xii, 60.
- Beecher, W. H., sketch, xiv, 618.
- Beegerite, vi, 98.
- Beckman, J. W., obit., ii, 575.
- Beer, M., observations of, xi, 585.
- Beer, tax on, vii, 65.
- Beers, Dr. George W., x, 519.
- Beers, Henry N., obit., xii, 571.
- Beers, William H., obit., xviii, 540.
- Beethoven, xi, 479.
- Beet-sugar, i, 94; new product, iv, 75; in Delaware, iv, 311; in
- Maine, iv, 578; in Maryland, iv, 590; xviii, 597.
- Beggars, xiii, 134.
- Behic, A., obit., xvi, 664.
- Behm, E., obit., ix, 614.
- Behnke, Emil, obit., xvii, 585.
- Behring Sea, British schooners seized in, xii, 285.
- Behring Strait, current, vi, 325.
- Belcastel, J. B., obit., xv, 674.
- Belcher, Nathan, obit., xvi, 607.
- Belcher, Sir E., obit., ii, 593.
- Belden, David, sketch, xiii, 622.
- Belfast, riots in, xi, 403.
- Belgian free churches, iii, 57.
- Belgium, statistics, elections, etc., in every volume; struggle between Catholics and Liberals, i, 7; ii, 68; on the question of secular education, iv, 77; v, 53, 56; ix, 78; xi, 84; electoral law, i, 71; changes of cabinet, iii, 56; ix, 79; church funds, vi, 58; viii, 57; controversy between moderate clericals and Ultramontanes, vi, 59; international congresses in, i, 72; ii, 69; v, 55; x, 91; expositions, v, 55; x, 91; labor-riots, xi, 81; xii, 66; cattle duties, xii, 66; free churches of, iii, 57; connection with the Congo State, x, 91; revision of constitution, xvii, 58.
- Belgrade, illustration, i, 756.
- Belize, Honduras, view of, xvi, 347.
- Belknap, W. W., impeachment of, i, 42, 203, 686; obit., xv, 633.
- Bell, A. Graham, inventions and experiments by, i, 740; vi, 239, 257, 787; ix, 45, 307, 308; litigation concerning telephone patent, xii, 649.
- Bell, Charles, ix, 476.
- Bell, Charles H., obit., xviii, 541.
- Bell, C. N., xi, 23.
- Bell Cox case, the, xv, 12.
- Bell, G. L., invention by, i, 522.
- Bell, John, obit., xx, 603.
- Bell, King, x, 121.
- Bell, Sir G., obit., ii, 594.
- Bell, T., obit., v, 598.
- Belleau, Sir N. F., obit., xix, 609.
- Bellegarde, Augustus von, obit., xi, 709; funeral of, xi, 311.
- Bellen, F. H. T., sketch, xiii, 623.
- Belleville, Ill., xix, 135.
- Belli, invention by, iii, 545.
- Bellova Railroad, seized, xiii, 116.
- Belly, L. A. A., obit., ii, 594.
- Belmont, A., obit., xv, 633.
- Belmont, battle at, x, 423.
- Beloochistan, rebellion in, i, 73; ii, 69; map, i, 7; British occupation of Quetta, ii, 70.
- Bclot, A., obit., xv, 674.
- Belshaw, J., invention, viii, 466.
- Beluchistan, xv, 435.
- Benao, Princess, ix, 460.
- Benares, bridge at, xiii, 299.
- Benavides y Navarrete, F. de P., obit., xx, 604.
- Benedek, L. von, obit., vi, 690.
- Benedict, E. C., sketch, v, 56.
- Benedict, Mrs. J. T., obit., ii, 575.
- Benedict, Sir J., sketch, x, 92.
- Benedict, St., anniversary, v, 658.
- Benedictine monks, xiii, 288.
- Bengal, x, 495.
- Bengal Tenancy Act, x, 445, 528.
- Benham, H. W., obit., ix, 602.
- Beni river, exploration of, vi, 332.



- Beni Zemour, rebellion, xiii, 574.  
 Benie, Rear-Admiral, obit., i, 629.  
 Benjamin, Judah P., obit., ix, 602.  
 Benjamin, Samuel N., obit., xi, 665.  
 Benker and Lasne, experiments by, viii, 115.  
 Bennet, Orlando, obit., v, 588.  
 Bennett, C. W., obit., xvi, 607.  
 Bennett, Dr. Hughes, x, 742.  
 Bennett, J. G., expedition, vi, 322.  
 Bennett, Nathaniel, obit., xi, 665.  
 Bennett school law, the, xiv, 827; xv, 855, 856.  
 Bennett, Sir J. R., obit., xvi, 664.  
 Bennett, William C., obit., xx, 604.  
 Bennigsen, retirement of, viii, 395.  
 Bennington centennial, ii, 757; celebration, xvi, 858; day, xx, 753.  
 Bennington, Vt., xvii, 106.  
 Benomar, Count, x, 143.  
 Benson, E. W., sketch, portrait, viii, 57.  
 Benson, S. P., obit., i, 612.  
 Bent, Theodore, xi, 34; xii, 22.  
 Bentinek, H. J. W., obit., iii, 650.  
 Bentley, H. H., obit., xx, 564.  
 Benton Harbor, Mich., xvi, 149.  
 Benton, Jacob, obit., xvii, 534.  
 Benton, J. D., obit., xv, 633.  
 Benton, J. G., obit., vi, 679.  
 Benue river, exploration of, v, 290; ix, 348; x, 393.  
 Benzoic acid, v, 89.  
 Benzoyl, discovery of, ix, 809.  
 Bequests and gifts, xviii, 350; xix, 322.  
 Berardi, Cardinal, sketch, iii, 57.  
 Beraud, Jean, x, 358.  
 Berber, fall of, ix, 297; taken by Gordon, 301.  
 Berber tribes, revolt of, xiii, 576.  
 Berbera, province of, attempt to take, ix, 296.  
 Berehere, N., obit., xvi, 664.  
 Berdan, Hiram, obit., xviii, 541.  
 Berdellé, J. B., obit., i, 629.  
 Berden, H., invention, ii, 626.  
 Beresford, M., obit., i, 629.  
 Beresford, Lord, in Egypt, and portrait, vii, 248; x, 314, 315.  
 Beresford-Hope, obit., xii, 623.  
 Beressowski, xi, 377.  
 Berg, C., obit., xvi, 665.  
 Berg, M., x, 291, 292, 293; trial of, xi, 285; xii, 222.  
 Bergaigne, Abel, sketch, xiii, 660.  
 Bergh, Henry, sketch, xiii, 623.  
 Berghash, Seyyed, obit., xi, 709.  
 Berglund, experiments, viii, 113.  
 Bergmann, Carl, obit., i, 613, 629.  
 Bering Sea Tribunal of Arbitration, with map, xviii, 79; sealing in, 683; xx, 733; conclusion, xix, 749.  
 Bering's island, xi, 375.  
 Berlier, invention by, vii, 741.  
 Berlin, Treaty of, iii, 292; Gladstone on, iii, 402; dissatisfaction in Greece, iii, 409; in Hungary, iii, 425; in Italy, iii, 458; in territory ceded to Montenegro, iii, 536; in Roumania, iii, 739; territory gained by Russia, iii, 741; dissatisfaction in Russia, iii, 744; in the Turkish provinces, iii, 795, 796; in Bulgaria, ix, 733; discussion in Austria, iv, 62; indistinctness as to Montenegro, iv, 648; measures to enforce, v, 543, 687, 688; as to Greek boundaries, vi, 374; relations of Germany and Russia after, vii, 353; difficulty in carrying out, viii, 550; refusal of England to recognize, x, 753; conference, ix, 170; x, 190.  
 Bermuda, xiii, 839; xv, 407; xvi, 346; xvii, 327; and see West Indies.  
 Bermudez, E. E., obit., xvii, 534.  
 Bermudez, R. M., obit., xix, 609.  
 Bernaert ministry, the, ix, 80.  
 Bernard affair, the, viii, 57, 694.  
 Bernard, Claude, sketch, iii, 57.  
 Bernhardt, Theodor, obit., xii, 624.  
 Bernhardt, Sarah, sketch, v, 57.  
 Bernstein, A., lamp of, viii, 303; ix, 305.  
 Beroud, Louis, x, 367.  
 Berri-berri, disease in Acheen, xi, 608.  
 Berrien, John M., obit., viii, 586.  
 Berry, James R., obit., xvi, 607.  
 Berry, J. H., sketch, vii, 30.  
 Berry, John M., iii, 567.  
 Berry, Nathaniel S., obit., xix, 564.  
 Berry, R. M., expedition, vi, 323.  
 Bert, Paul, appointment, vii, 324; attack on the church, 324, 325; ix, 662; x, 380; obit., xi, 709.  
 Berthaut, Gen., obit., vi, 691.  
 Berthelot, P. E., experiments by, i, 92; iii, 93, 725; x, 151, 154, 343; xii, 101.  
 Berths, swinging, xvi, 709.  
 Bertin, L. A., obit., ii, 594.  
 Bertini, H., obit., i, 629.  
 Bertrand, E., ix, 506, 515.  
 Bertrand, Felix, sketch, i, 74.  
 Beryl, analysis of, x, 156.  
 Beryllium, atomic weight, vii, 89.  
 Berzelius, ix, 808.  
 Besnard, Paul A., x, 363; xii, 275.  
 Bessarabia, retrocession of, to Russia, iii, 739, 741, 742; viii, 697.  
 Bessels, Emil, sketch, xiii, 623.  
 Bessemer steel process, ii, 403; iii, 128; vii, 530; in United States, vii, 531; applied to copper, viii, 522.  
 Beta, Heinrich, obit., i, 629.  
 Beta Lyra, spectrum of, x, 53.  
 Bethells, Christopher, ix, 113.  
 Bethmann-Hollweg, obit., ii, 594.  
 Bethesda, Pool of, xiii, 31.  
 Betting, xiii, 87.  
 Betts, Charles W., obit., xii, 571.  
 Betts, W., obit., ix, 603.  
 Beust, Friedrich F., obit., xi, 84.  
 Bevan, Theodore F., explorations by, xii, 311.  
 Bevier troubles, xiii, 566.  
 Bézique, xiii, 89.  
 Bezold, W. von, xi, 539.  
 Bhamo, district of, x, 115.  
 Bhotan, insurrection, x, 491, 499.  
 Bianchi, death of, x, 394.  
 Bible Christians, ii, 510; xi, 502; xiii, 546; xiv, 566; xv, 546; xix, 480.  
 Bible societies, xii, 67; xiii, 92; xiv, 78.  
 Bible, the, Japanese translation, iii, 463; into Oriental languages, iii, 586; heretical views on inspiration of, iii, 698; Brahman opinion of, iv, 91; ease of Robertson Smith, vi, 760, 769; of W. L. MacFarlane, vi, 769; Colenso on the Pentateuch, viii, 135; places of, identified, ix, 27; revision of the English version, x, 92; previous translations, x, 92, 93; list of translators, x, 94.  
 Bibliophile Jacob, ix, 617.  
 Bibra, Baron E. von, obit., iii, 650.  
 Bichloride of mercury and urea, x, 298.  
 Bichi, Prof., x, 158.  
 Bieker, Walter, obit., xi, 665.  
 Biekersteth, R., obit., ix, 614.  
 Bicknell, G. A., obit., xvi, 607.  
 Bieycles, ix, 80; xx, 86; illustrations, x, 80-84; improved saddle, xx, 88.  
 Biddle, W. M., sketch, xiv, 618.  
 Biddlecomb, Sir G., obit., iii, 650.  
 Bidwell, Shelford, x, 539.  
 Bidwell, W. H., obit., vi, 679.  
 Big Bear, Chief, x, 129.  
 Bigelow, Allen G., obit., xvi, 607.  
 Bigelow, E. B., invention, viii, 94.  
 Bigelow, G. T., sketch, iii, 58.  
 Bigelow, Hobart B., obit., xvi, 607.  
 Bigelow, Jacob, sketch, iv, 78.  
 Bigelow, Henry J., obit., xv, 634.  
 Bigger, J. G., obit., xv, 674.  
 Biggs, Judge A., sketch, iii, 58.  
 Bigler, William, obit., v, 589.  
 Bignell, F. H., ix, 349.  
 Bigourdan, M., xii, 45.  
 Billings, E. C., obit., xviii, 541.  
 Billings, F., obit., xv, 634.  
 Billings, Josh, x, 654.  
 Billot, M., x, 27.  
 Billroth, Theodor, obit., xix, 609.  
 Bimbia, ix, 365.  
 Bimetallic system, see Currency, ii, 235; vi, 60, 287; Latin Union, viii, 419; x, 275; conference, xix, 338.  
 Bimetallicism in Germany, xix, 317.  
 Binary systems, xix, 53.  
 Bindi, Archbishop, obit., i, 629.  
 Bindseil, H. E., obit., i, 629.  
 Bingham, G. A., obit., xx, 564.  
 Bingham, G. B., obit., xviii, 541.  
 Bingham, Samuel, obit., i, 613.  
 Binghamton, xi, 162; asylum, v, 572.  
 Binnie, William, obit., xi, 710.  
 Binocular telescopes, xvi, 713.  
 Binz and Schulz, theory of arsenical poisoning, v, 91.  
 Biological laboratories, x, 46; work of Dr. Carpenter, x, 144, 145.  
 Biondelli, Bernardino, obit., xi, 710.  
 Birch, De Burgh, xii, 678.  
 Birch, C. B., xi, 345; obit., xviii, 576.  
 Birch, Francis Wm., obit., xix, 564.  
 Bird organs, x, 618.  
 Bird, W. A., obit., iii, 632.  
 Bird's Nest, edible, xii, 676.  
 Birds, songs of, xi, 85; vocal apparatus of, illustrations, xi, 90.  
 Birdwood, Sir George, xiii, 7.  
 Birge, Henry W., sketch, xiii, 623.  
 Birmingham, England, illustration, i, 362; xiii, 159.  
 Birmingham, Mr., observations, iii, 38.  
 Biseacho, the, ix, 790.  
 Bishop, Anna, obit., ix, 603.  
 Bishop of Lincoln, trial of, xiv, 11; case of, xvi, 10.  
 Bishop, R. M., obit., xviii, 541.  
 Bishop, Victor, obit., i, 613.

- Bishop, W. I., sketch, xiv, 619.  
 Bishopric of Grahamstown, vii, 21.  
 Bishoprics, in England, iii, 403.  
 Bishops, colonial jurisdiction of, ii, 24; consecration of, ii, 27; liability of church property for debts of, vi, 793; viii, 673; right of nominating, viii, 695.  
 Bishop's Ring, x, 582; xi, 546.  
 Bismarck, North Dakota, xix, 136.  
 Bismarck, Prince, contest with Liberals, i, 344; resignation offered by, ii, 350; v, 320; and Socialists, iii, 380; negotiations with Papal Nuncio, iii, 382; end of alliance with Liberals, iv, 436, 740; and the German Parliament, vi, 338; defeats of, vi, 344; state socialism of, viii, 393; influence, viii, 397; reconciliation with Emperor Wilhelm, xix, 318; reconciliation of Russia and Austria, ix, 64; the state council and, ix, 356; not a letter-carrier, ix, 359; his party, ix, 360; his concessions to the Pope, ix, 390; the Lasker affair, see Lasker, E.; his theory of effective jurisdiction, x, 143; x, 120 *et seq.*; xi, 383, 389, 390; xvii, 316; retirement of, xv, 379; xvi, 327. See also Germany in each volume.  
 Bismarck Archipelago, x, 681.  
 Bissagos Islands, rebellion in, xvi, 752.  
 Bissell, W. H. A., obit., xviii, 541.  
 Bissell, Wilson S., sketch and portrait, xviii, 736.  
 Bit Karziyabku, city of, ix, 18.  
 Bitter, K. H., sketch, iv, 740.  
 Bixby, J. M., obit., i, 613.  
 Bizzard, Cardinal, obit., ii, 594.  
 Bizzozero, experiments, viii, 633.  
 Bjerknes, experiments, vi, 404.  
 Bjorkmann, invention by, x, 345.  
 Björnson, B., in politics, vi, 827; on the King's veto, vii, 772.  
 Blaauw Krantz bridge, x, 329; illustration, x, 330.  
 Black, Henry M., obit., xviii, 541.  
 Black, Jere S., sketch, viii, 58.  
 Black Death, iv, 730; xiii, 311.  
 Black Flags, viii, 767; ix, 137; x, 24, 27, 30; massacre by, x, 31.  
 Black Forest, musical inventions of the, x, 612, 613.  
 Black Friday, x, 435.  
 Black Hills mines, ii, 245; ix, 240; xi, 280.  
 Blackburn, Luke Pryor, iv, 541; obit., xii, 572.  
 Blackburne, E. O., obit., xix, 609.  
 Blackie, John Stuart, obit., xx, 604.  
 Black-mailing, act against, iii, 619.  
 Black mountain expedition, xiii, 436; xvi, 377.  
 Blackwood, J., obit., iv, 698.  
 Bladder, operations on the, ix, 748.  
 Blaine, Emmons, obit., xvii, 534.  
 Blaine, James G., sketches, iv, 78, and ix, 86; steel portrait, vi, 733; official papers, see Peru, Chili, etc., and Panama Canal; oration on Garfield, vii, 127; sketch and portrait, xiv, 801; xviii, 86; birthplace, 86; residence, 93; memorial, 471.  
 Blaine, Walker, obit., xv, 634.  
 Blair, Austin, obit., xix, 564.  
 Blair, Barnard, obit., v, 589.  
 Blair educational bill, the, xiii, 234.  
 Blair, Francis P., sketch, i, 74.  
 Blair Montgomery, obit., viii, 587.  
 Blair, Mrs., obit., ii, 575.  
 Blair, S. S., obit., xv, 634.  
 Blake, A. S., obit., xx, 564.  
 Blake, E., sketch, viii, 59.  
 Blake, Eli Whitney, obit., xi, 665.  
 Blake, James, experiments by, vi, 99; vii, 89; ix, 659; xii, 102.  
 Blake, Samuel H., obit., xii, 572.  
 Blake W. P., ix, 475.  
 Blakeman, Birdseye, obit., xix, 564.  
 Blakesley, J. W., obit., x, 657.  
 Blanc, C., obit., vii, 645.  
 Blanc, Louis, sketch, vii, 67.  
 Blanchard, E. L., sketch, xiv, 655.  
 Blanchard, J. W., obit., ii, 575.  
 Blanchard, Jonathan, obit., xvii, 534.  
 Blanchard, Wyatt, obit., ii, 575.  
 Blanchett, J. G., obit., xv, 675.  
 Blanford, Henry, xii, 490.  
 Blanford, W. T., ix, 46; xi, 543.  
 Blankingship, James A., obit., xviii, 541.  
 Blanqui, A., sketch, vi, 65.  
 Blas and Miest, experiments by, viii, 524.  
 Blaschko, Dr., experiments by, x, 689; xii, 672.  
 Blashfield, E. H., ix, 245.  
 Blasphemy, trial for, viii, 418.  
 Blasting powders, x, 343.  
 Blatchford, Lord, sketch, xiv, 655.  
 Blatchford, S., vii, 807; obit., xviii, 541.  
 Blatta, fossil, illustration, ix, 368.  
 Blavatsky, H. P., obit., xvi, 665.  
 Brazil, xix.  
 Bleaching, agent in, viii, 115; improved process for, x, 159.  
 Bledsoe, Dr. A. T., obit., ii, 575.  
 Bleibtreu, Georg, obit., xvii, 585.  
 Bleichroeder, G., obit., xviii, 576.  
 Blenheim Palace sale of pictures, xi, 345.  
 Blenler and Lehmann, experiments by, vi, 400.  
 Blind, education of. See Howe, i, 384.  
 Blinn, Christian, sketch, xiv, 619.  
 Bliss, D. Willard, sketch, xiv, 619.  
 Bliss, Edwin E., obit., xvii, 534.  
 Bliss, Isaac G., sketch, xiv, 619.  
 Bliss, P. C., obit., x, 646.  
 Bliss, Philemon, sketch, xiv, 619.  
 Blitz, Signor, obit., ii, 575.  
 Blizzard, illustrated, xiii, 602.  
 Bloch, M., ix, 657.  
 Block Island, R. I., xx, 686.  
 Block, Lieut., survey of Greenland, xii, 316.  
 Blodgett, F., obit., ii, 576.  
 Bloemhof, district of, ix, 111.  
 Blood, pressure of the, vi, 748; mechanism of arrest of hæmorrhage, viii, 60; discoveries concerning, viii, 632; ix, 655; circulation of, xi, 757; temperature of, xii, 673; specific gravity of, xii, 673; color of, xii, 673.  
 Bloodhound, the, ix, 259.  
 Bloomer, Amelia Jenks, obit., xix, 565.  
 Bloomington, Ill., xv, 120.  
 Bloss, George, M. D., obit., i, 613.  
 Blount, Commissioner, xviii, 382.  
 Bloxam, Charles L., xii, 109.  
 Bluefields difficulty, xix, 546.  
 Blue Licks, anniversary, vii, 453.  
 Blue Mountain peak, xii, 314.  
 Blue Nile, the revolt on, viii, 299.  
 Blüthner, J., improvements of the piano by, i, 517.  
 Blum, Robert, ix, 245.  
 Blumenburg, Maj. L., obit., i, 613.  
 Blunt, Asa P., sketch, xiv, 619.  
 Blunt, Charles E., obit., xvii, 534.  
 Blunt, G. W., obit., iii, 632.  
 Blunt, J. H., obit., ix., 614.  
 Blunt, Wilfred, xii, 342.  
 Blunt's study of Islam, vi, 440.  
 Bluntschli, J. G., sketch, vi, 65.  
 Boardman, G. S., obit., ii, 576.  
 Boardman, H. A., obit., v, 589.  
 Boas, F., x, 398.  
 Boats, house, xiii, 416 *et seq.*; collapsable, 93; submarine, 798; folding, xvi, 703.  
 Bobbett, Albert, sketch, xiii, 623.  
 Bob White, the, x, 389.  
 Boca Tigris, illustration, i, 110.  
 Bochefontaine, experiments by, viii, 634.  
 Bochoitz, Countess, death, v, 659.  
 Booklish, Dr., xii, 679.  
 Bocoek, Thomas S., obit., xvi, 608.  
 Bodenstedt, F. M., von, obit., xvii, 585.  
 Bodichon, B. L. S., obit., xvi, 665.  
 Bodischo, W., obit., iii, 632.  
 Bodley, R. L., sketch, xiii, 624.  
 Bodwell, Joseph R., obit., xii, 572.  
 Boehm, Sir E., obit., xv, 675.  
 Boeresco, B., obit., viii, 597.  
 Boers, war with the, vi, 87, 88; viii, 89, 92; ix, 112, 113; x, 86; disputed grant to, x, 136.  
 Boer trek, the, xvi, 107.  
 Bogart, W. H., sketch, xiii, 624.  
 Boggs, C. S., sketch, xiii, 624.  
 Boggs, Frank M., prize to, x, 367.  
 Bogoslov Peak, view of, xviii, 83.  
 Bogotá, xi, 192; illustration, i, 115.  
 Bogran, Luis, obit., xx, 604.  
 Bogy, L. V., sketch, ii, 71.  
 Boli-cho, chief, xii, 81.  
 Bohemia, conflict of nationalities in, v, 45; language war in, ix, 67; peasants of, illustration, i, 58; xiv, 61; disorders, xviii, 64.  
 Bohemian Ausgleich, xv, 53.  
 Böhm, Dr., x, 393, 394.  
 Böhrner, experiments by, viii, 112.  
 Bohn, Henry G., obit., ix, 614.  
 Bohnstedt, L., obit., x, 657.  
 Boisbaudran, L. de, metal discovered by, i, 524; experiments by, iii, 89; vi, 41; ix, 119; x, 578; xii, 101, 109, 110.  
 Boisé City, Idaho, xvi, 149.  
 Boise, J. R., obit., xv, 564.  
 Boisgobey, F., obit., xvi, 665.  
 Bojanowski, V., obit., xvii, 586.  
 Boker, G. H., obit. and portrait, xv, 634.  
 Bokhara, x, 98; Russia in, x, 98; disturbances in, xi, 6.  
 Bolan Pass, the, secured to Great Britain, i, 74; occupation of Quetta, ii, 70; illustration, ii, 70.  
 Bolekow, H. W. F., obit., iii, 650.  
 Boldine, x, 298.  
 Bolingsoff, C., obit., xii, 572.  
 Bolivar, Simon, statue of, x, 361.  
 Bolivia, in every volume but i; silver in, x, 99, cinchona, 99; cotton-tree, 100; new city and



- highway, 100; map, ii, 73; rebellion, ii, 72; war with Chili, iv, 82; vi, 738; Indian troubles in, xii, 69; new route to the sea, 69; gold and nitrate of soda in, 69; boundary disputes, ii, 74; iv, 29, 82; treaties, xii, 68; exploration in, xiv, 355; treaty with Chili, xviii, 96; xix, 78; quarrel with Peru, xx, 93.
- Boll, Jacob, obit., v, 589.
- Bolles, Frank, xix, 565.
- Bolles, J. A., obit., iii, 632.
- Bolles, T. Dix, obit., xviii, 534.
- Bolobo, king of, ix, 167; house in, illustration, 169.
- Bolton, H. C., investigations by, v, 93; ix, 45.
- Bolton, Sarah T., obit., xviii, 542.
- Bombay, improvements in, ix, 346; convention in, xi, 438; illustration, i, 403; views in, xiv, 426, 427.
- Bombay and Burmah Trading Company, x, 115.
- Bomberger, J. H. A., obit., xv, 635.
- Bomb outrages in Spain, xviii, 697.
- Bomford, James V., obit., xvii, 534.
- Bona, Algiers, illustration, ii, 15.
- Bona, Marquis, obit., i, 629.
- Bonaparte, Anthony, obit., ii, 594.
- Bonaparte, Constance, obit., i, 629.
- Bonaparte, E. P., sketch, iv, 86.
- Bonaparte, Eugène Louis, the Prince Imperial, sketch, iv, 88; excitement concerning, iv, 127; proposal for statue in Westminster Abbey, iv, 89; v, 342.
- Bonaparte family, the, iv, 85.
- Bonaparte, J., manifesto, viii, 365.
- Bonaparte, J. N., obit., xviii, 542.
- Bonaparte, Pierre, obit., vi, 691.
- Bonaparte, Prince Lucien, xvi, 665.
- Bonapartists, leader of, iv, 394.
- Bonaparte, Lucien N., obit., xx, 604.
- Bond question, discussed in Congress, xx, 176.
- Bond, Hugh L., obit., xviii, 542.
- Bond, Richard C., obit., v, 589.
- Bonds, United States and State, see Indebtedness and Finances of United States, vii, 392; State legislation on, see Obligation of Contracts, vii, 648; and stocks, variations of, iii, 120; municipal, ii, 526, 636; iv, 545, 643, 720; registry, xx, 197; railroad subsidy, v, 540; the levee, in Arkansas, iii, 23; repudiated, iv, 659; of Colombia, iii, 104; of Peru, iii, 687; of Chili, iv, 140, 141; of Argentine Republic, v, 21; of Brazil, v, 63; of Mexico, v, 571; issue of United States, xviii, 212. See also under titles of States and countries for bonded indebtedness.
- Bone-shaker, the, ix, 83.
- Bonetty, A., obit., iv, 774.
- Bonghi, Rugg'ere, obit., xx, 604.
- Bonham, M. L., obit., xv, 635.
- Bonheur, Rosa, xi, 345, 347.
- Bonn Conference, i, 22, 23.
- Bonnat, Leon, x, 362.
- Bonnechese, Cardinal de, obit., viii, 697.
- Bonnefoy-Sibour, A., obit., i, 629.
- Bonner, Sherwood, see McDoweli, ix, 603.
- Bonney, T. J., xi, 48.
- Bonomi, Joseph, obit., iii, 650.
- Bontroux, experiments by, vii, 92.
- Book-holder, xvi, 708.
- Book of the Dead, xiii, 31.
- Book protector, xvi, 708.
- Books. See Literature.
- Bookwalter collection, xi, 347.
- Booneville, B. L. E., obit., iii, 632.
- Booth, Edwin Thomas, sketch and portrait, xviii, 96.
- Booth, H. G., excursion of, iv, 417.
- Booth, James, obit., iii, 651.
- Booth, J. C., experiments by, viii, 522; ix, 475; sketch, xiii, 624.
- Booth, J. W., obit., i, 613.
- Booth, Mary L., sketch, xiv, 619.
- Booth, Newton, obit., xvii, 534.
- Booth, Sir R. G., obit., i, 629.
- Booth, W. C., obit., i, 613.
- Boracic acid, antiseptic properties of, i, 96; vii, 315; theory of, ix, 809.
- Borate of quinine, x, 299.
- Borax beds, xvi, 862.
- Bordeaux clocks, the, iv, 344.
- Borel, Gen., sketch, ii, 320.
- Borely, discoveries by, ii, 44, 46; iv, 51; vii, 21.
- Borgess, C. H., obit., xv, 635.
- Borghese, Prince, travels, vi, 326.
- Bornis-Desbordes Expedition, vii, 335.
- Borie, Adolph E., obit., v, 590.
- Borijer, Léon, obit., xi, 711.
- Borlinetto, invention of, x, 346.
- Borneo, vi, 329; North Borneo Co., *ibid.*; discussed in Spain, vi, 819; North, vii, 68; xiii, 97; British, xiv, 398.
- Börnstein, Richard, experiments by, xi, 539.
- Boro-glyceride, viii, 95.
- Borro, Luigi, obit., xi, 710.
- Borrow, George, obit., vi, 691.
- Bort, Teisserenc de, on weather prediction, xi, 546; xii, 490.
- Bosco, Baron del, obit., vi, 691.
- Boshway, xii, 81.
- Bosio, A. S., sketch, i, 74.
- Bosnia, i, 756; xix, 64; maps, i, 751, 754; article on, in Berlin Treaty, iii, 257; v, 46; land tenure the cause of troubles in, ix, 64; xiv, 64.
- Bosnians, illustration, i, 757.
- Boss, Emil, ix, 543, 545.
- Boss, Lewis, observations by, viii, 24; prize to, vii, 42; xi, 50.
- Boston, xi, 160; anniversary of, v, 501; foreign exhibition, viii, 825; art club exhibition, xi, 347; view of, i, 510; state house, i, 513; water, xix, 774.
- Bostwick, A. E., experiments, xi, 539.
- Bosworth, Joseph, sketch, i, 75.
- Botanical club, xviii, 31.
- Botanical museum, Brazil, xi, 98.
- Botanists, eminent, ix, 90-96.
- Botany, ix, 90; fossil, 96.
- Boteler, A. R., obit., xvii, 535.
- Botkin, J. D., nominated, xiii, 461.
- Botkin, T., impeached, xvi, 403.
- Botocudo Indians, i, 78.
- Botta, Anne C. L., obit. and portrait, xvi, 608.
- Botta, Vincenzo, obit., xix, 565.
- Bottesini, G., sketch, xiv, 655.
- Böttger, invention, viii, 641.
- Böttiger, K. V., obit., iii, 651.
- Bottle-tree, i, 53.
- Bouchard, J., invention by, x, 734.
- Boucher, x, 364.
- Boucicault, Dion, x, 92; sketch and portrait, xv, 72.
- Boudinot, E. C., obit., xv, 635.
- Boughton, G. H., x, 365; xi, 34.
- Bougureau, x, 362, 363, 367; xii, 275.
- Bouillon, illustration, i, 71.
- Boulanger, Gen., xi, 356; steel-plate portrait, 352; xii, 291; demonstration in favor of, xii, 292; election of, xiv, 333; measures against him, 335; flight and trial, 337; obit., xvi, 665.
- Boulangism, xiii, 347.
- Boullon, Probert and Soward, electric lamp of, viii, 303.
- Boult, S., obit., i, 629.
- Boundaries, disputed, between Russia and Great Britain in Asia, x, 2, 4, 6, *et seq.*; xi, 376; Turkey and Greece, v, 688; vi, 359; war threatened, vi, 374; new line, vi, 377, 380; vii, 371; of Montenegro, xii, 774; Montenegro and Turkey, v, 542, 687, 688; viii, 549; Roumania and Bulgaria, v, 660; Roumania and Austria-Hungary, xii, 720; Bulgaria and Serbia, xii, 736; Switzerland and Baden, v, 677; of Canadian provinces, v, 113; vi, 216; ix, 264-266; British East Africa and Italian possessions, xix, 2; California and Nevada, xix, 511; Michigan and Wisconsin, xix, 585; settlement of between Massachusetts and New Hampshire, xix, 518; between Maryland and Delaware, xix, 237; Chili and Argentine Republic, xix, 121; Peru and Ecuador, xix, 248; United States and British America, i, 382; Mexico and Guatemala, iii, 415; iv, 462; vi, 379; official documents, vi, 570; settled, vii, 375; Honduras and Salvador, xii, 360; Costa Rica and Colombia, v, 113; vi, 112; Colombia, Brazil, and Bolivia, ii, 74; Colombia and Venezuela, viii, 139; Bolivia and Chili, iv, 29, 82; Bolivian treaties, xii, 68; Brazilian, ix, 96; Chili and Argentine Republic, ii, 28; iii, 12, 20, 22; iv, 137; settled, vi, 25; Chili and Peru, viii, 121; Peru and Ecuador, xii, 661; of Guiana, viii, 66; arbitration of United States, vi, 777, 778; between New York and Connecticut, v, 195; New York and New Jersey, viii, 564; xii, 543; Delaware and New Jersey, iii, 236; Maryland and Virginia, i, 502; vii, 507; Georgia and Alabama, ii, 12; of Texas, vii, 794; European nations in Africa, xii, 203, 304; Tennessee and Virginia, xviii, 711.
- Boundary of Netherlands, xiii, 87.
- Boundary, Mexican, xx, 345.
- Boundary, United States, xx, 489.
- Bounties, xiii, 472.
- Bourbeau, L. O., obit., ii, 594.
- Bourbourze, M., ix, 477.
- Bourchardat, A., obit., xi, 710.
- Bourée, Nicolas P., obit., xi, 710.

- Bourgeois Cabinet, the, xx, 306.  
 Bourgeoise, C. A., obit., xi, 711.  
 Bourget, I., obit., x, 657.  
 Bourn amendment, the, xiii, 715.  
 Boussingault, obit., xii, 624.  
 Boutarie, E. P., obit., iii, 651.  
 Boutell, Rev. C., obit., ii, 594.  
 Bouton, Nathaniel, sketch, iii, 59.  
 Bouverie, E. P., sketch, xiv, 656.  
 Bouvier, Alexis, obit., xvii, 586.  
 Bove, Lieut., expedition, vi, 333; xii, 624.  
 Bovee, Marvin H., sketch, xiii, 624.  
 Bovy, F. A., obit., ii, 594.  
 Bowditch, Henry Ingersoll, obit., xvii, 535.  
 Bowditch, H. P., experiments, vi, 751; xi, 46; xii, 671.  
 Bowditch, J. L., sketch, xiv, 620.  
 Bowen, F., obit., xv, 635.  
 Bowen, James, obit., xi, 666.  
 Bowen, J. E., obit., xv, 635.  
 Bowen, Levi F., sketch, xiv, 620.  
 Bower, invention by, vii, 533; ix, 473.  
 Bowers, E. C., obit., xx, 564.  
 Bowers, G. V., obit., iii, 632.  
 Bowie, Oden, obit., xix, 565.  
 Bowler, Mrs. A. K., obit., 613.  
 Bowles, Sir George, sketch, i, 75.  
 Bowles, Samuel, sketch, iii, 59.  
 Bowling Green, xiii, 159.  
 Bowman, Francis C., obit., ix, 603.  
 Bowman, Col. W. P., port., xx, 516.  
 Bown, G., invention by, iv, 134.  
 Boxing, xiii, 98.  
 Boxwood, Cape, x, 135.  
 Boyce, Rev. James, obit., i, 613.  
 Boyce, James P., sketch, xiii, 625.  
 Boycott, xv, 73.  
 Boycrotting conspiracy in Illinois, xii, 375.  
 Boyd, Sir H. H., sketch, i, 75.  
 Boyd, Percy, obit., i, 629.  
 Boyd, R., obit., xv, 635.  
 Boyer, Léon, obit., xi, 711.  
 Boyesen, H. H., obit., xx, 564.  
 Boyle, Charles B., obit., xvii, 535.  
 Boynton, E. C., obit., xviii, 542.  
 Boynton, J. F., obit., xv, 636.  
 Braamecamp, A. J., obit., x, 657.  
 Brabourne, Baron, obit., xviii, 576.  
 Braee, B. F., sketch, xiii, 625.  
 Braee, C. L., obit., xv, 636.  
 Braehvogel, A. E., obit., iii, 651.  
 Braekenbury, H., obit., xv, 675.  
 Braekett, C. F., xi, 46.  
 Bradego, M. G. B., x, 331.  
 Bradford, J. Rose, xii, 678.  
 Bradford, Penn., xii, 119.  
 Bradford, William, obit., xvii, 535.  
 Bradlaugh, Charles, case of, in Parliament, v, 334; vi, 365; vii, 365; viii, 409; ix, 372; x, 453; xi, 399; obit. and portrait, xvi, 666.  
 Bradley, Justice, opinions by, x, 272.  
 Bradley, Edward, sketch, xiv, 656.  
 Bradley, Joseph P., obit., xvii, 536.  
 Bradshaw, Dr., residence, iv, 407.  
 Brady, Alexander, obit., iv, 692.  
 Brady, John R., obit., xvi, 608.  
 Brady, Mrs. R., obit., ii, 576.  
 Bragaldi, Marquis Mario, obit., xviii, 542.  
 Bragdon, Charles D., obit., i, 613.  
 Bragg, Braxton, sketch, i, 75.  
 Bragg, Walter L., obit., xvi, 608.  
 Brahe, Tycho, statue of, i, 230.  
 Brahmanism, reform of. See Brahmo Somaj.  
 Brahmans, conspiracies of, vi, 423.  
 Brahmo Somaj, the, sketch, iv, 89; v, 389; vi, 65.  
 Brain, chemistry of the, i, 89; localization in the function of, vi, 748; surgery of, ix, 742, 749. See also Cerebral Localization, viii, 98, and nervous system, the, xiii, 753.  
 Brainerd, Cape, ix, 35.  
 Brainerd, Minn., xvii, 106.  
 Brake, electric, vi, 255.  
 Brame, J. L. J., obit., iii, 651.  
 Brantot, Alfred H., x, 362.  
 Bramwell, F. J., address, xiii, 45.  
 Bramwell, Lord, obit., xvii, 586.  
 Brand, H. B. W., obit., xvii, 586.  
 Brand, Sir J. H., obit., xiii, 660.  
 Brandt, drill invented by, vi, 820.  
 Brashear, John A., xi, 46, 55.  
 Brassais, St. Mare, obit., iii, 651.  
 Brassey, Annie, obit., xii, 70.  
 Bratiano, Demeter, obit., xvii, 586.  
 Bratiano, J., obit., xvi, 667.  
 Bratiano, M., attempted assassination of, xii, 719.  
 Brattleboro, Vt., xvii, 107.  
 Braun, Alexander, obit., ii, 594.  
 Braunau, illustration, i, 55.  
 Bravard, J. P., obit., i, 629.  
 Bray, Sir John Cox, obit., 609.  
 Brayman, Mason, obit., xx, 564.  
 Brayton, G. A., obit., v, 590.  
 Brazier, Prof., x, 161.  
 Brazil, in every volume; slavery in, i, 76; vi, 73; viii, 67; ix, 97; x, 102; xi, 97; immigration to, i, 77; ii, 74; viii, 68; ix, 97; boundary questions, ii, 74; ix, 96; boundary dispute with France, xx, 96; foreign debt, ii, 77; coffee production, iii, 62; vi, 70; famine in, iii, 64; electoral reform bill, v, 65; vi, 71; cotton manufacture, vii, 72; valuable woods, viii, 72; diamond-mines, viii, 72; explorations, ix, 350; x, 104; xii, 74; valuable new plants, xii, 73; growth of industries, xii, 73; naturalization bill, viii, 68; Enipress of, sketch, xiv, 671; changed to a republic, xiv, 82; revolt in, xviii, 101; civil war in, xix, 79; presidential election in, xix, 81; revolt in, xix, 83; revolt in Rio Grande, xx, 94; indemnity claims to, xx, 95; Missiones dispute, xx, 95.  
 Brazilein, crystalline, vii, 88.  
 Brazilian ox, illustration, iii, 63.  
 Brazza, S. de, explorations by, ii, 333; ix, 401; vi, 328; vii, 336; viii, 385; ix, 165, 168; x, 392; xi, 372.  
 Bread, alum in, iii, 86.  
 Breadstuffs, commerce in, iv, 165.  
 Breakwater at Ceará, xii, 260.  
 Breekinridge, S. M., obit., xvi, 608.  
 Breed, W. P., sketch, xiv, 620.  
 Breese, S., obit., iii, 632.  
 Bregenz, illustration, i, 59.  
 Bremen, incorporation of, xiii, 372.  
 Breniontier, M., experiments by, x, 333.  
 Brennan, John M., obit., xvii, 536.  
 Brennan, Margaret, obit., xii, 573.  
 Brenner, Carl, sketch xiii, 625.  
 Brent, Henry J., obit., v, 590.  
 Brentano, August, obit., xi, 666.  
 Brentano, Lorenzo, obit., xvi, 608.  
 Bresnik, capture of, x, 729.  
 Brestel, R., obit., vi, 691.  
 Brethren Church, xiv, 69.  
 Brethren in Christ, xiii, 770.  
 Brethren, or Tunkers, xix, 84.  
 Breton, J., x, 367; xi, 344, 347; xii, 280.  
 Brevoort, J. C., obit., xii, 573.  
 Brewer, David J., sketch, xiv, 805; portrait, xv, 820.  
 Brewster, Francis B., obit., xvii, 586.  
 Brewer, J. S., obit., iv, 698.  
 Brewster, B. H., portrait, vii, 812; sketch, xiii, 625.  
 Brewster, David, xi, 565, 569, 570.  
 Brewster, Henry, obit., xii, 573.  
 Bribery, charges of, iv, 718; law in New Jersey, v, 561; trial for, v, 621; ease of Sessions, vi, 648.  
 Brice, B. W., obit., xvii, 536.  
 Brice, O. and A., experiments by, xii, 107.  
 Briekman, A. O., obit., xi, 666.  
 Briekwork, xiii, 106; strength of, xx, 254.  
 Bridge at Memphis, xvii, 249.  
 Bridge construction, x, 328.  
 Bridge ferry, at Bilbao, xviii, 279.  
 Bridge, Horatio, obit., xviii, 542.  
 Bridgeport, xi, 161.  
 Bridges, new, i, 256, 257; over the Kentucky, ii, 273; over the Ohio, ii, 273; v, 244; in California, ii, 273; over the Tay, ii, 274; x, 328; xii, 253; disaster at the Tay, v, 344; report on, v, 244; over the Severn, ii, 275; iii, 283; iv, 340; over the Erewash, ii, 275; at Buda-Pesth, ii, 275; over the Douro, ii, 276; iii, 283; East River, iii, 280; vi, 245; vii, 582; viii, 311; upper East River, vii, 282; over the Missouri, iii, 282; v, 242; over the Volga, iv, 342; in America, iv, 342; over the Nile, iv, 342; Forth, vii, 283; viii, 315; ix, 312; x, 328; Kinzua valley, vii, 283; Niagara Cantilever, viii, 313; Garabit viaduct, viii, 316; renewal of Niagara, vi, 245; Blaaw-Krantz, x, 329; railroad in United States, v, 242; use of steel for, iv, 342; at Oporto, illustration, xi, 313; and viaduct in Russia, illustration, 315; in Mexico, illustration, 316; at Verona, x, 330; at Poughkeepsie, xii, 252; illustration, xii, 253; at Taranto, illustration, xii, 254; stiffened suspension, with diagrams, xii, 254; at Oak Park, xii, 255; at St. Louis, xii, 229. See Engineering.  
 Bridgeton, N. J., xvii, 107.  
 Bridge tower, moving, xvii, 250.  
 Bridgman, Frederiek, x, 363.  
 Bridgman, L. D., sketch, xiv, 620.  
 Brierley, J. T., x, 154.  
 Brig, boat discovered at, xi, 35.  
 Brigandage in Italy, i, 422; in Thessaly and Epirus, v, 690; in Egypt, ix, 286; xiii, 115; xiv, 98; xvi, 827.  
 Briggs, Charles F., sketch, i, 79.  
 Briggs, Mrs. H. H., obit., i, 613.  
 Briggs, Jeremiah, obit., i, 613.  
 Brigham, David, sketch, xiii, 625.  
 Brigham, Lincoln F., obit., xx, 565.  
 Brigham, M. A., sketch, xiv, 620.



- Bright, J., sketch, xiv, 656.  
 Bright, John, sketch, v, 65; ix, 275.  
 Brightly, F. C., sketch, xiii, 625.  
 Brighton, illustration, iii, 400.  
 Brignoli, P., obit., ix, 603.  
 Brin, M. M., experiments, x, 159.  
 Brinckmann, J. B., sketch, xiv, 658.  
 Brinkerhoff, J., obit., v, 590.  
 Brinley, Francis, sketch, xiv, 621.  
 Brinsmade, H. N., obit., iv, 692.  
 Brinton, Daniel G., xii, 14; address, xiii, 44.  
 Brinz, Aloiz von, obit., xii, 624.  
 Brion, G., obit., ii, 595.  
 Brisbane, W. H., obit., iii, 633.  
 Brisbin, James S., obit., xvii, 536.  
 Brisson, H., x, 27, 375; sketch, 376.  
 Bristol, dock at, iii, 287.  
 Bristow, E., obit., i, 630.  
 British America, explorations in, xiv, 357; xvii, 299.  
 British colonies, areas, etc., x, 460.  
 British Columbia, viii, 72; ix, 270; xix, 85; xx, 97; boundaries, ix, 264, 265; x, 104; xi, 98; Chinese question in, x, 104; xvii, 68; xviii, 107.  
 British East Africa, xviii, 270.  
 British South Africa, xix, 104.  
 British Honduras, ix, 803.  
 British ministry, change of, x, 446.  
 British politics, in India, v, 383.  
 British South Africa Company, xviii, 122.  
 Britton, Winchester, obit., xi, 666.  
 Broadus, John A., obit., xx, 565.  
 Broadway street railroad, x, 641.  
 Broadwood, H. F., obit., xviii, 576.  
 Broca, Paul, sketch, v, 66.  
 Brock, Edgar P. L., obit., xx, 604.  
 Brockett, L. P., obit., xviii, 543.  
 Brockhaus, H., obit., ii, 595.  
 Brocklesby, John, sketch, xiv, 621.  
 Brockton, xi, 161.  
 Brockville, xv, 121.  
 Brockway, Z. R., xii, 703.  
 Brodie, Sir B. C., obit., v, 598.  
 Brodie, J. H., x, 478.  
 Broglie, Duc de, message of, ii, 311; sketch of, ii, 319; x, 375.  
 Bromfield's iron process, vii, 529.  
 Bromide of ethyl, v, 94.  
 Bromine, discovery of, see Balard, i, 61; manufacture of, v, 89.  
 Bromley, V. W., obit., ii, 595.  
 Brongniart, A. J., sketch, i, 80; ix, 273.  
 Bronsart, Gen., obit., xvi, 667.  
 Bronson, S. A., obit., xv, 636.  
 Bronzes and brasses, new methods, vi, 542; investigation of strength of, ix, 477; silicious, x, 578.  
 Bronzino, sale of picture by, x, 366.  
 Brooklyn, xi, 162; Atlantic dock at, illustration, i, 606; theater burned, i, 605; xix, 774.  
 Brooks, Arthur, obit., x, 565.  
 Brooks, C. T., obit., viii, 587.  
 Brooks, D., invention, iv, 347.  
 Brooks, David, obit., xvi, 609.  
 Brooks, Elisha, obit., i, 613.  
 Brooks, E. P., obit., iii, 633.  
 Brooks, Erastus, obit., xi, 667.  
 Brooks high-license law, xiv, 688.  
 Brooks, Horace, obit., xix, 565.  
 Brooks, Horatio G., obit., xii, 573.  
 Brooks, Joseph, obit., ii, 576.  
 Brooks, Lewis, obit., ii, 576.  
 Brooks, Phillips, sketch and port., xviii, 111.  
 Brooks, W. R., observations by, vii, 35; discoveries, viii, 24; ix, 51; x, 51; xi, 57; xii, 45.  
 Broomall, John M., obit., xix, 566.  
 Broome, Sir F. N., ix, 60; x, 60, 65.  
 Brophey, George, obit., v, 590.  
 Brot, Charles A., obit., xx, 604.  
 Brougham, John, sketch, v, 66.  
 Brown, Abel J., obit., xix, 566.  
 Brown, Barrington, ix, 539, 540.  
 Brown, B. Gratz, obit., x, 646.  
 Brown, Charlotte E., obit., xx, 565.  
 Brown, Dyer D. S., obit., xii, 573.  
 Brown, D. S., obit., ii, 576.  
 Brown, Ford Madox, obit., xviii, 576.  
 Brown, George L., sketch, xiv, 621.  
 Brown, H. A., obit., iii, 633.  
 Brown, Henry Billings, sketch and port., xv, 819.  
 Brown, H. S., obit., i, 614.  
 Brown, J. G. L., obit., iii, 633.  
 Brown, J. M., obit., xv, 637.  
 Brown, John, monument to, ii, 417.  
 Brown, John, obit., ix, 603.  
 Brown, John C., sketch, xiv, 621.  
 Brown, J. H. H., sketch, xiii, 625.  
 Brown, Joseph B., obit., xvi, 609.  
 Brown, Joseph E., sketch, v, 311.  
 Brown, Joseph E., obit., xix, 566.  
 Brown, Oscar F., sketch, xiv, 621.  
 Brown, S. G., obit., x, 646.  
 Brown-Séguard, Chas. E., obit. and port., xix, 566.  
 Brown, Simeon, obit., xviii, 543.  
 Brown, Thomas Gore, obit., xii, 625.  
 Brown, William, obit., i, 630.  
 Brown, W. F., obit., vi, 679.  
 Browne, George W., obit., xv, 636.  
 Browne, John M., obit., xix, 566.  
 Browne, R. W., obit., xx, 605.  
 Browne, T. H. B., obit., xvii, 537.  
 Browne, T. M., obit., xvi, 609.  
 Browning, O. H., sketch, vi, 73.  
 Browning, Robert, sketch and port., xiv, 86.  
 Brownlow, W. G., sketch, ii, 79.  
 Brownson, O. A., sketch, i, 81.  
 Bruce, David, obit., xvii, 537.  
 Bruce, J. C., obit., xvii, 586.  
 Brücke, investigations by, ix, 657; illustration of his magnifier, ix, 500; xii, 674.  
 Brückner, E., xii, 491.  
 Bruges, bells of, x, 611; belfry of, illustration, i, 72.  
 Brugsch, Heinrich K., obit., xix, 610.  
 Brüggemann, K. H., obit., xii, 625.  
 Brugière picric powder, x, 346.  
 Brugsch, E., researches of, vii, 261; x, 35, 36.  
 Brühl, M., obit., ii, 595.  
 Brunei, xvi, 344; xvii, 326.  
 Brunet, J. M., sketch, ii, 320.  
 Brünninghausen, C., obit., i, 614.  
 Brunswick, Ga., xiv, 141; xviii, 340.  
 Brunswick succession, ix, 359; death of the duke, ix, 624; x, 418; regent, x, 418.  
 Brunton, T. L., ix, 655, 660.  
 Brush, C. C., obit., xvii, 537.  
 Brush, C. F., electric light, vi, 258; experiments, vii, 266; storage-battery, vii, 273; street-lamp, illustration, ix, 307.  
 Brussels, exhibition, xi, 346; illustration, ii, 69.  
 Bryant, W. C., sketch and portrait, iii, 64.  
 Bryon, James M., obit., xx, 565.  
 Bryson, Andrew, obit., xvii, 537.  
 Bubastis, great temple of, xii, 19; illustration, xii, 20; monuments at, xiii, 28; work at, xiv, 27.  
 Bûbûn sacked, ix, 558; x, 150.  
 Buccaneers' fort, Cuba, ill., xx, 218.  
 Buecheleuch, Duke of, obit., ix, 615.  
 Buchan, Alexander, xi, 542.  
 Buchan, Mr., x, 120.  
 Buchanan, Sir G., obit., xx, 605.  
 Buchanan, J. N., xii, 104.  
 Buchanan, Mr., xi, 540.  
 Buchanan, R. C., obit., iii, 633.  
 Bucharest, illustration, i, 759.  
 Bucher, A. L., obit., xvii, 586.  
 Buchholtz, Reinhold, sketch, i, 81.  
 Buchtel, John R., obit., xvii, 537.  
 Buck, Dr. G., sketch, ii, 79.  
 Buck, Hiram, obit., xvii, 538.  
 Buckingham, Duke of, sketch, xiv, 658.  
 Buckingham, Lieut., observations by, ix, 554.  
 Buckingham, William A., statue of, sketch, ix, 231; x, 361.  
 Buckland, Cyrus, obit., xvi, 609.  
 Buckland, F. T., obit., v, 598.  
 Buckland, Ralph P., obit., xvii, 538.  
 Buckminster, W. J., obit., iii, 633.  
 Bucknall, Benjamin, obit., xx, 605.  
 Bucknell Observatory, xii, 40.  
 Bucknell, W., obit., xv, 637.  
 Buckner, Gen. Simon B., x, 423.  
 Buda, Hungary, view of, i, 387.  
 Budberg, Baron, obit., vi, 691.  
 Budd, Dr. C. A., obit., ii, 576.  
 Budd, C. H., obit., v, 590.  
 Budde, Dr., viii, 528.  
 Buddhism, in Japan, i, 428; xiii, 109.  
 Buddicom, W. B., obit., xii, 625.  
 Buddington, S. O., sketch, xiii, 625.  
 Budington, W. I., iv, 94.  
 Budtzki, R. O. von, obit., i, 630.  
 Buel, Samuel, obit., xvii, 538.  
 Buell, Gen. Don Carlos, x, 424.  
 Buenos Ayres, financial crisis in, i, 35; project for a port, iii, 20; view of the city of, ii, 31; of the bank of, vii, 25.  
 Buerger, E. M., obit., xv, 637.  
 Buffalo, or bison, extermination of the, xii, 74.  
 Buffalo wood, xix, 557.  
 Buffalo, N. Y., xi, 162; view of, i, 601; water, xix, 774.  
 Buffum, James N., obit., xii, 574.  
 Buford, Thomas, iv, 541.  
 Bugbee, S. C., obit., ii, 576.  
 Building and Loan Associations, viii, 85; xiii, 245.  
 Building material, new, xx, 638.  
 Buildings, high, xx, 252.  
 Bulas, tribe of the, v, 291.  
 Bulgaria, iii, 65; xix, 86; xx, 98; map, ii, 722; in the Berlin Treaty, iii, 256; first Parliament, iv, 95; election of prince, iv, 97; disturbances, iv, 98; national debt, v, 67; Constitution annulled, vi, 73; vii, 73; viii, 74; ix, 101; x, 105; conflict with Servia, ix, 102, 733; revolution, x, 107; Servian action, x, 109; Greek, x, 109; Turkish, x, 110; of the great powers, x, 111; union with East Roumelia, ix, 103; conference to settle, x, 752-755; victory of England, x, 754; xi, 100; Alexander

- dethroned, xi, 103; restored, xi, 104; abdication, xi, 104; the regency, xi, 106; treaty of friendship with Servia, xi, 108; the Russians in, xi, 391; election of Ferdinand, xii, 80; new Cabinet, xii, 80; xiii, 111; xiv, 95; xv, 80; xvi, 96; xvii, 69; xviii, 114; revision of the Constitution, xviii, 116; Macedonian agitation in, xx, 100.
- Bulgarian costumes, i, 757.
- Bulgaria, D., obit., iii, 651.
- Buli Dupis, tribe of, vi, 330.
- Bulkley, J. W., sketch, xiii, 626.
- Bull, dephosphorization, viii, 521.
- Bull, Ephraim W., obit., xx, 565.
- Bull, Richard H., obit., xvii, 538.
- Bullard, Asa, sketch, xiii, 626.
- Bull-fights, motion for schools for toradors in Spain, v, 671; xii, 504.
- Bulloch, W. H., ix, 502, 503, 505, 513.
- Bullock, R. B., trials of, iii, 372.
- Bullock, W. F., sketch, xiv, 621.
- Bull Run, battle of, x, 652.
- Bull-terrier, the, ix, 260.
- Bulow, Herr von, x, 419.
- Bulow, Hans G. von, obit., xix, 610.
- Buloz, F., obit., ii, 595.
- Bulwer, Sir Henry, x, 137.
- Bunce, O. B., obit. and port., xv, 637.
- Bunda, Gen., iv, 727.
- Bundy, Jonas M., obit., xvi, 609.
- Bungay, G. W., obit., xvii, 538.
- Bunge, Dr. A., ix, 348; xii, 316.
- Bunge, Nicholas C., obit., xx, 605.
- Bunker, D. M., prize to, x, 367.
- Bunker, Robert, obit., xvii, 538.
- Bunsen, Baroness, obit., i, 630.
- Bunsen, Robert W., xii, 412.
- Bunzl, Julius, obit., xii, 574.
- Buoys, v, 451; signal, viii, 721, 722.
- Burbank, Alfred P., obit., xix, 567.
- Burch, J. C., sketch, vi, 76.
- Burchard, S. D., obit., xvi, 609.
- Burdach, E., obit., i, 630.
- Burdeau, Auguste, obit., xix, 610.
- Burdon-Sanderson, J. S., ix, 660 x, 150; port., xviii, 31.
- Bureau, Achille, sketch, xiii, 626.
- Bureau of Education of the U. S., xix, 248.
- Burgers, T. F., obit., vi, 691.
- Burgess, Edward, obit., xvi, 609.
- Burgess, Henry, obit., xi, 711.
- Burgess, Walter S., obit., xvii, 538.
- Bürgin, invention of, vi, 253.
- Burial, regulations for, in Great Britain, i, 360; of the unbaptized, i, 23; of dissenters in parish church-yards, ii, 17, 66; iii, 13; v, 16, 17; discussed in Parliament, v, 341; law of, xiii, 116.
- Burke, Denis F., obit., xviii, 543.
- Burke, E. A., defalcation, xiv, 518.
- Burke, Sir J. B., obit., xvii, 586.
- Burke, T. H., obit., vii, 645. See Phoenix Park Murders.
- Burke, T. M., obit., viii, 597.
- Burleigh, C. C., obit., iii, 633.
- Burleigh, J. H., obit., ii, 576.
- Burleigh, Lord, x, 722.
- Burlingame, A., ambassador from China, iii, 810; treaty, vii, 387.
- Burlington, Iowa, xiv, 450; xvii, 108.
- Burlington, Vt., xvii, 108.
- Burnah, iv, 98; v, 68; xi, 110; map, iv, 99; xi, 111; Chinese influence in, iv, 143; British in, vii, 416; x, 112; state barge, illustration, x, 113; conflict with Great Britain, x, 114; a Burmese colonel, illustration, x, 114; relations with France, x, 114, 115; annexation by Great Britain, x, 115; conflict with China, x, 115; xii, 81; warfare in, xii, 81, 83; English rule established, xii, 82; petroleum in, xii, 84; rubymines, xii, 84; xiii, 437; xiv, 429; xv, 436; xvi, 377.
- Burnaby, Frederick G., ix, 304; sketch and portrait, x, 115.
- Burne-Jones, Edward, x, 360; xi, 345; xii, 277, 278.
- Burnes, Alexander, xi, 2.
- Burnes, James N., sketch, xiv, 621.
- Burnett, P. H., obit., xx, 565.
- Burnett, Sir J. H., obit., i, 630.
- Burnett, W. B., obit., ix, 603.
- Burnham, Horace B., obit., xix, 568.
- Burnham, S. W., discoveries and experiments by, iii, 38; v, 36, vii, 36; viii, 26.
- Burnham, T. O. H. P., obit., xvi, 610.
- Burnhem, G. W., obit., x, 646.
- Burns, Rev. J., obit., i, 630.
- Burns, Robert, his cottage, i, 357.
- Burns, Sir G., obit., xv, 675.
- Burns, W. W., obit., xvii, 538.
- Burnside, Ambrose E., sketch, vi, 76; statue of, xii, 230.
- Burnside, John, sketch, vi, 77.
- Burnside Will Case, vii, 486.
- Burr, D. J., obit., i, 614.
- Burrell, Sir Percy, sketch, i, 82.
- Burril, observations by, vi, 669.
- Burritt, Elihu, sketch, iv, 102.
- Burroughs, J. C., obit., xvii, 538.
- Burroughs, William, obit., i, 614.
- Burrows, Sir J. C., obit., i, 630.
- Bursian, C., obit., viii, 598.
- Burstal, Edward, obit., xi, 711.
- Burt, W. A., x, 401.
- Burtis, Divine, obit., xii, 574.
- Burton, Capt., theory of, iii, 361.
- Burton, Harry, x, 454.
- Burton, J. R., obit., i, 630.
- Burton, Nathaniel J., obit., xii, 574.
- Burton, Sir R. F., sketch and port., xv, 86.
- Burwell, T., obit., xvi, 610.
- Busehmann, J. K. E., obit., v, 598.
- Bushman, illustration, ii, 86.
- Bushnell, Horace, sketch, i, 82.
- Busk, George, obit., xi, 711.
- Buss, F. J. von, obit., iii, 651.
- Buss, Frances M., obit., xix, 610.
- Bustard, Australian, ii, 51.
- Buteher, Samuel, sketch, i, 82.
- Butler, Benjamin F., x, 427, 428; obit. and port., xviii, 543.
- Butler, Mrs. B. F., obit., i, 614.
- Butler, C. M., obit., xv, 638.
- Butler, B. I., obit., vi, 679.
- Butler, David, obit., xvi, 610.
- Butler, George B., obit., xi, 667.
- Butler, T. L., obit., v, 590.
- Butler, W. O., sketch, v, 70.
- Bütner, Dr., xi, 373.
- Butt, Isaac, sketch, iv, 103.
- Butt, Sir C. P., obit., xvii, 587.
- Butte City, Mon., copper works at, x, 577; xvi, 150.
- Butter, analysis of, xiii, 144.
- Butterfield, Horatio Q., obit., xix, 568.
- Butter in Iowa, xviii, 408.
- Buttinger, W., sketch, xiii, 623.
- Buttre, John C., obit., xviii, 544.
- Buxime, xi, 290.
- Buxton, D. W., xii, 674, 679.
- Buys-Ballot, xi, 539; iv, 798.
- Bynner, Edwin L., obit., xviii, 544.
- Byron, Henry J., obit., ix, 615.
- Caballero, F., sketch, i, 82; ii, 595.
- Cabanel, Alexandre, x, 362; xii, 275; sketch, xiv, 658.
- Cabat, N. L., obit., xviii, 577.
- Cabell, James L., sketch, xiv, 621.
- Cable-railways, xi, 122; illustrations, 122-125.
- Cables, Atlantic, viii, 338; Protection of Submarine, viii, 76; ix, 339. See Cordage.
- Cable, submarine, xiii, 574; traction, xiv, 295.
- Cabrera, Count, sketch, i, 82.
- Cabul, map, iv, 13; view of, ii, 5.
- Caceres, Gen., ix, 649; x, 686, 687.
- Cadmium, atomic weight of, vi, 93.
- Cæsius, isolation, of, vii, 97.
- Caffarel, Gen., xii, 294.
- Caffee, Col. W. K., port., xx, 514.
- Caffre War, the, ii, 85; iii, 7, 81; iv, 128, 129; revolt, xix, 103.
- Caffres, the. See Basutos, and Bechuanaland.
- Cahensly agitation, the, xvi, 774.
- Caillaux, Eugène, ii, 319.
- Cailet de Poney, experiments by, vi, 751.
- Cailetet, M. Le, liquefaction of gases by, ii, 89; ix, 434; x, 152; illustration, ii, 89.
- Cain, Auguste, obit., xix, 610.
- Caine, J. T., nominated, xiii, 832.
- Caird, Sir J., obit., xvii, 587.
- Cairn, Richard Harvey, obit., xii, 575.
- Cairns, Hugh MacCalmont, Earl, land act of, x, 457; obit., x, 657.
- Cairns, Robert, obit., i, 614.
- Cairo, Ill., xviii, 153.
- Cairo, street in, illustration, i, 246.
- Cairoli, Benedetto, sketch, xiv, 658.
- Calanan, M. E., obit., xv, 638.
- Calcutta exhibition, ix, 407; view of buildings and monument in, i, 404.
- Caldecott, Randolph, obit., xi, 711.
- Calderon, Centenary, vi, 819.
- Calderon, G., vi, 738. See Peru, Chili, and the United States, vi, 738.
- Calderon, Philip H., x, 364; xi, 345.
- Caldwell, C. H. B., obit., ii, 576.
- Caldwell, S. L., sketch, xiv, 622.
- Calendar, the Gregorian, vii, 371.
- Calendar-stone, Aztec sacrificial ix, 17, 18; illustration, ix, 18.
- Caley, Dr., operation by, x, 742.
- Calf-feeder, xvi, 708.
- Calgary, xiii, 160.
- Calhoun, J. C., statue of, xii, 280.
- Calhoun, S. H., obit., i, 614.
- Calico-printing, xii, 109.
- California, in every volume; map of Yosemite Valley, iii, 80; views in, ii, 81, 82; iii, 71, 72; railroad questions, i, 85; iv, 112, 117; vii, 78; taxation, i, 86, 87; vi, 80, 84; labor questions, iii, 69, 73; iv, 109; v, 77; irrigation,



- iii, 72; ix, 104; x, 118; contested land-titles, v, 77; new constitution, v, 77; petroleum and asphaltum, xii, 88; wines and fruits, iii, 80; iv, 119; vi, 79; x, 117; xi, 128; disposal of *débris*, iii, 72; v, 73; vi, 78; vii, 75; ix, 105; Fruit Growers' and Shippers' Association, xx, 104; cod-fishing, x, 118; project to divide into two States, xii, 88; population, xvi, 98; midwinter exposition, xviii, 120; xix, 91; xx, 105; river and harbor improvements, xx, 105. Chinese in. See Chinese in United States.
- California, Lower, xiii, 547.
- Calkins, Norman A., obit., xx, 566.
- Callaway, H., obit., xv, 675.
- Calthrop, Claude, obit., xviii, 577.
- Calverley, Charles S., obit., ix, 615.
- Calvert, G. H., sketch, xiv, 622.
- Calvin, John, proposed monument to, ix, 667.
- Calvinistic Methodist Church, xiii, 705.
- Cam, Diego, ix, 168; xii, 306.
- Cambier, explorations, iii, 361.
- Cambodia, ix, 339; x, 118; insurrection in, x, 118.
- Cambridge, xi, 163; water, xix, 774.
- Cambridge, Duchess of, sketch, xiv, 659.
- Cambyes, x, 607.
- Camden, xi, 163; water, xix, 774.
- Cameron, plan for exploration, ii, 329.
- Cameron, C. S., obit., xvi, 610.
- Cameron, D. A., sketch, xiii, 660.
- Cameron, D., observations, vii, 39.
- Cameron, J. Donald, sketch, i, 88.
- Cameron, Simou, sketch and port., xiv, 622.
- Cameron, Varney L., obit., xix, 610.
- Cameroons, ix, 364, 365; x, 119; xi, 129; complications with England, x, 119; revolt against the German government, x, 121; mountain districts, x, 122; Mahin district, x, 123; compromise with England, x, 123, 395.
- Cammarota, F., obit., i, 620.
- Camoens, tercentenary of, v, 628.
- Camp, Frederick E., obit., xvi, 610.
- Camp, Hiram, obit., xviii, 544.
- Camp, Max'me du, obit., xix, 611.
- Campagna, view of the, i, 419; recclamation of, viii, 454.
- Campbell, Allen, obit., xix, 568.
- Campbell, A., obit., xv, 638.
- Campbell, Sir A., obit., xvii, 587.
- Campbell, B., sketch, xiii, 626.
- Campbell, Douglas, obit., xviii, 544.
- Campbell, Sir George, xi, 48; obit., xvii, 587.
- Campbell, J. A., obit., v, 591.
- Campbell, J. A., sketch, xiv, 622.
- Campbell, Jabez P., obit., xvi, 610.
- Campbell, James, obit., xviii, 544.
- Campbell, James H., obit., xx, 566.
- Campbell, J. F., x, 583.
- Campbell, J. L., obit., xi, 667.
- Campbell, J. M., sketch, xiii, 626.
- Campbell, J. V., obit., xv, 639.
- Campbell, Judge, x, 325.
- Campbell, Margaret W., iv, 598.
- Campbell, T. C., obit., ii, 576.
- Campbell, Turis G., obit., xvi, 611.
- Campbell, W. H., obit., xv, 639.
- Campenon, Gen., xi, 25, 375, 376.
- Campero, Gen., ix, 88.
- Camphausen, W., obit., x, 658.
- Campos, Martinez, ix, 741.
- Camps for boys, xiii, 120.
- Cana in Galilee, stone from, x, 37.
- Canada, Dominion of, xiii, 375; xiv, 275; xv, 257; xvi, 258; xvii, 239; xviii, 262; xix, 95; xx, 105; Northwest Territories, xx, 558. See Dominion.
- Canada, Clein, obit., v, 591.
- Canada, immigration in, xix, 98; canals, xx, 107; copyrights, xx, 108.
- Canadians, attempt to repatriate, ix, 676.
- Canals, ship, xx, 248; interoceanic, i, 117, 253; iii, 105; iv, 340; v, 200; vi, 662; vii, 279; viii, 581; ix, 592; see also Interoceanic Canal, iv, 503; of New York State, xviii, 522; and Panama Canal, vi, 714; xii, 138; Panama, xviii, 173; xix, 145; obligations of United States, v, 379; Suez, i, 244, 247, 355; ii, 263, 270; iii, 268; xix, 254; xx, 245; enlargement, viii, 307; xii, 240; proposed, to the Sahara, i, 254; Chinese Grand, iii, 291; Ob to Yenesel, iii, 358; Krah, vi, 244; projected in Germany, Austria, and Holland, vi, 244; v, 249; the North Sea, i, 253, 254, 583; x, 417; xi, 338; Corinth, vi, 243; viii, 308; xviii, 70; proposed Zuyder Zee, i, 254; in Switzerland, iii, 291; Black Sea to Caspian, i, 253; Volga-Don, xi, 378; proposed Mississippi, v, 379, 719; vi, 410; vii, 381; proposed Florida, iv, 377; vii, 312; viii, 309; proposed Cape Cod, v, 247; xii, 459; proposed Hudson and East River, iii, 291; v, 250; from Lake Huron to Lake Ontario, iv, 240; proposed from Baltimore to Atlantic Ocean, iii, 239, 521; iv, 559; Columbia, ii, 627; in Canada, v, 219; xx, 107; Welland, vii, 215; Lachine, iv, 321; Chignecto, vi, 244; Erie, new mode for propelling boats on, iv, 345; New York Assembly on, iii, 616; abolition of tolls, vi, 651; St. Petersburg ship, x, 716; Isthmus, xi, 653; Nicaragua, xii, 563; Chesapeake and Ohio, xii, 456; xx, 460; Nicaragua, with map, xiii, 614; Illinois and Michigan, xv, 428; xix, 361; Sault Ste. Marie, xix, 99; xx, 249; Harlem ship, xx, 250; Nicaragua, bill concerning, xx, 200.
- Canalization of rivers, xiv, 293.
- Canal tolls, xvii, 194.
- Canandaigua, xv, 121.
- Canaris, C., obit., ii, 595.
- Canby, Gen., x, 431.
- Canceling machines, xii, 689.
- Cancer, cures for, x, 298, 299.
- Candahar, battle near, v, 7, evacuated by the British and taken by Ayoub, vi, 3; map, v, 7; proposal to cede, to Turkey, x, 12; illustration, iii, 5.
- Candia, insurrection in, i, 2.
- Cannabinon, x, 299.
- Canned provisions, ix, 2; their wholesomeness, 106.
- Canning, Josiah D., obit., xvii, 539.
- Cannlug, Sir S. See Stratford de Redcliffe.
- Cannön, Anthony, obit., xvi, 611.
- Canoes, ix, 107; Papuan double, ix, 116; Feejee, ix, 117; illustrations, ix, 116 *et seq.*
- Cañon City, Col., xviii, 154.
- Can-opener, xvi, 705.
- Canovas, retirement of, vi, 818; ix, 741; x, 140, 143.
- Canrobert, François, obit., xx, 605.
- Cantagoul, F. F. J., obit., xii, 625.
- Canterbury, J. H. T. M. S., Viscount, obit., ii, 595; Archbishop of, viii, 6, 57; Convocation of. See under Anglican Churches in every volume.
- Canterbury Cathedral, iii, 401.
- Canterbury Convocation, xiii, 15.
- Cantilever bridge, viii, 313.
- Canton, view of, i, 111; riots in, viii, 128; xiii, 160.
- Cantor, Rachel, obit., xx, 566.
- Cautri, Cesare, obit., xx, 606.
- Cantwell, E. P. C., obit., xvi, 611.
- Cantwell, J. C., x, 400.
- Canvas, decoration with, ix, 245.
- Capalti, Cardinal, obit., ii, 596.
- Cape Colony, and South Africa, in every volume except i; map, iv, 122; view in, ii, 85; natives, illustration, 86; diamond-fields, ix, 110; x, 135; question of federation, iv, 128; Whale Bay annexed, v, 79; wars in, see Caffre War, Basutos, Bechuanaland, Boers, Transvaal, and Zulus, xiii, 122; xiv, 102; xv, 92; xvi, 101; xvii, 74; xviii, 120; annexation of Lebombo and Tongaland, xx, 111. See Cape of Good Hope.
- Cape Horn, view of, iii, 12.
- Cape of Good Hope, x, 134; xi, 133; observatory at, ix, 47, 53; diamonds at, x, 135; forests, x, 135; forests, x, 135; xii, 91; annexation of Zululand and disfranchisement of natives, xii, 92. See Cape Colony.
- Cape Robert Lincoln, ix, 34.
- Cape Sabine, an island, ix, 36.
- Cape Town, view of, ii, 85.
- Capello, B., explorations by, iv, 405; v, 293.
- Capello, Hernenegildo, x, 394.
- Capen, Francis L., sketch, xiv, 623.
- Capen, Nahum, obit., xi, 667.
- Capern, Edward, obit., xix, 611.
- Caperton, A. T., sketch, i, 88.
- Capital cases, appeal in, xiv, 229.
- Capital punishment, abolition of, i, 420; crime before and after, in the Netherlands, vi, 627; commission on mode of, xii, 548.
- Capitol at Washington, i, 784.
- Cappa, Carlo A., obit., xviii, 544.
- Capponi, Marquis, sketch, i, 88.
- Capriles, Señor, x, 140, 141.
- Caprin's resignation, xix, 319.
- Capron, S. M., obit., iii, 634.
- Carboazotine, x, 143.
- Carbolic acid, test for, iii, 92; poisoning by, viii, 752.
- Carbon, water on alloys containing, iii, 91; in iron, vi, 97; saturation capacity of, ix, 424; study of compounds of, x, 148, 149.

- Carbon bisulphuret, new compounds, iii, 84.  
 Carbon disulphide, v, 88.  
 Carbon sulphobromide, vii, 88.  
 Carbonate mines, xvii, 772.  
 Carbonate of potash, x, 154.  
 Carbonate of soda, xii, 108.  
 Carbondale, Pa., xviii, 155.  
 Carbonic acid, in the air, viii, 120.  
 Carbonic oxide, xii, 108.  
 Car-building, xiii, 128.  
 Cardinals, creation of, i, 703; iv, 773; vii, 724; the first American, x, 568.  
 Cardozo, L. F., sentence and pardon of, iv, 820.  
 Cardozo, T. W., impeachment, i, 561.  
 Cardwell, Edward, obit., xi, 712.  
 Carey, A. D., xii, 310.  
 Carey, H. C., obit., iv, 129.  
 Carey, J. M., renominated, xiii, 849.  
 Carey, murder of, viii, 416.  
 Carillou chimes, x, 611.  
 Carinthia, discovery in, ix, 23.  
 Carl Anton, Prince, obit., x, 658.  
 Carl, King of Wurtemberg, obit., xvi, 667.  
 Carl, Priuce, obit., viii, 598.  
 Carle, James, obit., xvii, 539.  
 Carlen, E. F., obit., xvii, 587.  
 Carles, W. R., x, 397.  
 Carlile, John S., obit., iii, 634.  
 Carlin, John, obit., xvi, 611.  
 Carlisle, James M., obit., ii, 576.  
 Carlisle, John Griffin, Speaker, sketch and port., viii, 93; sketch and port., xviii, 734.  
 Carlisle, Pa., xviii, 155.  
 Carlist War, the, x, 656.  
 Carlist War, close of the, i, 261, 728; party, v, 673.  
 Carl, David, sketch, xiii, 626.  
 Carlsson, Erland, obit., xix, 568.  
 Carlyle, Thomas, letter on the Eastern question, ii, 365; sketch, vi, 89.  
 Carmichael, Dr., experiments by, ix, 728, 729.  
 Carnarvon, Earl of, x, 419, 455; portrait, x, 451; sketch, 449; obit., xv, 675.  
 Carné, Count de, sketch, i, 88.  
 Carnegie, Andrew, quoted, xi, 367.  
 Carnelly, T., discoveries by, vi, 495; ix, 119; xii, 100, 111.  
 Carney, Thomas, sketch, xiii, 626.  
 Carnochan, John M., obit., xii, 575.  
 Carnot, Lazare II., sketch, xii, 660.  
 Carnot, Marie François Sadi, v, 281; sketch and portrait, xii, 93, 289, 297.  
 Carnot, President, assassination of, xix, 290.  
 Caro, Elme Marie, obit., xii, 625.  
 Caroline, Duchess, obit., i, 630.  
 Caroline Islands, x, 138; map, x, 139; gateway on Strong's Island, illustration, x, 141; the King's house, illustration, x, 143; discovery of, x, 138; Spanish claim to, x, 140; German flag planted, x, 141; diplomatic correspondence, x, 142; ruins in, x, 140; mediation by the Pope, x, 144; rebellion, xii, 741.  
 Caroline, Queen, obit., vi, 691.  
 Caron, A. P., knighted, x, 129.  
 Caron, R. E., obit., i, 630.  
 Carpender, E. W., obit., ii, 576.  
 Carpenter, Henry, obit., xii, 575.  
 Carpenter, Lant, x, 144.  
 Carpenter, Mary, obit., ii, 596.  
 Carpenter, M. H., sketch, vi, 91.  
 Carpenter, Philo, obit., xi, 668.  
 Carpenter, W. B., sketch, x, 144.  
 Carpets, viii, 94; wools, 96.  
 Carr, Comyns, x, 347.  
 Carr, E. L., nominated, xiii, 594.  
 Carr, Joseph B., obit., xx, 566.  
 Carré, M., invention by, iii, 270.  
 Carriages, horseless, xx, 116.  
 Carriere, J., obit., xviii, 577.  
 Carrière, Moritz, obit., xx, 606.  
 Carriers, common, xviii, 221.  
 Carriers, mechanical, xii, 94.  
 Carrington, Col., engagement with Basutos, v, 81, 82.  
 Carroll, Anna E., obit., xix, 568.  
 Carroll, J. W. H., obit., xvi, 611.  
 Carroll, Samuel S., obit., xviii, 544.  
 Carruthers, R., obit., iii, 652.  
 Carruthers, William, xi, 48.  
 Carson City, Nev., xvi, 151.  
 Carter, B., on eye-sight, vi, 272.  
 Carter, H. A. P., obit., xvi, 667.  
 Carter, Sir J., obit., iii, 652.  
 Carter, Oscar C. S., x, 158.  
 Carter, Robert, sketch, xiv, 623.  
 Carter, Samuel P., obit., xvi, 611.  
 Carter, T. H., obit., xix, 568.  
 Carteret, Autoine, sketch, xiv, 659.  
 Carthage, Mo., xv, 121.  
 Cartter, David K., obit., xii, 575.  
 Carvalho, H. de, xi, 371.  
 Cary, J. C., obit., ix, 604.  
 Casa Graude, xiv, 17.  
 Casamajor, P., experiments by, vi, 352; viii, 12.  
 Casamicciola destroyed, viii, 285.  
 Casanova, Antonio, xi, 343.  
 Casanova, Ricardo, Archbishop, expulsion of, from Guatemala, xii, 347.  
 Casati, Capt., x, 394.  
 Case, Augusta L., obit., xviii, 545.  
 Caselli, invention by, vi, 256.  
 Casey, Elizabeth, obit., xix, 609.  
 Casey, T. L., ix, 798.  
 Cash's experiments, vi, 750, 753.  
 Cashgar, i, 776. See Kashgaria.  
 Cashmere, Maharajah of, obit., x, 658; xiv, 428.  
 Casilear, John W., obit., xviii, 545.  
 Casimir-Périer, Jean, sketch, xix, 107; ministry of, xix, 286; port. of, xix, 287; retirement of, xix, 292.  
 Casperi, K. P., obit., xvii, 587.  
 Cass, George W., sketch, xiii, 626.  
 Cassagnac, Paul de, trial for violation of press laws, ii, 305.  
 Casserly, Eugene, obit., viii, 587.  
 Cassidy, G. W., obit., xvii, 539.  
 Cassidy, Lewis C., sketch, xiv, 623.  
 Castelar, Emilio, ix, 742, 743.  
 Castella, Gen., obit., x, 658.  
 Castellani, A., obit., viii, 598.  
 Castelnau, A., obit., ii, 596.  
 Castillo, Lieut. del, xii, 315.  
 Cast-iron, sea-water on, vi, 97.  
 Castle government, ix, 376.  
 Castle, Orlando L., obit., xvii, 539.  
 Castles on the Bosphorus, i, 762.  
 Castner, Hamilton Y., xi, 536.  
 Castro, Manuel, obit., xvi, 612.  
 Caswell, A. D. D., obit., ii, 577.  
 Catacazy, M., xiii, 269.  
 Catacombs of Paris, illustration, i, 316; of Thebes, illustration, iii, 267.  
 Catalogues of stars, xiii, 56.  
 Catalyst, function of a, x, 148.  
 Catamaran, ix, 115; x, 793.  
 Catania, cyclone in, ix, 416.  
 Cataracts, in Africa, ii, 331.  
 Cat cages, ill., xx, 235.  
 Caterini, P., obit., vi, 692.  
 Cates, W. L. R., obit., xx, 606.  
 Cathartic acid, x, 299.  
 Cathcart, C. W., sketch, xiii, 627.  
 Cathedral, a floating, viii, 67.  
 Catholicism. See Roman Catholic Church.  
 Catholicos, election of a, ix, 280, 763.  
 Catholic summer school, xviii, 674.  
 Cats in cages, ill., xx, 237.  
 Catskills, height of, ix, 538.  
 Cattegat and Skager-Rack, annual loss of life in, x, 417.  
 Cattell, Alexander G., obit., xix, 569.  
 Cattle-plague, vii, 486; ix, 706.  
 Cattle diseases, xiii, 586.  
 Cattle guards, xvi, 707.  
 Cattle, improved breeds, xiv, 112; inspection, xvi, 227.  
 Cattle-raising in Arizona, xviii, 20.  
 Caucasus, exploration, xii, 313.  
 Cauchy, E., obit., ii, 596.  
 Cauer, Carl, obit., x, 658.  
 Cavagnari, L., iv, 10, 11, 13, 491.  
 Cavalier, Pierre J., obit., xix, 611.  
 Cave-drawings, xiv, 117.  
 Cave-dwellings, Buddhist, x, 38; Mexican, ix, 17; African, ix, 347.  
 Cavendish, F. C., obit., vii, 645. See Phoenix Park Murders.  
 Caventon, J. B., obit., ii, 596.  
 Caves in Austria, xii, 313.  
 Caves of the troglodytes, xiii, 33.  
 Cavour, Count, on the Roman question, vii, 627.  
 Cayley, Arthur, obit., xx, 606.  
 Cazauran, A. R., sketch, xiv, 623.  
 Cazot, T. J. J., sketch, iv, 386.  
 Ceará Breakwater, xii, 260; illustrations, 260.  
 Cecil, Lord Robert. See Salisbury.  
 Cecil, Lord, sketch, xiv, 659.  
 Cedar Creek, battle of, x, 428.  
 Cedar Rapids, xv, 122.  
 Celernius Vitalis, inscription by, ix, 22.  
 Celestial photography, xix, 53.  
 Celibacy, priestly, abolished by Old Catholics, iii, 669.  
 Cellier, A., obit., xvi, 668.  
 Celluloid, iii, 459.  
 Cellulose, production of, i, 97.  
 Celtic earthworks, xiii, 24.  
 Cemeteries, bill in Chili to secularize, viii, 122; early Christian, at Alexandria, xii, 21. See Burials.  
 Censorship of the press, ix, 708.  
 Census of the United States, v, 83; vi, 848; with maps, showing density of population, and of foreign and colored population, vii, 815; of 1890, xiv, 214, 806; xv, 821; xvi, 840; xvii, 759. And see the articles on the States in vol. xv.  
 Centaurs, peculiar representations of, ix, 25.  
 Centennial Exposition: centennial celebrations, xiii, 670. See Exhibition, Centennial.  
 Centennial of admission in Nashville, xix, 737.  
 Central America, i, 89; v, 85; hidden tribes in, v, 298; proposed



- union, viii, 97; union decree, x, 464; xii, 348; union movement, xiii, 255; xiv, 610; xx, 347.
- Central America, loss of the, xi, 44.
- Central Falls, R. I., xi, 685.
- Cephalissus, discoveries at, xiii, 26.
- Ceramic wares, v, 91.
- Cereals, United States, production, vii, 85; commerce in, vii, 112.
- Cerebral hemispheres, lesions of, ix, 661.
- Cerebral localization, vii, 688; viii, 98.
- Cerebrum, effects of extirpation of, in rabbits, ix, 653.
- Cerigo, temple at, xiii, 27.
- Cernagora, viii, 549.
- Cerruti, Signor, xi, 192, 455.
- Cervical ganglion, function of, xii, 671.
- Cesnaune, E., obit., i, 630.
- Cetewayo, King, iv, 121; restoration of, vii, 85; portrait, *ibid.*; defeat, viii, 91; ix, 114; x, 136; obit., ix, 615.
- Ceylon, xv, 404; xvi, 343; xvii, 325.
- Cézaune, E., obit., i, 630.
- Chabrier, Emmanuel, obit., xix, 611.
- Chacornac, Mr., xi, 56.
- Chadbourne, Paul A., sketch, with portrait, viii, 102.
- Chadhelism, x, 316.
- Chadwick, Sir E., obit., xv, 676.
- Chaffanjon, M., xii, 314.
- Chaffee, Jerome B., obit., xi, 668.
- Chain, elastic, xvi, 705.
- Chaix d'Est Ange, G. L. V. A. C., sketch, i, 89.
- Chaka, king of Zulus, iv, 352.
- Chalchualpa, engagement at, x, 466.
- Chaldean cylinder, xiv, 23.
- Chaletenango, capture of, x, 467.
- Challen, J., obit., iii, 634.
- Chalmers, explorations, v, 135.
- Chalybeate springs, x, 579.
- Cham (A. de Noé), obit., iv, 698.
- Chamber of Commerce, Cincinnati, view of, xiv, 674.
- Chamberlain, D. H., claim as Governor of South Carolina, i, 725.
- Chamberlain, Joseph, sketch, v, 85; xi, 399, 400, 401.
- Chamberlain, J. A. D., observations by, vi, 401.
- Chamberlain, J. P., obit., iii, 634.
- Chamberlain, Sir N., iii, 4.
- Chamberlain, N. B., obit., iii, 634.
- Chamberlin, E. M., obit., xvii, 539.
- Chamberlin, T. C., x, 404.
- Chambers, M., obit., v, 591.
- Chambers, W., sketch, viii, 103.
- Chambers, W. H., obit., vi, 679.
- Chambord, Count de, speech of, ii, 205; celebration, iv, 394; sketch, with portrait, viii, 103.
- Chamois, illustration, i, 739.
- Chamond, C., invention, i, 519.
- Champerico, growth of, viii, 427.
- Champfleury, sketch, xiv, 659.
- Champion Hill, battle of, x, 425.
- Champaign, Ill., xix, 136.
- Chance, experiments by, viii, 115.
- Chancellorsville, battle of, xi, 416.
- Chandler, J. R., obit., v, 591.
- Chandler, P. W., sketch, xiv, 623.
- Chandler, Ralph, sketch, xiv, 623.
- Chandler, S. C., Jr., observations by, iii, 37, 38; vii, 38; ix, 54; x, 55; xii, 35.
- Chandler, W. E., portrait, vii, 800.
- Chandler, Z., sketch, iv, 129.
- Changarnier, Gen., obit., ii, 596.
- Channing, W. H., obit., ix, 604.
- Chanute, O., xi, 46.
- Chanzy, A. E. A., sketch, with portrait, viii, 107.
- Chapin, Aaron L., obit., xvii, 539.
- Chapin, Dorcas, obit., xi, 668.
- Chapin, Edwin H., sketch, v, 85.
- Chapin, H., obit., iii, 634.
- Chapin, John H., obit., xvii, 539.
- Chaple y del Corral, J. F., obit., xi, 712.
- Chaplin, Jeremiah, obit., xi, 668.
- Chapman, F., obit., xvi, 612.
- Chapman, Henry, obit., xvi, 612.
- Chapman, J. G., sketch, xiv, 624.
- Chapman, O. W., obit., xv, 639.
- Chapu, H. M. A., obit., xvi, 668.
- Char Aimak, or Four Tribes, x, 8.
- Charcot, J. M., obit., xviii, 577.
- Charceton, J. J. V. de, obit., iii, 652.
- Charities, report on, in Massachusetts, ii, 486; in New York, iv, 672; organization, x, 145; xiii, 134; in Japan, xviii, 417; street beggars, x, 148.
- Charkhi, Gen., xiii, 6.
- Charles I, Prince of Roumania, iii, 739; sketch, ii, 87.
- Charles II, of Parma, obit., viii, 598.
- Charles of Hesse, obit., ii, 596.
- Charleston, S. C., view of, i, 723; x, 737; xi, 163; earthquake in, xi, 300; xiv, 142; water, xix, 774.
- Charlottesville, xv, 122.
- Charlottesville, xiv, 143.
- Charnay, D., explorations by, v, 298; vii, 337.
- Charpentier, L. E., obit., xv, 676.
- Charrier, Henri, xi, 343.
- Charts, astrographic, xix, 53.
- Chase, Benjamin, sketch, xiv, 624.
- Chase, Harry, prize to, x, 367.
- Chase, N., obit., v, 639.
- Chase, Pliny Earle, obit., xi, 668; observations by, iii, 39.
- Chase, Thomas, obit., xvii, 539.
- Chasles, M., obit., v, 599.
- Châteauvillain, affair at, xi, 358.
- Chatham, new docks at, illustration, i, 364.
- Chatrian, A., obit., xv, 676.
- Chattanooga, battle of, x, 426; xiii, 160.
- Chatterton, S. S., obit., i, 614.
- Chaul Mong, King of Anam, x, 32.
- Chavannes, Puvis de, ix, 245; x, 358; xi, 275, 279, 343.
- Chavcau, P. J. O., obit., xv, 676.
- Chavée, H. J., obit., ii, 597.
- Chazal, Baron E., obit., xvii, 588.
- Cheatham, B. F., obit., xi, 668.
- Cheese-poisoning, xii, 106.
- Cheever, B. W., sketch, xiii, 626.
- Cheever, G. B., obit., xv, 639.
- Chefkin, C. V., i, 322.
- Cheik Said, bought by Germany, ix, 365.
- Chelius, M. J., sketch, i, 89.
- Chelmsford, Baron, obit., iii, 652.
- Chelsea, xi, 163.
- Chemical processes, new, vi, 94; viii, 11; x, 152; xii, 106; analysis of foods, viii, 34; nomenclature and philosophy, viii, 110; ix, 118; x, 148; xi, 141; new substances, ix, 425, 808-809; x, 153; xii, 104.
- Chemistry, industrial, analytic, synthetic, vegetable, etc., development and prospects, in every volume.
- Chemists, association of official, ix, 130; eminent, xi, 136-148.
- Chenery, T., obit., ix, 615.
- Cheney, Benj. P., obit., xx, 566.
- Cheney, Margaret S., experiments by, ii, 502.
- Cheney, Person C., i, 588, 589.
- Cheney, Ward, obit., i, 614.
- Chenu, J. C., obit., iv, 698.
- Cherau, capture of, x, 429.
- Chernoff, M. D., ix, 473.
- Cherokee outlet, xv, 697.
- Chesapeake and Delaware Canal, xvii, 225.
- Chesapeake and Ohio Canal, xiii, 516; xiv, 532; xvi, 494.
- Chesbrough, Ellis Sylvester, obit., xi, 669.
- Chesney, C. C., obit., i, 630.
- Chesney, Sir G. T., obit., xx, 606.
- Chester, Albert T., obit., xvii, 540.
- Chester, Pa., xix, 136.
- Chester, T. Morris, obit., xvii, 540.
- Chesterhope, Roman building in, ix, 22.
- Chetwood, George R., obit., xii, 575.
- Chevalier, M., sketch, iv, 137.
- Chevreur, Michel Eugène, sketch and port., xiv, 134.
- Cheyenne, xiii, 161; State House at, illustration, 848.
- Chicago, xi, 163; xviii, 398; Anarchist riots in, xi, 12; before the fire, illustration, i, 392; xiv, 419; water, xix, 775.
- Chicago "Times," the, ix, 612.
- Chickamauga, xviii, 425.
- Chickering, C. F., obit., xvi, 612.
- Chicopee, Mass., xii, 120.
- Childlaw, B. W., obit., xvii, 540.
- Chigi, Cardinal, death of, x, 713.
- Chihuahua cathedral, xvi, 523.
- Chilcott, G. M., sketch, vii, 109; obit., xvi, 612.
- Child, Lydia M., sketch, v, 96.
- Child, T., obit., xvii, 588.
- Childers, H. C. E., sketch, v, 97; x, 446.
- Childers, R. C., obit., i, 630.
- Children, labor of, i, 510; iii, 524; iv, 659; vi, 575; ix, 571.
- Childs, C. C., obit., xv, 640.
- Childes, George W., obit., xix, 569.
- Chili, in every volume; map, iv, 139; guano in, i, 104; mining industries, iii, 95; view in, ii, 99; navigation law, iii, 95; conflict between church and state, iii, 96; Patagonian dispute with Argentine Republic, iii, 96; iv, 139; commercial relations with U. S., vi, 103; Peruvian bonds, vi, 104; the Araucanians, vii, 99; new pass over the Andes, discovered, viii, 123; new provinces in, ix, 130; xii, 315; government of, 131; great guano consignment, x, 164; nitrate-of-soda production, x, 164; claims against, x, 164; attempt on the President's life, x, 165; civil-marriage law in, x, 164; condors in, x, 165; contract with Peru, xii, 114; boundary treaty with Argentine Republic, xviii, 16; treaty with Bolivia, xviii, 96; resumption of specie payments, xx, 129.

- Chilian Claims Commission, xviii, 144.
- Chilian War, the, iv, 727; v, 98, 625; vi, 734, 737, 738; vii, 681; inquiry as to U. S. action, vii, 698; viii, 158; terms of treaty, viii, 121; peace, viii, 64; ix, 649; President Arthur on, viii, 64; the guano contracts, viii, 628; x, 164; American trade commission, x, 164.
- Chilliothe, Ohio, xvii, 109.
- Chimborazo, ascent of, ix, 541; view of, i, 241.
- Chimes, mechanical, x, 611.
- Chimney, high, repairing, xv, 286.
- China, in every volume; map of Cochin-China, i, 109; maps, i, 109; great wall of, illustration, ii, 103; ix, 141; Margary murder, i, 107; views in, illustrations, i, 110, 111; ii, 100, 101, 103; iii, 98, 100; iv, 146; ix, 139, 142; dispute with Germany, i, 109; trouble with Portugal, i, 109; v, 103; treaty with Portugal, xii, 117; with Kashgaria, i, 109; iii, 96; see Kashgaria; rebellion, i, 110; iv, 145; attacks on Christians, i, 110; iii, 101; xi, 155; new policy toward them, xii, 117; new ports opened to commerce, i, 110; ii, 102; first line of railroad in, i, 3; ii, 102; famine, ii, 100; iii, 98; religious war in, ii, 101; attempt to convert Mohammedans, iv, 146; troubles with Russia, iii, 97; iv, 144; v, 101; vi, 107; ix, 714; negotiations with, xii, 118; opium trade, iii, 109; vi, 109; x, 174; first steam cotton-mill, iv, 143; diamonds in, iv, 143; insurrection, iii, 101; iv, 143, 144; restoration of Kulja, iv, 144; v, 101; vi, 107; diplomatic service, iv, 46; statistics of missions in, iv, 147; x, 169; trouble with Spain, v, 103; relations with other powers, v, 104; treaties with United States, v, 105; death of the regent, vi, 107; riots in Canton, viii, 128; floods, viii, 128; political crisis, ix, 137; British occupation of Port Hamilton, xi, 155; xii, 118; war with France, ix, 137; x, 170; see also Tonquin; treaties with France, xi, 154; xii, 117; representation at the Vatican, xi, 154; gold-mines, x, 169; newspapers, x, 169; suzerainty over Indian states, xii, 383; anti-foreign movement in, xviii, 149; anti-Christian cartoons, xx, 139, 140; capture of Niuchuang, xx, 135; Franco-Chinese treaty, xx, 142; siege of Wei-Hai-Wei, xx, 133; treaty of Shimoneseiki, xx, 136; the Japanese in Manchuria, xx, 131.
- China Merchants' Steam Navigation Company, vii, 101.
- Chineha islands, ill., i, 662.
- Chinese, the, in United States: in California, i, 84; ii, 80; iii, 71, 74, 76; iv, 107; v, 71, 73, 78; viii, 78; ix, 195; xi, 126; riot against, in Colorado, v, 120; in Nevada, iv, 657; in Oregon, iii, 676; iv, 712; in Wyoming Territory, x, 787; in Washington Territory, xi, 836; embassy of, iii, 810; immigration to United States, vii, 387; ix, 195; transit across, vii, 391; Frelinghuysen's letter, vii, 192; alleged letter of Garfield, v, 576; letter of G. F. Seward, i, 231; citizenship question, ix, 427, 762; x, 787; President's message on, xi, 254; excluded from Ecuador, xiv, 281; expulsion act of the United States, xviii, 739.
- Chinese, the, troubles with Russia, Portugal, and Spain, v, 101; threatened war with Russia, vi, 107; ix, 714; anti-European riots, viii, 128; superstition of, vii, 101; in Brazil, vii, 70; Cuba, iv, 822; in Australia, ii, 51; v, 37; in British Columbia, x, 104; in Tonquin, x, 24; excluded from Costa Rica, xii, 211; from Colombia, xii, 140; from United States, xvii, 192; xviii, 244.
- Chinese flower-boat, i, 110.
- Chinese fort, illustration, ix, 139.
- Chinese indemnity fund, x, 241.
- Chinese labor and immigration, xiii, 62, 119, 156, 226, 838.
- Chin expedition, the, xiv, 430.
- Chiniquy, Father, ix, 676.
- Chipman, J. L., obit., xviii, 545.
- Chippewa Falls, Wis., xvi, 151.
- Chisholm, Judge, murder, ii, 528.
- Chisholm, Mrs. C., obit., ii, 597.
- Chisholm, W. S., obit., xv, 640.
- Chitral expedition, xx, 4.
- Chittenden, Henry A., obit., xx, 566.
- Chittenden, R. H., investigations by, v, 92; vi, 95; vii, 90, 690; viii, 119, 635; x, 694; xii, 675.
- Chittenden, S. B., sketch, xiv, 624.
- Chivington, John M., obit., xix, 569.
- Chlorates, improvement in manufacture of, vii, 95.
- Chlorine, in water, i, 99.
- Chloroform, xii, 106.
- Chlorohydric acid, i, 100.
- Chlorophyl, physiological function of, vi, 110; ix, 128; x, 153.
- Chlorotrihydronide, xii, 769.
- Choate, Joseph H., xix, 532.
- Cholera, in Asia, i, 44; spread by pilgrims, iv, 494; in Egypt, viii, 298; ix, 143; in France, ix, 345; in Corea, xi, 271; in Japan, xi, 458; germs of, ix, 143, 497; epidemics of, x, 796; inoculation for, 797; in Chili, xii, 114; study of causes and treatment, xi, 156; xiii, 151, 357; in 1892, xvii, 95. See also Epidemic Diseases, vii, 286; viii, 317; Zymotic Diseases, x, 796, *et seq.*, and Micro-organisms.
- Cholesterolin, xii, 103.
- Choline, x, 299.
- Cholula, mound of, ill., ix, 17.
- Chopin, xi, 481.
- Choppin, S. P., sketch, v, 106.
- Cho-Sen. See Corea.
- Choubly, experiments, xi, 534.
- Chouteau, B., sketch, xiii, 623.
- Chretien, C. P., obit., xviii, 577.
- Christendom, reunion of, xix, 693.
- Christian Churches, xii, 118; xv, 116.
- Christian Connection, i, 113; ii, 103; iii, 101; vii, 102; xi, 158; xv, 116.
- Christian convention, xix, 134.
- Christian IX of Denmark, iv, 311.
- Christian IX Land, x, 398.
- Christian Union, i, 113; iii, 102.
- Christian, William Henry, obit., xii, 575.
- Christianey, I. P., obit., xv, 640.
- Christian Endeavor, xv, 116; xvi, 145; xvii, 100; xviii, 150; United Society of, xix, 135; young people's societies of, xx, 142.
- Christiani, experiments by, ix, 653.
- Christianity, growth of, viii, 128; introduction of, commemorated, xiii, 728; Society for Promoting, 709.
- Christians, massacre of, in Tonquin, x, 31; persecution in China, i, 110; iii, 101; xi, 156; in Turkey, xix, 745.
- Christianstad, illustration, i, 737.
- Christides, obit., ii, 597.
- Christie, Daniel M., obit., ii, 577.
- Christie, Samuel T., obit., i, 630.
- Christie, W. H. M., observations by, vii, 33; viii, 26.
- Christian, Ewan, obit., xx, 606.
- Christina Maria, dowager-Queen of Spain, iii, 102.
- Christman, Joseph A., sketch, xiii, 627.
- Christophe, E., obit., xvii, 588.
- Chromium compounds, iii, 85.
- Chronology, prehistoric, xii, 14.
- Chrysophan, xi, 290.
- Chrystal, G., x, 46.
- Chubb, T., obit., xv, 640.
- Chufas, iii, 472.
- Chun, Prince, x, 28; obit., xvi, 668.
- Chung Kwoh. See China.
- Chunder Sen, iv, 90, 91; vi, 65.
- Church, Albert E., obit., iii, 634.
- Church Army, the, ix, 11.
- Church, Pharcellus, obit., xi, 672.
- Church, R. W., obit., xv, 676.
- Chureb, S. E., death of, v, 569.
- Church Congress, xiii, 19; xiv, 14; xv, 12; xvi, 12; of Anglican Churches, xx, 19.
- Church Union, xi, 17; English, xvi, 13.
- Church and State, relations of, ix, 13, 22; in Chili, ix, 135; x, 164; in Russia, ix, 278; in Ecuador, ix, 281; in France, x, 712; in Italy, xi, 455; xii, 399. See Disestablishment, and Anglican Churches.
- Church defense institution, xiv, 13; xviii, 13.
- Church History, American Society of, xvii, 100.
- Church of God, iii, 50; xiii, 77; xiv, 69.
- Church of Jesus, the, Mexican Protestant Episcopal, iv, 611.
- Church of Scotland, xviii, 656.
- Church, property confiscated, xiii, 831.
- Churches: burials act, see Burial; liability of property, see Bishops; church and state, ii, 21, 22; iii, 14, 96; vi, 18; vii, 13, 18; heresy trials, i, 672; ii, 643; iii, 693, 698, 700; v, 634; vi, 767, 769; Protestant Episcopal appellate court proposed, vi, 773; patronage question, vii, 19; question of



- union, i, 22; iii, 14; vii, 587; viii, 658; of fellowship, i, 496; vi, 521; viii, 654; proposed revision of creeds, iii, 133, 134; v, 133; vi, 135; viii, 657, 660; of the Prayer-Book, viii, 671, 672; Anglican, on confession, iii, 15; Reformed, on secret societies, viii, 682; United Presbyterian, on instrumental music, vi, 766, 769, 770; viii, 656, 660; on dancing, i, 668; iv, 734; Lutheran, on predestination, vi, 521; ritualism in Anglican, see Ritualism; use of "Rev." by dissenters, see Kect; doctrinal qualifications for theological professorships, vii, 122; relation of Roman Catholic to European governments, see Papacy; monastery in Scotland, i, 706; decrees against religious orders, v, 628, 658; insult to Catholics in France, vii, 324; disturbances in Mar-seilles, iii, 349; building-fund commission, xii, 706; work in Mexico, xii, 706; documents affecting the Reformed, xii, 709; Unitarian, xii, 774; free and open, xviii, 13. See also Church and State, Disestablishment, and Germany.
- Churches in Scotland, union of, xviii, 196.
- Churches, Reformed, xviii, 665.
- Churchill, Henry A., obit., xi, 712.
- Churchill, Lord Randolph Henry Spencer, ix, 375; x, 453; sketch, 449; obit. and port., xx, 606.
- Churchill, T. J., v, 26.
- Cialdini, Enrico, obit., xvii, 588.
- Ciamician, experiments, v, 95.
- Cibot, F. B. M. E., obit., ii, 597.
- Cider, experiments on, x, 159.
- Cigar law, the tenement-house, ix, 431.
- Cilley, Joseph, obit., xii, 576.
- Cimon, wall of, x, 36.
- Cinchona-Bark, cultivation of, viii, 427; in Bolivia, xi, 91; in Colombia, vii, 105; in Ecuador, viii, 289; xii, 69, 140; discovery and name of, vii, 105; xiii, 97; xiv, 80. See Peruvian Bark.
- Cincinnati, xi, 164; fountain at, see Kraling, i, 442; riots in, ix, 650; election, x, 204; illustrations, i, 647, 648; water, xix, 775.
- Cincinnati, Society of the, xix, 643.
- Cineinatics, experiments in, i, 515.
- Ciparin, Timoteo, obit., xii, 625.
- Cipher code-system, for astronomical discoveries, x, 55.
- Cipher telegrams, the, iii, 717.
- Cipriani, xi, 454.
- Circulation of animals, action of inorganic substances on, vi, 99; in the brain, vii, 691; contraction of the ventricle, *ibid.*; circulatory system, the, ix, 654; x, 692; xii, 673; of the blood, xiii, 691; xiv, 704; xv, 721; xviii, 627; of money in the United States, xvi, 850.
- Circumnutation, v, 107.
- Cissey, E. L. C. de, obit., vii, 645.
- Cisterns, v, 367.
- Cities, American, recent growth of, xi, 159, *et seq.*; xii, 118, *et seq.*; xiii, 158; xiv, 141; xv, 118; xvi, 145; xvii, 101; xviii, 151; xix, 135; statistics of, see article United States Census; manufactures, xx, 440.
- Cities, population, i, 239; ii, 260.
- Citric acid on minerals, v, 93.
- Civilization, archaic, xiii, 25.
- Civil-rights act, vii, 459; provisions of, vii, 695; cases, vii, 102; opinions on, viii, 129.
- Civil service, instruction in languages for, ii, 368; President Hayes on, ii, 665; v, 641.
- Civil-service reform, President Arthur on, vi, 785; viii, 164; bill on, in Congress, viii, 165; text of, viii, 183; provisions of on political assessments, vii, 695; see Reform, etc., viii, 682; in New York, viii, 566; ix, 690; x, 639, 759; law, xi, 474, 826; Commission, United States, xiii, 380, 772; in China, xiv, 138.
- Cladel, Leon, obit., xvii, 588.
- Clæsson, experiments, viii, 112.
- Claffin, A., obit., xv, 640.
- Claffin, Horace B., obit., x, 646.
- Clague, pictures of, iv, 532.
- Clairin, George, x, 362; xii, 275.
- Clam, Count R., obit., xvi, 668.
- Clam Gallas, Count, obit., xvi, 668.
- Clamegeran, M., x, 376.
- Clam-Martinitz, Count Heinrich, obit., xii, 626.
- Clauricarde, Marchioness, obit., i, 631.
- Clanricarde, Lord, xii, 339.
- Clapp, Asa W. H., obit., xvi, 612.
- Clapp-Griffiths steel process, x, 574.
- Clapp, William W., obit., xvi, 612.
- Clarendon, Earl of, x, 2.
- Clarionet Player, x, 613.
- Clark, cotton-cleaner of, vi, 265.
- Clark, Alexander, obit., xvi, 612.
- Clark, Alvan, sketch, xii, 137.
- Clark, Alvan, Jr., ix, 53; x, 52, 54.
- Clark, Sir A., obit., xviii, 577.
- Clark, Charles B., obit., xvi, 613.
- Clark, Daniel, obit., xvi, 613.
- Clark, J. W., invention by, x, 583.
- Clark, Myron H., obit., xvii, 540.
- Clark, Patrick, obit., xii, 576.
- Clark, Rufus W., obit., xi, 670.
- Clark, Sarah, obit., vi, 680.
- Clark, Silas M., obit., xvi, 613.
- Clark, Simon T., obit., xvi, 613.
- Clark, Thomas, obit., i, 631.
- Clark, Walter, ix, 653.
- Clark, William A., obit., xii, 576.
- Clark, William S., obit., xi, 670.
- Clarke, C. Cowden, obit., ii, 597.
- Clarke, Col., in Basutoland, x, 84.
- Clarke, Edward H., obit., ii, 577.
- Clarke, F. W., investigations by, vi, 42; vii, 89; x, 149, 404.
- Clarke, Hyde, obit., xx, 608.
- Clarke, J. F., sketch, xiii, 627.
- Clarke, Joseph T., ix, 25.
- Clarke, William T., obit., viii, 587.
- Clarkson, R. H., obit., ix, 604.
- Clarksville, xi, 165.
- Claude, sale of works of, x, 361.
- Cloughton, T. L., obit., xvii, 588.
- Clausen, H. N., obit., ii, 597.
- Clay, Clement C., sketch, vii, 102.
- Clay, Henry, his policy, x, 433.
- Clay and Randolph case, vii, 198.
- Clayden, A. W., xi, 542.
- Claypole, observations by, v, 36.
- Clayton-Bulwer Treaty, vii, 813; viii, 278. See Panama Canal, vi, 714.
- Clayton, John M., sketch, xiv, 624; assassination of, xiv, 36; xv, 23.
- Clearing-houses. See Finances and Financial Review.
- Clemandot, M., ix, 472.
- Clemenceau, M., ix, 344; x, 375.
- Clement, John, obit., xix, 570.
- Clements, invention, iv, 638.
- Clemmer, Mary, obit., ix, 604.
- Cledenin, D. R., obit., xx, 566.
- Cleopatra's Needle, iii, 283; vi, 659.
- Clerical laws in Prussia, v, 639.
- Clésinger, J. B. A., obit., viii, 598.
- Clesse, Antoine, sketch, xiv, 659.
- Clève, discovery by, iv, 137; experiments, viii, 117; x, 156.
- Cleveland, Ohio, xi, 165; water, xix, 775.
- Cleveland, Tenn., xiv, 143.
- Cleveland, C. F., obit., xii, 576.
- Cleveland, E. H., obit., iii, 634.
- Cleveland, Grover, sketch and portrait, vii, 611; ix, 145; steel portrait, ix, front; letters of acceptance, vii, 610; ix, 148; letter on the silver question, x, 755. See Congress and United States.
- Cleveland, J. F., obit., i, 614.
- Cleveland, M., statue of, xii, 280.
- Clifford, Sir A., obit., ii, 597.
- Clifford, J. H., sketch, i, 114.
- Clifford, Nathan, sketch, vi, 111.
- Climate, influence of forests on, xi, 544.
- Climatic changes, xv, 539.
- Clinch, C. P., obit., v, 591.
- Clinchant, Gen., obit., vi, 692.
- Clinton, A., obit., iii, 634.
- Clinton, Iowa, xvii, 110.
- Clinton, J. J., sketch, vi, 112.
- Clinton, Mo., xv, 123.
- Cloez, Prof., experiments, iii, 91.
- Closson, M., process for obtaining magnesia, vi, 94.
- Clothes-line prop, xvi, 705.
- Clothing materials, improved preparation of, v, 89.
- Clôture, the, vii, 203, 364; Gladstone's resolutions, vii, 206; in France, vii, 208.
- Clouds, genesis of, see Fogs and Clouds, v, 275; height of, x, 583; observations on, xi, 542; nomenclature and iridescence of, xii, 489; auroral, xii, 490; distribution, motion, and height of, xii, 490; xiii, 532; xiv, 546; xv, 534; xvii, 449; xx, 476.
- Cloué, Vice-Admiral, v, 281.
- Clough, Anne J., obit., xvii, 588.
- Clubs, prominent, of England, France, and America, ix, 150.
- Coal, ii, 103; spontaneous combustion of, i, 93; in China, iii, 101; monopoly, iii, 619; commerce in, iv, 173; mining with caustic lime, vii, 104; bituminous, in United States, vii, 103; in Canada, xviii, 266; in Missouri, xviii, 498; in Colorado, ix, 159; Alabama, ix, 7; in Mexico, ix, 493; in Washington Territory, x, 780; in Asia, xi, 374; discovered in Colombia, xii, 140; palace, xv, 140. See articles on the coal-producing States.
- Coal-gas, injury to books by, v, 87.
- Coal-strike, xviii, 328.
- Coal-tar colors, x, 158.
- Coan, Titus, obit., viii, 588; ix, 275, 389.

- Coango River, exploration, v, 294.  
 Coanza River, exploration, v, 294.  
 Coast survey, xvi, 881.  
 Coates, Benjamin, obit., xii, 577.  
 Coates, Reynald, obit., xi, 671.  
 Cobalt, magnetic, i, 250; bronze, ix, 478.  
 Cobb, Carlos, obit., ii, 577.  
 Cobb, Rufus W., ix, 16.  
 Cobb, Stephen A., obit., iii, 634.  
 Cobb, Sylvanus, Jr., obit., xii, 577.  
 Cobbett, J. M., obit., ii, 597.  
 Cobden, Mrs., obit., ii, 597.  
 Coburn, J., obit., xv, 640.  
 Coburn, Nathan P., obit., xix, 570.  
 Coca-leaf, xi, 91, 752.  
 Cocaine, hydrochlorate of, ix, 271.  
 Cocarde forgeries, the, xviii, 323.  
 Coehery, L. A., sketch, iv, 386.  
 Cochín-China, insurrection in, x, 119; French in, xii, 306; xv, 334.  
 Cochita, ruins at, xiv, 18.  
 Cockburn, Lord, v, 112.  
 Cocks, William A., sketch, i, 238.  
 Cockshott and Jowett, alloy produced by, viii, 525.  
 Cocoa, xii, 231; in Ecuador, viii, 289; xiii, 287.  
 Cocoeine, ix, 271.  
 Cocoa-matting, viii, 97.  
 Codeine, experiments with, vii, 87.  
 Codrus, temple of, x, 36.  
 Coe, Israel, obit., xvi, 613.  
 Coelho, J. M. L., obit., xvi, 668.  
 Coercion bills, Gladstone's, vii, 204; act passed, xii, 343. See Ireland.  
 Cœur d'Alene, desire of Montana to annex, xi, 577.  
 Coffee, increasing demand, i, 80; adulteration, i, 96; duty on, in Austria, iii, 42; culture in Brazil, iii, 62; vi, 70; parasite of, iii, 62; rise in, viii, 71; making, illustration, xii, 651; plantation, a large, xiv, 409; plantations, xvii, 330; planting, xiii, 254.  
 Coffin, J. H. C., obit., xv, 640.  
 Coffin, Levi, obit., ii, 577.  
 Coffin, Robert Barry, obit., xi, 671.  
 Coffin, Roland F., sketch, xiii, 627.  
 Coffin, W. R., xi, 346.  
 Cogalniceanu, M., obit., xvi, 668.  
 Coggia, discoveries by, ii, 46; iii, 36; iv, 51; v, 34.  
 Cogswell, Elliot C., obit., xii, 577.  
 Cogswell, P. B., obit., xx, 566.  
 Cogswell, William, obit., xx, 567.  
 Cohen, Judith, x, 606.  
 Cohoes, N. Y., xii, 120.  
 Coinage, ix, 216, 782; United States, xiii, 786; xiv, 808; free, xvi, 228, 849; xvii, 757. See also Finances of U. S., x, 246.  
 Coins, Anglo-Saxon, excavated in Rome, ix, 27.  
 Coir, xiii, 247.  
 Coit, Col. A. B., port., xx, 513.  
 Coit, Henry A., obit. and port., xx, 567.  
 Coit, Thomas W., obit., x, 647.  
 Cojutepeque, capture of, x, 467.  
 Coke, treatment of, viii, 372.  
 Colahan, John B., obit., xvii, 540.  
 Cola-nuts, x, 299.  
 Colbert, Commander, x, 119.  
 Colburn, Jeremiah, obit., xvi, 613.  
 Colburn, J. E., obit., iii, 634.  
 Colehicin, x, 299.  
 Colcock, W. F., sketch, xiv, 624.  
 Cold, artificial, v, 88; as a chemical agent, v, 93.  
 Cold Harbor, battle of, x, 427.  
 Cole, Henrietta H., xii, 650.  
 Cole, Joseph F., obit., xvii, 540.  
 Cole, Vicat, obit., xviii, 577.  
 Coleman, L., obit., vii, 635.  
 Coleman, W. T., obit., xviii, 545.  
 Colenso, J. W., sketch, viii, 135.  
 Coleridge, Sir J. T., sketch, i, 114.  
 Coleridge, John Duke, obit., xix, 611.  
 Coles, A., obit. and port., xvi, 613.  
 Colet, Louise R., sketch, i, 114.  
 Colfax, Schulyer, sketch, x, 175.  
 Colfax, Wash., xvi, 151.  
 Colladon, Daniel, his drill, vi, 820; obit., xviii, 577.  
 College-discipline, iv, 842.  
 Collateral Inheritance tax, xix, 454.  
 Collegiate Reformed Church in New Jersey, 250th anniversary of, iii, 720.  
 Collett, Mrs. J. C. W., obit., xx, 608.  
 Colley, the, ix, 260.  
 Colley, Sir G. P., sketch, v, 80.  
 Colliam, Victor, obit., xviii, 545.  
 Collier, John, picture by, x, 364.  
 Collier, John P., obit., viii, 598.  
 Collier, R. L., obit., xv, 641.  
 Collier, Sir Robert, obit., xi, 712.  
 Collier, T. S., obit., xviii, 545.  
 Collin, Edward, obit., xi, 713.  
 Collin, John F., sketch, xiv, 624.  
 Collin, Raphael, x, 358; xi, 43.  
 Collings, Jesse, xi, 399-401.  
 Collins, C. S., obit., xiv, 624.  
 Collins, E. K., obit., iii, 634.  
 Collins, Frances, obit., xi, 713.  
 Collins, Frederick, obit., xvii, 540.  
 Collins, Jennie, obit., xii, 577.  
 Collins, Mortimer, sketch, i, 114.  
 Collins, Rebecca, obit., xvii, 540.  
 Collins, R. H., sketch, xiii, 628.  
 Collins, T. W., sketch, iv, 147.  
 Collins, W. W., obit., xiv, 163.  
 Collisions, marine, viii, 136.  
 Colomb, Gen., obit., xi, 713.  
 Colombia, in every volume; map, iii, 106; views in, i, 115; ii, 107; revolutionary outbreaks, i, 118; xx, 143; ii, 108; iv, 149; v, 116; ix, 156; x, 179; xi, 192; boundary dispute with Costa Rica, v, 113; xi, 192; steamship lines, vi, 116; railways, vi, 116; vii, 106; ix, 155; x, 179; quinine product, vii, 105; newspapers, ix, 153; alcohol monopoly, xi, 190; description of Bogotá, xi, 192; discovery of coal and phosphates, xii, 140; emerald-mines, x, 179; diseases, xii, 140; English in, xii, 140; Panama Canal, see Panama.  
 Colon-Aspinwall, burned, x, 179.  
 Colonia powder, x, 345.  
 Colonial Dames of America, Society of, xix, 640.  
 Colonial extension, movement for, of European nations, viii, 31.  
 Colonial Wars, Society of, xix, 637.  
 Colonies, British, viii, 405; table of, ix, 381; x, 460; federation of, ix, 380, 381; x, 57; Portuguese, viii, 650; French and English government of, ii, 14; Bismarck's theory of, x, 143; French, xi, 360.  
 Colonization, xiii, 255; German, 127.  
 Colorado, admitted as a State, i, 118, constitution, i, 118, *et seq.*;
- mines of, i, 121; iii, 112; iv, 154; v, 119; viii, 143; irrigation, iii, 111; iv, 151; ix, 158; xii, 142; mineral springs, iii, 114; Indians in, iv, 150; v, 116; vi, 117; outbreak of Utes, xii, 143; suffrage question, iv, 152, 153; growth of Leadville, iv, 156, 161; railroad contests, iv, 158, 159; anti-Chinese riot in Denver, v, 120; coal, iron, and petroleum, vi, 118; population, xv, 152; Italian indemnity claims, xx, 144; The new Capitol, xx, 145. Statistics, government, elections, etc., under Colorado in each volume.  
 Colorado River, navigation of the, xviii, 177.  
 Coloration of animals, xii, 670.  
 Color-blindness, report on, iii, 526.  
 Colored men, convention of, xiv, 533, 791.  
 Color-hearing. See Hearing.  
 Color-sensations, ix, 657.  
 Coloring principle, a new, vi, 97.  
 Colors, for cloth, v, 90; permanence of, ix, 124; of chemical compounds, ix, 119; coal-tar, x, 158; new coloring matters, xi, 139; xii, 105.  
 Colquitt, A. H., Governor of Georgia, charges against, iii, 367-369.  
 Colquitt, Alfred H., obit., xix, 570.  
 Colson and Gauthier, xii, 107.  
 Colt, John, obit., ii, 577.  
 Colton, Joseph H., obit., xviii, 545.  
 Colton, J. S., obit., iii, 635.  
 Columbia, capture of, x, 429.  
 Columbia River, improvements of, v, 614; x, 676; jetties, xvii, 255.  
 Columbia, S. C., xv, 123.  
 Columbia, Pa., xviii, 156.  
 Columbian Exposition, xvi, 836; xvii, 812; fine arts at, xviii, 312; legislation concerning the, xvii, 196.  
 Columbian University, xix, 605.  
 Columbus Celebration, the, in New York city, xviii, 528.  
 Columbus, Christopher, canonization of, solicited, vi, 792; statue of, x, 361; remains of, buried in Genoa, xii, 217; xvii, 128.  
 Columbus, Ga., xiv, 144.  
 Columbus, Ohio, xi, 166; water, xix, 775.  
 Columbus's Landfall, xvi, 181.  
 Colvis, Joseph, obit., xvii, 541.  
 Colyer, Vincent, sketch, xiii, 628.  
 Comber, T. J., obit., xii, 626.  
 Combes, Commandant, xi, 374.  
 Combs, L., obit., vi, 680.  
 Comegys, J. P., obit., xviii, 545.  
 Comets, in every volume, under Astronomical Progress and Discovery; origin of, iii, 36; announcements of discovery, vii, 39; ix, 51; x, 50; xi, 50; spectroscopic examination, vii, 38; periodicity, viii, 25; table of the periodic ones, x, 52; Jupiter's family of, xix, 52; Brorsen's, xx, 57; Fay's periodic, xx, 58; Encke's, xx, 56; orbits of Vico's and Swift's, ill., xx, 57. See Electricity, i, 248.  
 Comins, Linus B., obit., xvii, 541.  
 Comma-bacillus, the, ix, 143, 497; x, 797, 798.  
 Commerce, International, ii, 109;



- iv, 161; treaties, vii, 364, 438, 441; viii, 649.
- Commerce of the United States, in first five volumes and vol. ix, 160; xviii, 179; and finance in 1882, vii, 110; and navigation of, ix, 161; tables of exports and imports, x, 183-189; xi, 195; xii, 143; bill on interstate, vi, 172; ix, 160; x, 181, 206; xii, 173; xiv, 170; xv, 154; xvi, 184; xvii, 158.
- Commercial Congress, Trans-Mississippi, xvi, 180.
- Commercial routes, map showing the great, iv, 506, 507.
- Commercial travelers, xix, 150; decision concerning, xiii, 766.
- Committees, grand, in Parliament, viii, 409.
- Common, A., discoveries by, v, 35; vii, 37; x, 49; xi, 51, 52.
- Common carriers, xviii, 221.
- Commune, amnesty to, i, 315.
- Communion, water in, xiii, 14. See Anglican Churches, i, 24.
- Communism in Russia. See Bakunin, i, 60.
- Compasses, xiv, 873.
- Competitive system, the. See Civil-Service Reform.
- Compressed air, as a motor, i, 478, 516; injuries from, vi, 753; drills, vi, 820.
- Comstock, G. F., obit., xvii, 541.
- Comstock mine, the, vi, 83.
- Comstock, S. M., obit., iii, 635.
- Conant, Thomas J., obit., xvi, 614.
- Concord, N. H., xvi, 152.
- Concord School of Philosophy, xiii, 11.
- Conder, C. R., explorations of, i, 327; ix, 27; xii, 25.
- Conder, Lieutenant, researches of, vii, 264.
- Conder's "Basis of Faith," quoted, xiii, 7.
- Condon, S., obit., vi, 680.
- Condors, increase of, in Chili, declared enemies, x, 165.
- Condurango, x, 299.
- Conessine, xi, 290.
- Confederate flags, order for restoration of, xii, 777.
- Confederate monuments, iii, 372; xi, 8; xii, 9; xiii, 563; xvi, 532; xviii, 752.
- Confederate pensions. See Pensions.
- Confederate soldiers, amnesty bill, i, 182; artificial limbs provided for, v, 308; claim of Mrs. Page, vi, 145; xiii, 361; home for, xvi, 535; xvii, 724.
- Confederate States, preservation of the archives of, iii, 571; decision on bank-notes, iii, 784.
- Confederation, a South-African, project for, i, 8.
- Conference, International Monetary. See Bimetallic Standard.
- Conference, International Sanitary, xviii, 349.
- Congdon, C. T., obit., xvi, 614.
- Conger Mountains, ix, 34.
- Congo Arabs, war, xviii, 189.
- Congo Free State, ix, 165; x, 189; xi, 202; xviii, 186; xix, 151; constitution of, x, 191; xiii, 152; xiv, 175; xv, 162; xvi, 193; xvii, 167; xx, 146; proposed Belgian annexation, xx, 147.
- Congo River, Stanley's voyage, ii, 332; his map, ii, 333; course and tributaries, iii, 363; iv, 403; explorations, vii, 336; viii, 385; x, 392; claims of Portugal, viii, 651; International Association of (and map), ix, 165; partition of the lower, x, 191; stations in the valley of, x, 192; missionaries on, x, 193; proposed railroad, x, 193.
- Congo royal guard, ill., ii, 8.
- Congregationalists, in every volume; fiftieth anniversary of union, vi, 136.
- Congress, Farmers', xix, 267.
- Congress of churches, xi, 208; xix, 160.
- Congress of Free Churches, xx, 207.
- Congress of the Episcopal Church, xviii, 14.
- Congress, National, in India, xiii, 432.
- Congress, Sanitary, xii, 663.
- Congress, United States, in every volume; disciplinary power, vii, 194; criminal jurisdiction of, vii, 196; pairing off in, vii, 199; xiii, 188; xiv, 183; xv, 169; xvi, 201; xvii, 176; contested elections in, xiii, 235; adjournment of, xviii, 246; message on Armenian massacres, xx, 192; bond question discussed, xx, 176; copyright discussed, xx, 195; currency discussed, xx, 169; Great Britain and Venezuela, xx, 193; seal question discussed, xx, 194; silver discussed, xx, 191; suppression of lottery traffic, xx, 196.
- Conkling, Frederick A., obit., xvi, 614.
- Conkling, Roscoe, sketch, iv, 295; resignation, vi, 644; sketch and port., xiii, 237.
- Connecticut, in every volume; views in, illustrations, ii, 222, 224, 225, 226; iii, 223; iv, 298; height of principal mountain points in, ii, 227; act on married women's property, ii, 223; iv, 299; breaking away of Stafford dam, ii, 227; judicial department, iii, 215; new capitol, iii, 219; iv, 297; growth of population in fifty years, vi, 198; fish-culture, viii, 255; ix, 232; statue of Gov. Buckingham, ix, 231; constitutional amendment, ix, 232; changes, xx, 210; Rhode Island boundary settled, xi, 269.
- Conner, James M., obit., xii, 578.
- Connolly, Michael, obit., i, 614.
- Connolly, R. B., sketch, v, 198.
- Connor, Patrick E., obit., xvi, 614.
- Conrad, C. M., obit., iii, 635.
- Conrad, Joseph S., obit., xvi, 614.
- Conrad, T. A., obit., ii, 577.
- Conroy, G., obit., iii, 652.
- Conscience, H., obit., viii, 598.
- Consent, age of, x, 452, 453.
- Conservatism, proposed triple alliance in the interest of, v, 47.
- Considérant, V. P., obit., xviii, 577.
- Consolati, Count, obit., i, 631.
- Conspiracies in India, vi, 423.
- Constable, John, xi, 345.
- Constans, J. A. E., v, 281.
- Constant, Benjamin, pictures by, x, 359, 362; xii, 276, 343.
- Constant, B. B., obit., xvi, 668.
- Constantine, Algeria, ii, 14.
- Constantine, Nikolaievich, obit., xvii, 589.
- Constantinople, Russian occupation, and British fleet sent to, iii, 793; riot in, iii, 795; patriarchate of, ix, 277, 279; view of, i, 768.
- Constitutional amendments, U. S., proposed, xi, 266.
- Constitutions, national, proposed revision of French, viii, 253; new, in Guatemala, iv, 464; proposed change in Netherlands, viii, 557; proposed amendments to United States, i, 133, 138, 172, 180; vii, 462; 13th and 14th, viii, 130; ix, 226; centennial anniversary, xii, 780.
- Constitutions, State, new, in California, iv, 103; effects of, v, 77; amended, xii, 86; new, in Louisiana, v, 478; convention to frame, in Dakota, viii, 266; amended, Arkansas, iv, 25; viii, 18; Connecticut, vi, 196; ix, 232; Delaware, viii, 272; xii, 221; Georgia, ii, 338; Indiana, ii, 395; iv, 496; v, 393; vi, 425; viii, 444; Iowa, v, 396; vi, 439; vii, 428; viii, 445; Kentucky, vi, 468; ix, 423; Maine, ix, 463; Massachusetts, vi, 535; Michigan, ii, 514; vi, 574; viii, 540; Minnesota, ii, 525; vi, 595; viii, 542; Missouri, ii, 529; viii, 546; Nevada, viii, 557; ix, 563; New Hampshire, viii, 561; New Jersey, iv, 663; v, 562; New York, ii, 568; North Carolina, v, 586; Ohio, iv, 703; Oregon, v, 611; South Carolina, ii, 697; Texas, vi, 836; West Virginia, iv, 846; Wisconsin, vi, 876; California, xii, 86.
- Consols, jurisdiction of, vi, 778.
- Consumption, parasitic theory of, ix, 663.
- Contempt of legislative authority, x, 261.
- Contested elections in the Congress of the United States, xiii, 235.
- Contraband, food made, x, 172.
- Contracts, damages for prospective profits on, iv, 676.
- Convallaria Maialis, viii, 256.
- Convention of London, the, ix, 111.
- Conventions, national political. See article United States.
- Converse, E. M., obit., xviii, 546.
- Convict-labor, iv, 819; v, 374; in Alabama, v, 11; vi, 7; vii, 4; ix, 9; xi, 7; in California, v, 76; in Connecticut, v, 196; in Florida, v, 272; in Georgia, vi, 334; vii, 340; in Kentucky, vi, 470; in Massachusetts, v, 495; in New Jersey, v, 563; vi, 636; in New York, viii, 566; ix, 582; x, 636; in North Carolina, v, 583; in South Carolina, vi, 813; vii, 745; in Texas, v, 685; in West Virginia, iv, 845; prohibited in the United States, xii, 207; troubles, xvi, 821; xvii, 725.
- Convicts, colonization of, ix, 342; proposed, in Saghalien, x, 397.
- Convict system in Alabama, xiii, 8.
- Convocation of Canterbury, xiv,

- 10; xv, 11; xviii, 8; of York, xv, 11; xviii, 10.  
 Conway, Elias, obit., xvii, 541.  
 Conway, Hugh. See Fergus, F. J.  
 Conway, Thomas William, obit., xii, 578.  
 Conyngham, Jane, Marchioness of, obit., i, 631.  
 Conyngham, T. N., Marquis of, sketch, i, 212.  
 Coode, Sir J., obit., xvii, 589.  
 Cook, Capt. James, ix, 275, 276.  
 Cook, Eliza, xiv, 236.  
 Cook, George H., sketch, xiv, 237.  
 Cook, Mt., ix, 545.  
 Cook, Paul, obit., xi, 713.  
 Cook, T., obit., xvii, 589.  
 Cooke, H. D., obit., vi, 680.  
 Cooke, John Esten, obit., xi, 671.  
 Cooke, J. P., experiments by, v, 87; xii, 102.  
 Cooke, John R., obit., xvi, 615.  
 Cooke, Josiah P., obit. and port., xix, 570.  
 Cooke, Philip St. G., obit., xx, 567.  
 Cooke, Phineas B., obit., xii, 578.  
 Cooke, Rose T., obit., xvii, 541.  
 Cooking-schools, xii, 233.  
 Cooking-utensil, a new, xvi, 707.  
 Cook Islands, xiv, 401.  
 Cooley, Dennis N., obit., xvii, 541.  
 Coolies, exportation of, to Cuba, v, 103; to Peru, x, 688.  
 Coombs, N., obit., iii, 636.  
 Cooper, George H., obit., xvi, 615.  
 Cooper Institute, i, 212.  
 Cooper, James, obit., xi, 672.  
 Cooper, Peter, nomination of, i, 781; sketches, i, 212; viii, 256, with steel-plate portrait.  
 Cooper, Susan F., obit., xix, 571.  
 Cooper, Thomas, obit., xvii, 539.  
 Cooper, William W., obit., xi, 713.  
 Co-operation, xiii, 241.  
 Copan, Monuments of, xi, 24, 25.  
 Cope, C. W., obit., x, 677.  
 Cope, Edward D., ix, 45.  
 Copeland, C. W., obit., xx, 567.  
 Copeland, Dr. Ralph, x, 53.  
 Copenhagen, proposed fortification of, viii, 275; free port of, xix, 241.  
 Copenhagen, University of, celebration of its 400th anniversary, iv, 314.  
 Copenhagen, Wellington's horse, epitaph on, ix, 624.  
 Coppée, Henry, obit., xx, 568.  
 Copper, method of welding, i, 523; determination of, ii, 92; from pyrites, ii, 500; hardening, ii, 500; preparation, vii, 532; removal of arsenic, etc., viii, 113; extraction, viii, 521; ix, 477; market, 474; in Africa, ix, 362; xiii, 525; crisis, the, xiv, 340; and tin, xiv, 541; xv, 528; xvi, 510; mines, xiv, 595. See also under Metallurgy.  
 Copra, trade in, x, 139.  
 Coptic Church, ix, 279.  
 Copyright, commission on, iii, 223; laws of, and discussion on, iii, 223-227; treaty, France and Germany, viii, 397; international, xi, 811; xiii, 234; xvi, 215; conference on, x, 746; xii, 755; discussed in United States Congress, xx, 195; in Canada, xx, 108.  
 Coquillat, C., obit., xvi, 668.  
 Cora, R. de la, x, 361.  
 Corano, madonna of, x, 506.  
 Corbit, William P., obit., xvii, 541.  
 Coreoran, W. W., sketch, xiii, 628.  
 Cordage, xiii, 247.  
 Corder, H., observations by, iii, 36; vii, 39.  
 Cordova, meteorological stations in, xii, 315.  
 Corea, i, 425; v, 413; vii, 175; viii, 257; xix, 396; insurrection in vii, 176; American treaty, vii, 176; viii, 259, 260, 455; ix, 233, 418; x, 263; map, x, 264; outbreak of 1884, x, 266; guilds, the six magazines and the six warehouses, x, 266; xi, 271; gold in, 272; cholera, 271; xiii, 252; xiv, 238; flag of, xiv, 239; treaty with, xiv, 753; xvi, 238; campaign, xix, 130; Consulate Hill and harbor of Chemulpo, xix, 397; general, a, xix, 399; question, xix, 124; Fu-san, xix, 398; Christianity in, xx, 384.  
 Coreans in United States, xi, 271.  
 Corfu, Greece, illustration, ii, 370.  
 Corinth, Greece, illustration, ii, 370; canal, viii, 308; ix, 312; xv, 281; xviii, 370.  
 Corinto, British occupation of, xx, 553.  
 Corliss, G. H., sketch, xiii, 628.  
 Cormon, Fernand, pictures by, x, 358; xii, 275.  
 Cornacchia, Capt., xiii, 4.  
 Cornaro, Louis, obit., xi, 713.  
 Cornell, John Black, obit., xii, 578.  
 Cornell, John Henry, obit., xix, 571.  
 Cornell, T., obit., xv, 641.  
 Cornell University, ill., i, 599.  
 Corning, H. K., obit., iii, 635.  
 Corning, N. Y., xv, 123.  
 Corn Island, annexation, xiii, 613.  
 Cornly, James M., obit., xii, 579.  
 Corn-silk, drug made from, ix, 272.  
 Cornthwaite, R., obit., xv, 677.  
 Cornutine, x, 299.  
 Cornwall, H. B., investigations, v, 95; xii, 107.  
 Corona, observations of the, iii, 34; photographing, x, 47.  
 Coroners, office abolished in Massachusetts, ii, 483.  
 Coronini, Count, sketch, iv, 301.  
 Corot, B. C., xi, 347.  
 Corporations, liability, iv, 21, 720.  
 Corps Législatif, under Louis Napoleon, vii, 208.  
 Corrado, Nestori, obit., xvi, 615.  
 Correlation theory, xii, 672.  
 Correnti, Cesare, sketch, xiii, 660.  
 Corrigan, Archbishop, x, 563; xii, 717.  
 Corrigan, J. H., obit., xv, 641.  
 Corrigan, Patriek, obit., xix, 571.  
 Corrosive sublimate, use of, in surgery, ix, 747.  
 Corse, John M., obit., xviii, 546.  
 Corse, M. D., obit., xx, 568.  
 Corsicana, Tex., xvi, 152.  
 Cort, F. de, obit., iii, 652.  
 Corti, Luigi, sketch, xiii, 660.  
 Cortland, N. Y., xv, 124.  
 Corundum, production of, ii, 93.  
 Corvée, abolition of, in Egypt, xii, 243.  
 Corwin, the, cruise of, v, 301; vi, 323, 324.  
 Corwine, A. B., obit., v, 591.  
 Cosmic Dust, viii, 526; ix, 53.  
 Cossacks, illustration, i, 710.  
 Costa, Sir M., obit., ix, 615.  
 Costa Rica, government, statistics, etc., in every volume; map, ii, 228; view of the capital, vii, 177; hostility to Nicaragua, i, 213; ii, 229; v, 200; outbreak in, ii, 229; fruit trade, iii, 228; education, iii, 228, 229; iv, 302; xi, 274; without a constitution, v, 200; finances of, vi, 199; vii, 177; Jesuits in, ix, 235; Protestantism in, x, 268; minerals found in, xi, 274; Chinese excluded, xii, 211; boundary dispute; xiii, 253; xiv, 239; xv, 242; xvi, 24; xvii, 217. See Colombia.  
 Coster, Maurice I., ix, 477, 478.  
 Cotheal, Alexander I., obit., xix, 572.  
 Cotopaxi, Mount, ix, 541; eruption, 281; x, 203; view of, iii, 260.  
 Cottonot, discovery by, iii, 36.  
 Cotterill, discovery, iii, 663.  
 Cottesloe, T. F. F., obit., xv, 677.  
 Cotter law, the, iv, 644.  
 Cotton, i, 213; ii, 229; iii, 229; vi, 200; vii, 178; production and value of, iv, 633; seed-cotton, iv, 638; manufacture, ii, 120; iv, 143, 820; v, 130; vii, 502; commerce, iv, 171; weighing by sizing, iii, 229; Atlanta exposition, vi, 260; statistics, vii, 113; factories in South Carolina, viii, 735; large yield in, xii, 738; in Mexico, xi, 555; cultivation of, in Japan, xii, 402; xv, 278; statistics, xvii, 764; mineral, xvi, 528.  
 Cotton convention in Texas, xx, 720.  
 Cotton-growers' convention, xvii, 471; in Arkansas, xviii, 24.  
 Cotton, Sir H., obit., xvii, 589.  
 Cotton-seed oil, xvii, 307.  
 Cotton-seed products, xiv, 240.  
 Cotton-tree, flour from the, x, 100.  
 Cotton-worm, see Cotton, vi, 200; illustration, ii, 232.  
 Coudreau, H., xii, 314.  
 Coulson, Dr. William, obit., ii, 598.  
 Coulthurst, W., obit., ii, 598.  
 Coumoundouros, resignation of, vii, 370.  
 Council Bluffs, xiii, 162.  
 Coup d'état in Servia, xviii, 686.  
 Coup d'état, the Queen's, in Hawaii, xviii, 375.  
 Coupon cases, x, 268.  
 Courbet, Admiral, ix, 57, 141, 142, 343; x, 172, 173; obit., x, 659.  
 Courbet, Gustave, sketch, iii, 230.  
 Courey, Gen. Roussel de, x, 27, 30, 31; obit., xii, 626.  
 Courier and Enquirer, the, ix, 613.  
 Courtenay's fog-signal, v, 449.  
 Courtney, J. M., v, 449.  
 Courtat, Louis, picture by, x, 363.  
 Court of claims bill, xii, 189.  
 Courts, rival, in Spain, i, 731.  
 Courts, United States and State, see Criminal Jurisdiction, vii, 179; crowded, v, 649; in Connecticut, iii, 215; v, 196; cost in North Carolina, v, 584; bill on jurisdiction of circuit, and to regulate removal of causes, v, 137-150.  
 Coutance, H. A., experiments, ix, 661.  
 Couza, obit., xv, 677.  
 Covington, Ky., xi, 166.  
 Cow-boys, the, vi, 782.



- Cowgill, Clayton A., sketch, i, 298.  
 Cowles, E., obit., xv, 641.  
 Cowles, E. H. and A. H., x, 578; xi, 535.  
 Cowles, J. P., obit., xv, 641.  
 Cowley, Earl, obit., ix, 615.  
 Cowper, E. A., obit., xviii, 577.  
 Cox, Bell, case of, xii, 13.  
 Cox, E. T., discovery of mines by, v, 18.  
 Cox, E. W., obit., iv, 698.  
 Cox, Hannah, abolitionist, obit., i, 614.  
 Cox, Hannah, centenarian, obit., vi, 680.  
 Cox, Samuel, obit., xviii, 577.  
 Cox, S. H., obit., v, 591.  
 Coxe, Brinton, obit., xvii, 541.  
 Coxe, Samuel H., obit., xx, 568.  
 Coxe, Sir J., obit., iii, 652.  
 Cozzens, W. C., obit., i, 614.  
 Crab-farming, xi, 274.  
 Crabs, symbolism of, ix, 600.  
 Craig, James, sketch, xiii, 629.  
 Craig massacre, the, xii, 43.  
 Craig, Sir W. G., obit., iii, 652.  
 Craik, Dinah Maria Mulock, sketch and portrait, xii, 212.  
 Craik, Georgiana. See May.  
 Crain, Peter Wood, obit., xvii, 542.  
 Crampel, P., obit., xvi, 669.  
 Crampton, C. A., xii, 107.  
 Crampton, John F., xiii, 266.  
 Crampton, J. F. T., obit., xi, 713.  
 Crampton, T. R., sketch, xiii, 661.  
 Cranborne, Lord. See Salisbury.  
 Cranbrook, Viscount, portrait, x, 441; sketch, 449.  
 Cranch, C. P., obit., xvii, 542.  
 Crane, Rev. J., obit., ii, 577.  
 Crane, Walter, x, 365.  
 Cranston, H., obit., ii, 577.  
 Crape-stone, ix, 235.  
 Craven, A. W., obit., iv, 692.  
 Craven, John J., obit., xviii, 546.  
 Craven, Thomas T., obit., xii, 579.  
 Crawford case, the, xiv, 425.  
 Crawford County plan for elections, xii, 247.  
 Crawford, David, obit., i, 614.  
 Crawford, Earl of, obit., v, 599.  
 Crawford, S. W., obit., xvii, 542.  
 Crawford, Thomas, xi, 347.  
 Crawford, W., obit., xv, 677.  
 Crawley, R., obit., xviii, 577.  
 Crayon portraits, xv, 729.  
 Creasy, Sir E. S., obit., iii, 652.  
 Creation, Akkadian account of, xvi, 23.  
 Creation tablet, xvii, 14.  
 Crebs, J. M., obit., xv, 641.  
 Cree Indians, the, xx, 502.  
 Creedmoor, international rifle-match at, ii, 234.  
 Creighton observatory, xii, 40.  
 Crematious, i, 216; iv, 442; progress of, xiii, 255.  
 Cremer, Camille, sketch, i, 213.  
 Crémieux, Hector, obit., xvii, 590.  
 Crémieux, I. A., sketch, v, 200.  
 Cressbrook collection, xi, 345.  
 Cresson, Dr. J. C., obit., i, 614.  
 Cresswell, J. A. J., obit., xvi, 615.  
 Cretan question, the, xiv, 408.  
 Crete, insurrection in, iii, 411; article on, in Berlin Treaty, iii, 257; union with Greece, iii, 793; troubles in, iv, 834; viii, 774; discovery in, x, 37; disturbance in, x, 752; xii, 773; xiv, 798.  
 Crevaux, Dr., explorations by, ii, 330; iii, 365.  
 Crime, punishment of, in North Carolina, i, 611.  
 Crimean war, the, ix, 761.  
 Crimes Act, the, x, 451, 454, 455.  
 Criminal Code Bill, British, viii, 411.  
 Criminal Jurisdiction in the United States, vii, 179; of consuls, case of O'Neill, vii, 442.  
 Crinoline, ix, 388.  
 Crisp, Charles F., sketch and port., xvi, 242.  
 Crispi, Signor, xii, 398, 399; xiii, 4.  
 Criticism, recent works of. See Literature in every volume.  
 Crittenden, G. B., obit., v, 591.  
 Crittenden, T. L., obit., xviii, 546.  
 Crivoseia, insurrection in, vii, 55; viii, 548.  
 Croasdale, W. T., obit., xvi, 615.  
 Croatia, dissatisfaction in, v, 370; viii, 48; ix, 70; insurrection in, about escutcheons, ix, 71; peasants of, illustration, ii, 58; home-rule party broken up, xii, 54.  
 Crocker, Charles, sketch, xiii, 629.  
 Crocker, J. S., obit., xv, 641.  
 Crocker, Uriel, obit., xii, 579.  
 Crocker, W. M., description of the Milanows by, vi, 330.  
 Crofters, Scottish, ix, 378, 404, 405; x, 527; xii, 342.  
 Crofters, the, xiii, 392.  
 Crofton, Sir Walter, xii, 701.  
 Crofton system, the, xii, 703.  
 Croix, L. De S., sketch, xiv, 659.  
 Croix, Marie de la, ix, 774.  
 Croll, James, on nebulae, iii, 38; calculations by, vi, 349; obit., xv, 677.  
 Croly, David G., sketch, xiv, 626.  
 Crommelin, W. A., obit., xi, 713.  
 Cronin, E. A., obit., iii, 635.  
 Cronstadt, view of, i, 709.  
 Crookes, William, observations, viii, 526; xi, 47; xii, 101, 109.  
 Crook, George, sketch, xv, 243.  
 Crops, vi, 851; viii, 335; ix, 327; xiv, 314; xv, 307; xvii, 269. See Finances and Financial Review.  
 Crosby, Dr. A. B., obit., ii, 577.  
 Crosby, G. A., sketch, xiii, 629.  
 Crosby, Howard, obit. and port., xvi, 616.  
 Crosby, J. P., obit., i, 614.  
 Crosby, William H., obit., xvii, 542.  
 Crossman, G. H., obit., vii, 635.  
 Cross, Gen. O., obit., i, 614.  
 Cross, Sir Richard Assheton, portrait and sketch, x, 449.  
 Crossley, John T., sketch, xiv, 659.  
 Crosswell, Charles M., i, 552; iii, 562; obit., xi, 672.  
 Croton aqueduct, ix, 314; illustration, i, 602; xii, 555; illustrations, 556, 557, 559, 560.  
 Crow-Bar Case, the, viii, 101.  
 Crowell, Eugene, obit., xix, 572.  
 Crowninshield, B. W., obit., xvii, 542.  
 Crozier, Capt., x, 138.  
 Crozier, L. N. F., x, 125.  
 Crozier, Robert, obit., xx, 568.  
 Crudeli, Tommasi, ix, 271, 653.  
 Cruikshank, George, obit., iii, 653.  
 Cruisers, new. See United States Navy.  
 Cruls, Dr., discovery by, vii, 37.  
 Crutchfield W., obit., xv, 642.  
 Cruto, electric lamp of, viii, 303.  
 Cryptogamia, the higher, ix, 94.  
 Crystals, quartz, artificially produced, iv, 417.  
 Csillag, Rosa, obit., xvii, 590.  
 Cuba, viii, 261; xix, 234; demand for United States products, vi, 817; war in, i, 729, 732; ii, 700; iii, 774; iv, 468, 822; v, 672; results of, viii, 262; ix, 236; virtual slavery in, ix, 237; suspension of newspapers in, ix, 237; emancipation, xii, 215; x, 273; xi, 275; xii, 214; xiii, 256; xiv, 244; xv, 244; xvi, 243; xvii, 218; xviii, 252; xx, 210; Aliança affair, xx, 224; Mora indemnity, xx, 224.  
 Cubango river, source of, iv, 405.  
 Cuciniello, M., sketch, xiv, 659.  
 Cuckoo Clock, x, 613.  
 Cudahy, M., invention by, x, 734.  
 Cuffee, Paul, xii, 417.  
 Cullen, Cardinal, sketch, iii, 230.  
 Cullis, Charles, obit., xvii, 542.  
 Cullman, John G., obit., x, 568.  
 Cullom, S. M., sketch, i, 395.  
 Cullum, G. W., obit., xvii, 542.  
 Culver, E. D., sketch, xiv, 626.  
 Cumberland river improvement, xiv, 790.  
 Cummin, H. H., sketch, xiv, 626.  
 Cumming, Sir A., obit., xviii, 577.  
 Cummings, E. E., obit., xi, 672.  
 Cummings, J., obit., xv, 642.  
 Cummings, Thomas S., obit., xix, 572.  
 Cummins, G. D., sketch, i, 218.  
 Cummins, G. W., experiments by, x, 694.  
 Cundall, Joseph, obit., xx, 608.  
 Cuneiform literature, ix, 18; antiquity of, xii, 16.  
 Cunningham, H., obit., iii, 635.  
 Cunningham, James, x, 454.  
 Curacao. See West Indies.  
 Curei, C. M., obit., xvi, 669.  
 Curley, James, sketch, xiv, 626.  
 Currency, circulation, xiii, 785.  
 Curreney, paper, of Turkey, iv, 832; law in Canada, v, 211; of Argentine Republic, vi, 29; of Japan, vi, 455.  
 Currency, United States, ii, 235; v, 646; vi, 127; discussed in Congress, iii, 138, 175; xx, 169; bill to redeem fractional, i, 202. See also Finances of the United States in each volume, and Indebtedness, etc., vii, 392; bimetallic, x, 275; charts, x, 276, 278, 279, 281.  
 Curry, Daniel, obit., xii, 579.  
 Curry, G. L., obit., iii, 635.  
 Curtain-rings, xvi, 707.  
 Curtains, ix, 247; improved fixtures, illustration, xii, 653.  
 Curteis, George H., obit., xix, 611.  
 Curteis, William C., obit., xix, 612.  
 Curtin, Andrew G., obit. and port., xix, 572.  
 Curtis, Benjamin R., obit., xvi, 616.  
 Curtis, George J., obit., xix, 573.  
 Curtis, George William, ix, 691; sketch and port., xvii, 219.  
 Curtis, N. M., indicted, vii, 694.  
 Curtis, Samuel J., sketch, xiii, 629.  
 Curtis, W. E., sketch, v, 201.  
 Curtis, William B., obit., xvi, 616.  
 Curtius, G., obit., x, 659.

- Curwen, Rev. John, ix, 546.  
 Cushing, Caleb, sketch, iv, 303.  
 Cushman, Charlotte, sketch, i, 218.  
 Cust, Sir E., obit., iii, 653.  
 Custance, William, obit., xi, 713.  
 Custer, Gen. George A., sketch, i, 219; death of, i, 22, 43.  
 Customs conference, xv, 71.  
 Cuthbert, J. A., obit., vi, 681.  
 Cut-Knife Creek, fight at, x, 128.  
 Cutler, W. P., sketch, xiv, 626.  
 Cutter, Eunice P., obit., xviii, 546.  
 Cutter, G. F., obit., xv, 642.  
 Cutter, Stephen, obit., xi, 672.  
 Cutting Case, the, xi, 825.  
 Cutting, Jonas, obit., i, 615.  
 Cutts, Richard M., obit., xi, 673.  
 Cuvillier-Fleury, A. A., obit., xii, 626.  
 Cuyler, Theodore, obit., i, 615.  
 Cuypers, Josef, x, 366.  
 Cyanogen compounds, ix, 803.  
 Cyclamose, xi, 139.  
 Cyclone in India, i, 405; in Minnesota, viii, 543; xix, 490; in Sicily, ix, 416; in Arkansas, xix, 31.  
 Cyclones, phenomena of, xii, 491.  
 Cyclorama, xi, 278.  
 Cyprus, iii, 231, 401; vi, 202; articles on, in Berlin Treaty, iii, 259; finances, v, 336; Cesnola's explorations, i, 31; Phœnician inscription from, xii, 17; xiv, 397; xv, 404; xvii, 325; excavations in, xiv, 21; xvi, 342.  
 Cyprus Exploration fund, xiii, 27.  
 Cyr, Narcisse, obit., xix, 573.  
 Cyril II, Patriarch of Jerusalem, i, 373; obit., ii, 598.  
 Czajkowski, Michael, obit., xi, 714.  
 Czar, the, attempts on the life of, iv, 776, 778; v, 662, 665; xii, 723; precautions taken, ix, 712; x, 69; visit of, to the Cossacks, xii, 725. See Alexander.  
 Czartoryski, Prince, obit., xvi, 669.  
 Czech movement, the, xix, 66.  
 Czechs, the, v, 44, 45; vi, 49, 50; viii, 45; x, 71; language and university, 71; agitation, 72.  
 Czermak, J., obit., iii, 653.  
 Czernagora, ix, 536.  
 Daboll, C. L., fog-signal of, v, 447.  
 Daboll, David A., obit., xx, 568.  
 Daft, Olivia, obit., v, 592.  
 Daggett, O. E., obit., v, 592.  
 Daguerre, ix, 651.  
 Dahl, M., xii, 484.  
 Dahlen, Gen. von, vii, 58.  
 Dahlgren, C. G., sketch, xiii, 629.  
 Dahomans, the king's dance, illustration, ii, 8.  
 Dahomey, war with, i, 8; xv, 244; xvii, 220; xviii, 330.  
 Dai Nippon. See Japan.  
 Dakin, T. S., obit., iii, 635.  
 Dakota, i, 219; ii, 245; vi, 202; viii, 265; new capital, 266; Constitution, 267; x, 283; census, x, 287; division of, xii, 219; ix, 240; x, 282; xi, 279; xiii, 259; xiv, 245.  
 Dalai Lama, the, x, 396.  
 D'Albertis, explorations by, iii, 364; iv, 398, 408.  
 Dales, John B., obit., xviii, 547.  
 Dalhousie College, xiv, 149.  
 Dalhousie, Lord, in Burmah, xi, 114.  
 Dall, C. H. A., obit., xi, 673.  
 Dall, W. H., exploration by, v, 289; vi, 325; x, 404.  
 Dallas, Tex., xv, 124.  
 Dalles, the, Ore., xvi, 172.  
 Dallinger, W. H., ix, 510.  
 Dallman, Capt., xi, 382.  
 Dally, Abram, obit., xviii, 547.  
 Dalmatia, i, 757.  
 Dalrimple, V. C., obit., xvii, 543.  
 Dalton, Ga., xiv, 144.  
 Dalton, J. C., sketch, xiv, 249.  
 Damala, Jacques, sketch, xiv, 659.  
 Damaralaud, xiv, 111; xv, 96.  
 Damesteter, James, obit., xix, 612.  
 Damien de Veuster, J., xiv, 250.  
 Damien, Father, xii, 350.  
 Damour, experiments by, ii, 501.  
 Dams, famous, xii, 255.  
 Dana, A. H., obit., xii, 580.  
 Dana, E. L., sketch, xiv, 626.  
 Dana, James D., sketch and port., xx, 224.  
 Dana, R. H., the elder, sketch, iv, 304.  
 Dana, R. H., the younger, sketch, vii, 182.  
 Danakil, tribe of, the, ii, 2.  
 Danbury, Conn., xvi, 153.  
 Danby, A. G., obit., i, 615.  
 Dancer, John B., obit., xii, 626.  
 Dancing, churches on, i, 668; iv, 734.  
 Dancing mania, xiii, 312.  
 Dandanga, ix, 170.  
 Dandenhower, J. W., portrait, xii, 333; obit., xii, 580.  
 Danforth, Charles, obit., i, 615.  
 Danforth, P. S., obit., xvii, 543.  
 Daniel, R. T., obit., ii, 578.  
 Daniels, William B., obit., xix, 573.  
 Dannat, W. F., x, 358.  
 Danube, European Commission of the, i, 753; vii, 728; viii, 268; ix, 702; xiii, 719; xix, 703; xx, 691; Kilia question, vii, 729; underground connection with the Auch, iii, 722; the Iron Gate, ii, 691; viii, 309, 696; ix, 702; map of provinces of the, iii, 789.  
 Danvers Hospital, ii, 483.  
 Danville, Ill., xviii, 156.  
 Danville, Va., xv, 125.  
 Daoud Pasha, vi, 261.  
 Darby, John, obit., ii, 578.  
 Darell, Alfred, obit., xviii, 578.  
 Dardanelles, the, illustration, i, 765; question of the, xvi, 784; xvi, 828.  
 D'Aréñal, Donna Concepcion, xii, 704.  
 Dar-es-Salam, port of, x, 796.  
 Dargan, E. S., sketch, iv, 304.  
 Darley, Felix O. C., sketch and port., xiii, 629.  
 Darling, Henry, obit., xvi, 616.  
 D'Arleingourt, invention, vi, 256.  
 Darr, Francis, obit., xx, 568.  
 D'Arsonval, Dr., xii, 671.  
 Dartmouth College, ill., i, 591.  
 Daru, Count, obit., xv, 677.  
 Darwaz, State of, x, 2.  
 Darwin, Charles, experiments by, v, 106; on earth-worms, vi, 224; sketch of, vii, 183.  
 Darwin, Francis, experiments by, iii, 444; iv, 36; v, 106.  
 Darwin, G. H. and H., observations by, vii, 223; xi, 47.  
 Dash Kepri, x, 9.  
 Dashur, the treasure of, xix, 21.  
 Daubigny, C. F., obit., iii, 653.  
 Daubigny, Karl, obit., xi, 714.  
 Daubrée, experiments by, iv, 417.  
 Daucher, L., obit., iii, 635.  
 Daughters of the American Revolution, xix, 462.  
 Daughters of the Cincinnati, xix, 642.  
 Daughters of the Revolution, xix, 642.  
 Davenport, E. L., obit., ii, 246.  
 Davenport, Fannie E., obit., xvi, 616.  
 Davenport, Iowa, xv, 125.  
 Davey, Chalou F., obit., iii, 635.  
 David, Ernest, obit., xi, 714.  
 David, F. C., sketch, i, 220.  
 Davidge, W. P., sketch, xiii, 630.  
 Davidis, Henrietta, obit., i, 731.  
 Davidson, G. S., obit., vi, 681.  
 Davidson, R., obit., i, 615.  
 Davidson, T. G., obit., viii, 588.  
 Davie, W. J., obit., xii, 580.  
 Davies, Charles, sketch, i, 220.  
 Davies, H. E., sketch, vi, 204.  
 Davies, Henry E., obit., xix, 573.  
 Davis, A. J., obit., xvii, 543.  
 Davis, Alexander K., impeachment, i, 560.  
 Davis, Charles H., Admiral, sketch, ii, 246.  
 Davis, Charles H., painter, xi, 346.  
 Davis, David, sketch, ii, 383; obit. and port., xi, 281.  
 Davis, E. H., sketch, xiii, 630.  
 Davis, E. P. C., obit., xx, 568.  
 Davis, George T., obit., ii, 578.  
 Davis, G. T. M., sketch, xiii, 630.  
 Davis Island dam, x, 333.  
 Davis, Jefferson, amnesty to, discussed, i, 183-192; Mississippi resolutions on portrait of, v, 528; action of Congress, x, 235; charge by Gen. Sherman against, x, 235; sketch and port., ix, 259; removal of remains, xviii, 752.  
 Davis, John L., sketch, xiv, 626.  
 Davis, Joseph A., obit., xi, 673.  
 Davis, Joseph J., obit., xvii, 543.  
 Davis, Sir J., obit., xv, 677.  
 Davis, Mrs. P. W., obit., i, 615.  
 Davis, N. H., obit., xv, 642.  
 Davis, R., obit., xv, 642.  
 Davis, Theodore R., obit., xix, 573.  
 Davis, William M., xii, 493.  
 Davison, H. J., obit., xv, 642.  
 Davitt, M. viii, 413; xii, 338.  
 Davy, A., invention, x, 580.  
 Davy, E. W., discovery, iii, 92.  
 Dawant, Albert Pierre, x, 362.  
 Dawes, Henry L., sketch, vi, 536.  
 Dawkins, W., his address, xiii, 45.  
 Dawson, Arctic voyage, viii, 383.  
 Dawson, B. F., sketch, xiii, 630.  
 Dawson, F. W., sketch, xiv, 626.  
 Dawson, Dr. G. M., xii, 314.  
 Dawson, Henry, obit., iii, 653.  
 Dawson, Dr. J. W., x, 407.  
 Dawson, N. H. R., obit., xx, 569.  
 Dawson, S. K., sketch, xiv, 627.  
 Dawson, Sir William, xi, 47.  
 Day, B. H., sketch, xiv, 627.  
 Day, Edward H., obit., xx, 569.  
 Day, Hannibal, obit., xvi, 616.  
 Day, Henry, obit., xviii, 547.  
 Day, Horace H., obit., iii, 635.  
 Day, H. N., obit., xv, 642.  
 Dayan, Charles, obit., ii, 578.  
 Dayton, Ohio, xi, 166; xiv, 144; water, xix, 775.  
 Daza, Hilarion, sketch, iv, 305; obit., xix, 612.



- Deaconesses, v, 638; viii, 4.  
 Deaconess institution, xiii, 505.  
 Deady, M. P., obit., xviii, 547.  
 Deak, Francis, sketch, i, 221.  
 Deane, Charles, sketch, xiv, 627.  
 Dearborne, F. M., obit., xiii, 580.  
 Deas, Sir David, obit., i, 631.  
 Death penalty, in Ecuador, xii, 232.  
 De Bar, Benedict, obit., ii, 578.  
 Debeb, Abyssinian robber, xi, 455.  
 De Bort. See Bort.  
 De Brazza. See Brazza.  
 Deb Rajah, the, x, 496.  
 Debray, J. H., sketch, xiii, 661.  
 Debreul, J. P., obit., iii, 636.  
 Débris from mines. See Mines.  
 Debts, of United States, of the various States, and of other nations. See Indebtedness of the United States, etc., vii, 392, with maps and diagrams, and United States Finances, in every volume. See also under titles of States and Countries; of Cities, iv, 839.  
 Debus, H., theory of, x, 343.  
 Decaisne, J., obit., vii, 645.  
 Decanter, musical, x, 609.  
 Decatur, Ala., xiii, 162.  
 Decatur, Ill., xvi, 154.  
 Decatur, Stephen, sketch, i, 222.  
 Decazes, Louis Charles, Due de, ii, 320; obit., xi, 714.  
 Decazeville, strike at, xi, 358.  
 Decean, mining in the, xiv, 427.  
 Decean Company, the, xii, 383.  
 Dechen, Heinrich, sketch, xiv, 659.  
 Dechy, M., xii, 331.  
 Decipium, vi, 93.  
 Decker, John, obit., xvii, 543.  
 Decorative art in America, ix, 242.  
 Decorations, sale of, in France, xii, 294.  
 Decourcelle, A., obit., xvii, 590.  
 Decristoforis, Col., xii, 2, 3.  
 Dederick, cotton-press, vi, 265.  
 Deeds and titles, record of, in Great Britain, x, 457.  
 Deems, C. F., obit., xviii, 547.  
 Deep-Harbor Convention, xiii, 180; xiv, 485.  
 Deep-sea dredgings, x, 145.  
 Deer-hound, the, ix, 310.  
 Deer in the United States, x, 387.  
 Defalcation, Archer, xv, 519.  
 Defenses, system of, in United States, iii, 31; v, 647; of Switzerland, v, 676; vii, 774.  
 Defoe collection, xi, 344.  
 De Forest, Lockwood, ix, 249.  
 Defrees, J. D., obit., vii, 636.  
 Defregger, Franz, x, 367; xii, 279.  
 Degener, E., obit., xv, 643.  
 Degenfeld-Schönburg, Count von, sketch, i, 222.  
 De Kalb, Baron, statue of, xi, 347.  
 De Kock, P. H., obit., xvii, 590.  
 De Koven, James, sketch, iv, 305.  
 Delacroix, Eugène, x, 364; xii, 279.  
 Delafontaine, M., discovery by, iii, 86; experiments, vi, 93.  
 Delafosse, Gabriel, obit., iii, 653.  
 Delafosse, M., x, 26.  
 Delagoa Railroad, xiv, 110; xv, 96, 739.  
 De Lamater, C. H., sketch, xiv, 627.  
 Delanc, John T., sketch, iv, 303.  
 Delany, James J., obit., xi, 673.  
 Delany, P. B., ix, 310.  
 De la Kive, theory of, viii, 28.  
 De la Rue, W., sketch, xiv, 659.  
 Delaunay, J. E., obit., xvi, 669.  
 Delaware, in each volume; old Swede Church, illustration, ii, 247; apportionment in, iii, 237; project for ship-canal, iii, 239; iv, 310; tramp act, iv, 306; divorce laws, iv, 306, 307; railroad commissioners' bill, iv, 308; limits of Federal and State authority, v, 203; election riot, v, 204; vi, 205; constitutional amendments, ix, 251; State line, xviii, 255.  
 Delbœuf, M. J., ix, 657.  
 De Leon, Edwin, obit., xvi, 617.  
 De Lesseps, v, 16.  
 Delevan, C. H., obit., xvii, 543.  
 Delhi, illustration, i, 405.  
 Deligeorgis, obit., iv, 698.  
 De l'Isle, Gen. Brière, x, 24 *et seq.*  
 Delitzsch, Johannes, sketch, i, 225.  
 Delius, Nikolaus, sketch, xiii, 661.  
 Deloncle, F., x, 397.  
 De Long, Charles E., obit., i, 615.  
 De Long, G. W., expedition of, v, 288; vi, 322; vii, 331; sketch, vii, 189; portrait, vii, 331.  
 Delord, Taxile, obit., ii, 598.  
 Delorme, explorations by, vi, 329.  
 Delphi, site of, illustration, ii, 369; contemplated excavations at, xii, 22; temple at, xvi, 17.  
 Delpit, Albert, obit., xviii, 578.  
 De Luns, C., obit., iii, 636.  
 Delyannis, xi, 409.  
 Delyannis ministry, xx, 343.  
 Demarcy, M., xii, 101.  
 Dembowski, prize to, iii, 39.  
 Demidoff, Prince, obit., x, 659.  
 De Mille, H. C., obit., xviii, 547.  
 Denmeni, Col., x, 625.  
 Demorest, W. J., obit., xx, 569.  
 Denfert-Rochereau, obit., iii, 653.  
 Denison, Andrew W., obit., ii, 578.  
 Denison, Samuel D., obit., v, 592.  
 Denmark, in each volume; views in, illustrations, i, 228; ii, 250; debates on military defenses, i, 227-230; v, 207; army reorganization, iv, 313; indictment of ministers, ii, 249, 250; social Democrats, ii, 250; Santa Cruz insurrection, iii, 242; treaty of Prague, iv, 313; University of Copenhagen celebration, iv, 314; relations with Germany, v, 208; constitutional crisis, vi, 209; vii, 191; viii, 275; ix, 253; x, 290; peculiar political condition, vi, 210; land system, vi, 211; attempt to assassinate the prime minister, x, 293; xi, 285; trial of Herr Berg, xi, 285; colonies, xii, 223; dependencies of, xviii, 258.  
 Dennett, Daniel, obit., xvi, 617.  
 Dennett, observations by, iv, 52.  
 Denning, W. F., observations by, iii, 36; vi, 39; viii, 20, 23, 26.  
 Dennis, John S., obit., x, 659.  
 Dennison, Aaron L., obit., xx, 569.  
 Dennison, William, obit., vii, 636.  
 Denny, Mr., in Corea, xiii, 253.  
 Denominations, Religious, number of, viii, 129. See articles on the various denominations, in each volume.  
 De Normanville, W., invention by, ii, 499.  
 Densmore, Amos, obit., xviii, 547.  
 Dent, Mr., xii, 313.  
 Dent, F. T., obit., xvii, 544.  
 D'Entrecasteaux Islands, x, 681.  
 Denver, xi, 167; capitol building at, xiii, 179; water, xix, 775.  
 Denver, James W., obit., xvii, 544.  
 Denza, F. P., observations, v, 36.  
 Denzin, K. F. von, obit., i, 631.  
 Departments, United States Government, xiii, 375.  
 Depauw, observations by, viii, 436.  
 De Pauw, W. C., obit., xii, 581.  
 Depeyre, O., obit., xvi, 669.  
 Deposit and Trust Companies, x, 293; list of, in U. S., x, 294, 295.  
 Depretis, Agostino, v, 406; xi, 453, 454, 455; sketch, xii, 223; retirement of, 397.  
 De Puy, H. W., obit., i, 615.  
 Derby, E. H. S. S., obit., xviii, 578.  
 Derby, J. C., obit., xvii, 544.  
 Derby, Lord, x, 58, 59, 419.  
 Derby, Mrs. L. F., obit., v, 592.  
 Derby, Orville A., ix, 475.  
 De Rossi, observations of, vii, 223.  
 Déroulède, Paul, arrest of, xii, 296.  
 De Russy, G. A., obit., xvi, 617.  
 Dervishes, xviii, 278.  
 Dervishes, war with, xiv, 1.  
 Dervish Pasha, sketch, ii, 250.  
 Desabaye-Chegaray, Eloise, sketch, xiv, 627.  
 De Saussure, W. G., obit., 673.  
 Desbordes, Col., x, 27.  
 Deschamps, Cardinal, obit., viii, 599.  
 Desert, Great American, vi, 203.  
 Desgodin, Abbé, travels of, ii, 327.  
 Designollo powder, x, 346.  
 Desjardins, Ernest, obit., xi, 714.  
 Deslandes, R., obit., xv, 677.  
 Des Moines, Iowa, xi, 167; river lands, xi, 248; water, xix, 775.  
 Despois, E. A., sketch, i, 230.  
 De Stael, M., x, 16, 17.  
 Detectives, measure for regulating work of, ix, 345.  
 Detlef, Karl. See Bauer, i, 68.  
 Detmold, C. E., obit., xii, 581.  
 Detmold, William, obit., xix, 574.  
 Detroit, Mich., illustration, ii, 5, 9; xi, 167; water, xix, 775.  
 Detwiller, Henry, obit., xii, 581.  
 Deutsch, S., obit., ii, 598.  
 Devan, T., obit., xv, 643.  
 Devens, Charles, sketch, ii, 251; obit., xvi, 617.  
 Devereux, J. H., obit., xi, 674.  
 De Vico's comet, ix, 52.  
 Deville, E. H. S. C., sketch, vi, 212; ix, 120, 809.  
 Deville and Debray, experiments by, iii, 89.  
 Devin, T. C., obit., iii, 636.  
 De Vit, obit., xvii, 590.  
 Devolution, in Parliament, ix, 372.  
 Devon, W. R. C., sketch, xiii, 661.  
 Devonshire, Duke of, obit., xvi, 669.  
 Devrainville, M., invention by, x, 612.  
 Devrient, P., obit., ii, 598.  
 Dew, theory of, xi, 541.  
 Dewar, James, apparatus for producing liquefaction, ix, 435; illustration, 434; experiments, x, 152, 161; xi, 138.  
 Dewey, Nelson, sketch, xiv, 627.  
 Dewing, T. W., ix, 245; xii, 278.  
 De Witt, R. M., obit., ii, 578.  
 Dexter, H. M., obit., xv, 643.

- Deye, Col., i, 4.  
 Deyrolle, invention by, iii, 725.  
 Dharma Rajah, the, x, 496.  
 Dhuleep Singh, xii, 7; obit., xviii, 578.  
 Diamonds in China, iv, 143; artificial, v, 86; the trade, viii, 277; mines in South Africa, ix, 110; x, 135; in Brazil, viii, 72; all kinds, xviii, 641.  
 Diaz, Eugene, i, 230.  
 Diaz, Porfirio, sketch, i, 547; government of, established, ii, 511; recognized by U. S., iii, 12, 551; x, 367.  
 Diaz de la Pena, sketch, i, 230.  
 Dick, A., experiments, viii, 524.  
 Diek, F. W., xi, 537.  
 Diek, R., obit., xv, 643.  
 Dickens, Inspector, x, 129.  
 Dickerson, E. N., sketch, xiv, 628.  
 Dickinson, Donald McDonald, sketch and portrait, xii, 776.  
 Dickson, J. B., obit., i, 631.  
 Dickson's expedition, iii, 354.  
 Dictionaries, new, xvi, 249.  
 Didot, A. F., sketch, i, 230.  
 Diehl, M., x, 27.  
 Dieringer, Rev. F. X., obit., i, 631.  
 Diestel, L. von, obit., iv, 698.  
 Diet, while in training, xii, 668.  
 Dietl, Joseph, obit., iii, 653.  
 Dieulafoy, M., xi, 26.  
 Diez, F. C., sketch, i, 230.  
 Digby, Kenelm H., obit., v, 599.  
 Digestibility of various substances, xii, 676.  
 Digestion, xx, 659; new agent in, vi, 96; experiments, vi, 749; vii, 94, 690; viii, 635; xi, 760; xvi, 736; xviii, 630.  
 Digestive system, the, ix, 658; x, 693; xiii, 693; xiv, 706; xv, 724.  
 Dilettanti, society of, x, 36.  
 Dill, Louis, x, 578.  
 Dillingham, G. W., obit., xx, 569.  
 Dillingham, Paul, obit., xvi, 617.  
 Dillon, John, xii, 333.  
 Dillon, Sidney, obit., xvii, 544.  
 Diman, J. Lewis, obit., vi, 681.  
 Dindorf, W., obit., viii, 599.  
 Dingaan, iv, 853.  
 Dingelstedt, F. von, obit., vi, 692.  
 Dinizulu, King, ix, 114, 115; x, 136, 137.  
 Dinsmore, S. P., obit., vii, 636.  
 Dion, C., obit., iii, 636.  
 Dionysos, discoveries at, xiii, 26.  
 Diorrexine, x, 343, 346.  
 Diphtheria, drug for, x, 301; xvii, 229.  
 Diplomates, dismissed, xiii, 268.  
 Diplomatic Service in China, iv, 146.  
 Diplomatic Correspondence and Foreign Relations of the U. S., i, 231; ii, 251; iii, 242; vi, 212; vii, 192; viii, 278.  
 Direct-tax bill, xiii, 229; xvi, 210, 494.  
 Direct-trade convention, xv, 365.  
 Disasters in 1885, x, 295; in 1886, xi, 287; in 1887, xii, 227; in 1888, xiii, 269; in 1889, xiv, 268; in 1890, xv, 251; in 1891, xvi, 251; in 1892, xvii, 232; in 1893, xviii, 259; in 1894, xix, 241; in 1895, xx, 229.  
 Disciples of Christ, in every volume but viii and ix.  
 Disciplinary Power of Legislative Assemblies, vii, 194.  
 Disease, germ theory of, ix, 495, 653, 663; see also Germ Theory; progress in study of, vi, 552; new, xi, 608.  
 Disestablishment, church, viii, 9; x, 22, 196, 456.  
 Disinfectants, new, i, 93; ix, 272.  
 Dispensary for liquors, South Carolina, xviii, 691.  
 Disraeli, Benjamin, sketches, ii, 251; vi, 213; portrait, ii, 354; effect of death of, vi, 359.  
 Disraeli ministry, South African policy of, ix, 346.  
 Dissection, xiii, 272.  
 Dissocioscope, Tommasi's, vii, 92.  
 Disston, H., obit., iii, 636.  
 Distilled water, experiments with, xii, 675.  
 Distilling, illicit, v, 208.  
 Disturnell, J., obit., ii, 578.  
 Ditson, O., sketch, xiii, 630.  
 Dittmar, assaying, i, 524; ix, 662; invention by, x, 344.  
 Divers, experiments by, viii, 111.  
 Divine, G. R., invention by, x, 346.  
 Divorce, in Connecticut, iv, 301; viii, 254; in Delaware, iv, 306; in Vermont, v, 708; in Massachusetts, vi, 535; viii, 519; in Maine, viii, 509; in New Hampshire, viii, 562; bill on, in France, vi, 311; ix, 342; in Rhode Island, viii, 691; ix, 698; in Pennsylvania, ix, 645; in Kansas, xi, 462; xiv, 271.  
 Dix, Dorothea L., obit., xii, 581.  
 Dix, John A., sketch, iv, 315.  
 Dix, J. W., obit., ii, 578.  
 Dixon, Archibald, obit., i, 615.  
 Dixon, Harold, experiments by, xii, 106, 112.  
 Dixon, N. F., obit., vi, 681.  
 Dixon, W. H., sketch, iv, 316.  
 Djalyeen, taken by Gordon, ix, 301.  
 Djehad, law of, x, 316.  
 Doberek, on binary stars, iii, 87.  
 Docharty, G. B., sketch, xiv, 628.  
 Doeks, improvements to, ii, 279, 280; Thames, in London, v, 244; in South Wales, v, 245; at Hartlepool, v, 244; floating, xii, 257; at Havre, xiii, 301; new, xv, 232; new sectional side-launch, xx, 256.  
 Dodd, Edward, obit., xvi, 618.  
 Dodé, invention by, iv, 134.  
 Dodge, E., obit., xv, 643.  
 Dodge, J. W., obit., xviii, 548.  
 Dodge, Norman W., xi, 346.  
 Dodge, Richard I., obit., xx, 569.  
 Dodge, W. E., sketch, with portrait, viii, 282; statue of, x, 367.  
 Dodworth, H. B., obit., xvi, 618.  
 Dodworth, Thomas, obit., i, 615.  
 Doelsch process, viii, 522.  
 Doering, Prof., xii, 515.  
 Dogali, battle of, xiii, 2.  
 Doggett, D. S., obit., v, 592.  
 Dogs, decision as to tax on, ii, 711; article on best breeds, with illustrations, ix, 254; the Chinese edible, ix, 263; Egyptian, xvi, 22.  
 Dog-running, ix, 262.  
 Dog shelters, xx, 234.  
 Dokpas, the, x, 397.  
 Dolaro, Selma, sketch, xiv, 628.  
 Dolbear, invention by, vi, 258.  
 Dole, Sanford B., port., xix, 343.  
 Dolgorukoff, Prince, obit., xvi, 669.  
 Döllinger, Dr., iv, 647; xii, 644; obit., xv, 678.  
 Dollo, observations by, viii, 436.  
 Dolphin, ease of the, x, 760.  
 Domenichino, sale of pictures of, x, 361.  
 Dominion of Canada, in every volume; map of Western Provinces, viii, 80; boundaries of provinces, ix, 264-266; attempt to repatriate natives of, ix, 676; veto power of government, ix, 266; exploration in, ix, 349; climate of, x, 583; rebellion in the northwest, x, 124; elective franchise, x, 130; fisheries, x, 132.  
 Dominis, J. O., obit., xvi, 670.  
 Dom Pedro, Emperor of Brazil, steel-plate portrait, ii, 75.  
 Donaldson, E., sketch, xiv, 628.  
 Donaldson, H. H., experiments, vi, 95; viii, 632.  
 Donavan, M., obit., i, 631.  
 Don Carlos, defeat of, i, 729.  
 Don, Laura, obit., xi, 674.  
 Donders, experiments by, vi, 272.  
 Dondoukoff-Korsakoff, Prince, x, 9, 10; obit., xviii, 578.  
 Donelly, Dr., x, 455.  
 Dongola, defense of, ix, 297.  
 Dong-son, forts at, battle, x, 25, 27.  
 Doniphan, A. W., obit., xii, 582.  
 Donkin, Mr., xii, 313.  
 Donnelly, A. J., obit., xv, 643.  
 Donnelly, Terence O., iv, 675.  
 Donohoe, M. T., obit., xx, 569.  
 Donovan, C. S., obit., xv, 644.  
 Donyo Egaré, Mount, ix, 347.  
 Doolittle, T. S., obit., xviii, 548.  
 Doomsday-Book, The New, i, 365.  
 Doomsday-Book, ill., xi, 407.  
 Doomsday Celebration, xi, 406.  
 Doran, John, obit., iii, 653.  
 Doré, Gustave, sketch, with portrait, viii, 283.  
 Dorides, Count, xi, 454.  
 Döring, T., obit., iii, 654.  
 Dörpfeldt, W., ix, 23; x, 37; xi, 34.  
 Dorsey, James O., obit., xx, 570.  
 Dorsey, J. W. See Star-Route Trial, vii, 753.  
 Dorsey, Sarah A., sketch, iv, 323.  
 Dorsheimer, W., sketch, xiii, 631.  
 Dosseh, interdiction of the ceremony, vi, 239.  
 Dost Mohammed, family of, v, 3; relations with the British, v, 4; x, 1.  
 Doton, Hosea, obit., xi, 674.  
 Douai, C. D. A., sketch, xiii, 631.  
 Doubleday, Abner, obit. and port., xviii, 548.  
 Doubleday, U., obit., xviii, 548.  
 Doucet, Camille, obit., xx, 608.  
 Douck Hanh, King of Anam, x, 32.  
 Dougall, John, obit., xi, 674.  
 Dougall, J. D., x, 153.  
 Dougherty, Daniel, obit., xvii, 544.  
 Dougherty, John, obit., xi, 675.  
 Douglas, Frederick, v, 585.  
 Douglas, George, obit., xix, 612.  
 Douglas, James, Jr., x, 577.  
 Douglas, J. H., obit., xvii, 545.  
 Douglas, Sir James N., xi, 48.  
 Douglass, Frederick, obit. and port., xx, 570.  
 Douglass, Henry, obit., xvii, 546.  
 Douls, Camille, explorations by, xii, 305; sketch, ix, 660.  
 Doumet, M., x, 155.



- Dove, H. W., obit., i, 698.  
 Dove, John, obit., i, 615.  
 Dover, N. H., xiv, 145.  
 Dow, John M., obit., xvii, 545.  
 Dow, Moses A., obit., xi, 675.  
 Dow, Neal, viii, 664.  
 Dowden, Bishop, xi, 21.  
 Dowell, J. R., obit., i, 615.  
 Dowing, Benjamin, obit., i, 615.  
 Dowling, John, obit., iii, 636.  
 Dowling, Joseph, obit., i, 615.  
 Dowling, J. W., obit., xvii, 545.  
 Dowse, R., obit., xv, 678.  
 Doyle, John, xi, 347.  
 Doyle, Richard, obit., viii, 599.  
 Doyle, Sir F. H., sketch, xiii, 661.  
 Drag-anchor, xvi, 710.  
 Dragoman Pass, fighting at, x, 728, 730.  
 Dragomiroff, Gen., sketch, ii, 259.  
 Drainage, works for, iii, 288; ix, 717; diagram showing faults of, ix, 718.  
 Drais, Baron von, bicycle invented by, ix, 83.  
 Draisine, the, illustration, ix, 83.  
 Drake, Charles D., obit., xvii, 545.  
 Drake, Friedrich, obit., vii, 645.  
 Drake, Sir F., x, 138.  
 Drake, T., obit., xv, 644.  
 Drama, the recent. See Literature, in every volume.  
 Draper, Henry, experiments by, iv, 130; sketch, vii, 218; prize in honor of, ix, 55; xii, 112.  
 Draper, John C., obit., x, 647; xii, 112.  
 Draper, J. W., experiments by, iii, 34; viii, 378; sketch, vii, 219; xii, 36.  
 Draper, Lyman C., obit., xvi, 618.  
 Draper memorial fund, xv, 43.  
 Drayton, T. F., obit., xvi, 618.  
 Dreber, A., obit., i, 631.  
 Dredge, hydraulic, xx, 257.  
 Dredging, in New York harbor, xiii, 302, 304; with dynamite, xviii, 280; of the Mississippi, xix, 494.  
 Dressel, O., obit., xv, 644.  
 Dresser, Horace, obit., ii, 579.  
 Dreuteln, assassination of, iv, 683.  
 Dreutlin, Gen., iv, 777.  
 Drew, Mrs. Daniel, obit., i, 616.  
 Drew, Thomas, sketch, xiii, 631.  
 Drexel, A. J., obit., xviii, 548.  
 Drexel Home, illustration, xiii, 505.  
 Drexel, J. W., sketch, xiii, 631.  
 Drexel, Kate, her new order, xvi, 774.  
 Drift, investigation of, x, 406.  
 Driggs, J. F., obit., ii, 579.  
 Drilling-scow, x, 470, 471.  
 Driven-well patent, xii, 650.  
 Drought in Nebraska, xix, 505.  
 Drouyn de L'Huys, obit., vi, 692.  
 Dropsy, new drug for, ix, 272.  
 Droysen, J. G., obit., ix, 616.  
 Drugs, New, ix, 271; x, 298; xi, 289; physiological action of, ix, 654.  
 Druggists, Association of. See Pharmacy.  
 Drumgoole, J. C., obit., xiii, 632.  
 Drummond, J., obit., ii, 598.  
 Drummond, T., obit., xv, 644.  
 Druses, war with, xv, 805; revolt of the, xx, 726.  
 Drysdale, A. T., obit., xi, 675.  
 Dualine, x, 344.  
 Duallas, the, x, 121.  
 Dubois, Frank L., obit., xx, 571.  
 Dubois, Rev. John, x, 562.  
 Du Bois-Reymond, experiments by, x, 692.  
 Dubray, V. G., obit., xvii, 590.  
 Dubs, J., obit., iv, 699.  
 Dubuclet, A., contested election of, i, 493; ii, 467.  
 Dubuis, Claude M., obit., xx, 571.  
 Dubuque, xi, 168.  
 Duchesne, Col., x, 173.  
 Ducks, in United States, x, 387.  
 Duck Lake, flight, x, 125.  
 Duclaux, E., experiments, x, 157.  
 Duclerc, C. T. E., sketch, xiii, 661.  
 Duclerc ministry, vii, 326.  
 Ducrot, A. A., obit., vii, 646.  
 Dudevand, Madame. See Sand.  
 Dudley, Thomas U., obit., i, 616.  
 Dudley, W. H., obit., xi, 675.  
 Dudley, W. L., discovery by, iv, 137; v, 94, 95; ix, 476.  
 Duell, Robert H., obit., xvi, 618.  
 Duels, challenges to, parliamentary discipline for, vii, 201; punishment for, in the Russian army, x, 20.  
 Dumn, battle of, x, 318.  
 Duer, Lillie, iv, 593.  
 Dufaure, Jules Armand Stanislas, Cabinet of, ii, 320; sketch, vi, 222.  
 Duff, Alexander, obit., iii, 654.  
 Duff, Sir R. W., obit., xx, 608.  
 Dufferin, Lord, in Canada, iii, 246; in India, x, 13, 309, 497.  
 Duffield, A. J., obit., xv, 679.  
 Duffield, George, sketch, xiii, 632.  
 Duffield, Samuel W., obit., xii, 582.  
 Dufour, J. E., obit., xviii, 579.  
 Dufresne, experiments by, vi, 750.  
 Duganne, A. J. H., obit., ix, 604.  
 Dulcigno, contest for, v, 543; surrender, and sketch of, v, 545.  
 Dullert, W. H., obit., vi, 692.  
 Dulles, John Welsh, obit., xii, 582.  
 Dulong, law of relativity, vi, 41.  
 Duluth, Minn., xi, 168.  
 Dumas, Alexandre, obit. and port., xx, 608.  
 Dumas, J. B. A., obit., ix, 273; experiments by, vi, 42; with Benoit, invention by, iii, 279.  
 Dumbreck, Sir D., obit., i, 631.  
 Dumont, Gabriel, x, 125, 129.  
 Dumont, Léon, obit., ii, 598.  
 Dumoulin, M., xii, 680.  
 Du Motay, C. T., sketch, v, 222; inventions, v, 88; viii, 375.  
 Dunant, Henry, xi, 783.  
 Duncan, Francis, sketch, xiii, 661.  
 Duncan, Thomas, obit., xii, 583.  
 Duncker, Maximilian Wolfgang, obit., xi, 714.  
 Dundas, Sir D., obit., ii, 598.  
 Dunham, Dr. C., obit., ii, 579.  
 Dunkers. See Baptists and Brethren.  
 Dunkel, A. K., sketch, xiii, 632.  
 Dunkirk, N. Y., xviii, 157.  
 Duulop, G. K., sketch, xiii, 632.  
 Dunn, John, governor, iv, 126; ix, 114.  
 Dunn, John, in Chinese service, xii, 117.  
 Dunn, Michael, obit., xvii, 545.  
 Dunn, W. McKee, obit., xii, 583.  
 Dunster, E. S., sketch, xiii, 632.  
 Duntou, W. C., obit., xv, 644.  
 Dunwoody, H. C., tables, viii, 528.  
 Dupanloup, sketch, iii, 248.  
 Dupin, Charles, characteristics of, vii, 208.  
 Dupin, Jean Henri, obit., xii, 626.  
 Duplay, M., x, 332.  
 Duplessis, Joseph, xi, 347.  
 Dupont, A. V., obit., xviii, 549.  
 Dupout, S. F., statue, x, 362.  
 Dupont, Henry, sketch, xiv, 628.  
 Düppel, siege of, x, 382.  
 Dupra, experiments by, x, 157.  
 Duprat, Pierre P., obit., x, 659.  
 Duprato, J., obit., xvii, 590.  
 Dupré, Admiral, obit., vi, 692.  
 Dupré, Giovanni, obit., vii, 646.  
 Dupré, Jules, sketch, xiv, 279; Dupuis, A., obit., xvi, 670.  
 Dupuy, Eliza, obit., vi, 681.  
 Duran, Carolus, xii, 276.  
 Durand, Asher Brown, obit. and port., xi, 292.  
 Duraud-Faudel, Dr., classification of mineral waters by, x, 595; xi, 546.  
 Durando, Giacomo, obit., xix, 612.  
 Durango, Col., xviii, 157.  
 Durbin, J. P., sketch, i, 237.  
 Dürer, portrait by, x, 366.  
 Durgee, G., invention by, vii, 530.  
 Durham, xiii, 163.  
 Durham, Joseph, obit., ii, 598.  
 Düringsfeld, Ida, sketch, i, 238.  
 Durnford, Richard, obit., xx, 608.  
 Duruy, Albert, obit., xii, 626.  
 Duruy, Victor, obit., xix, 612.  
 Durzee, A., obit., xv, 644.  
 Du Saulle, H. L., obit., xi, 715.  
 Dusch, A. von, obit., i, 631.  
 Dusmet, G. B., obit., xix, 612.  
 Dussard, Hippolyte, sketch, i, 238.  
 Düsseldorf, illustration, ii, 658; exhibition at, v, 321; xii, 346.  
 Dust-shell of the earth, the, ix, 539.  
 Duties, demand for, in Belgium, v, 55; in Colombia, excessive, v, 16; reduction of, in India, vii, 416; evasions of, viii, 148.  
 Duties, United States, viii, 195, 788; articles duty free, viii, 207; proposed treaty with Mexico, vii, 546.  
 Dutton, Capt. C. E., x, 404.  
 Dutrieux, explorations, iii, 361.  
 Duval, Raoul, obit., xii, 626.  
 Duvergier de Hauranne, L. P. E., obit., ii, 598.  
 Duveyrier, H., obit., xvii, 590.  
 Duyckinck, E. A., sketch, iii, 249.  
 Dwellings, construction of, v, 357; laborers', vii, 220.  
 Dwenger, Joseph, obit., xviii, 549.  
 Dwight, George S., x, 580.  
 Dwight, John S., obit., xviii, 549.  
 Dwight, Theo. W., obit. and port., xvii, 545.  
 Dwight, William, sketch, xiii, 632.  
 Dyeing, by electricity, vii, 90; dyes, viii, 114; fustic, viii, 141; improved, v, 90.  
 Dyer, C. V., obit., iii, 636.  
 Dyer, Thistleton, address, xiii, 46.  
 Dynagraph, xi, 294.  
 Dynamics, ix, 305.  
 Dynamite, manufacture, vi, 223; plots, viii, 415; ix, 377; xiii, 397; gun, with illustration, ix, 273; in London, x, 234; x, 344, 454; gun, xiii, 796; xvi, 558; dredging, xviii, 280.

- Dynamo-electric machine, illustration, vi, 253.  
 Dynamogen, x, 346.
- Eadie, J., obit., i, 632.  
 Eads, J. B., his design for a ship-railway, ix, 313; sketch and port., xii, 228.  
 Eames, Jane A., obit., xix, 574.  
 Eames, Dr., invention by, x, 575.  
 Earle, Pliny, obit., xvii, 546.  
 Earle, William, obit., x, 660.  
 Earle, William H., xiii, 242.  
 Early, Gen. Jubal, x, 427; obit. and port., xix, 574.  
 Earth, the, i, 238; ii, 259; iii, 249; v, 222; vii, 221; mass of, ii, 43; theory of solidity, iv, 419; density of, vii, 35; area and population of the, xvi, 261.  
 Earthquakes, in Austria, i, 59; in Switzerland, v, 677; in Ischia, vi, 451; in Ecuador, viii, 288; in Nicaragua, x, 642; at Lima, ix, 649; in Mexico, x, 590; xii, 504; in Spain, x, 741; in United States, xi, 296; xiii, 158, 288, 550, 830; xiv, 240, 282, 559; xvi, 392; xvii, 73; in Zante, xviii, 370; in Greece, xix, 342.  
 Earthquakes and volcanic disturbances in 1883, viii, 284; at Guayaquil, xii, 232; map showing the extent of, xi, 296; earthquakes of 1663, 1727, 1744, 1755, 1811, 1812, xi, 296-299; illustration of the Charleston, xi, 300, 301; theories of, xi, 301; observations, xi, 302; instruments for recording illustrations, xi, 303.  
 Earths, new. See Chemistry.  
 Earth-tremors, vii, 223.  
 Earth-worms, Darwin on, vi, 224.  
 Eassie, William, sketch, xiii, 661.  
 East Africa, xv, 264; xvi, 263; xvii, 241, 300; xviii, 269; xix, 245; xx, 237; German, xx, 240.  
 Easter Island, ix, 275.  
 Eastern Churches, ix, 277.  
 Eastern question, the, ii, 261; iii, 252; v, 224; maps, i, 751, 754; iii, 722, 729; v, 225; conference on, i, 771; ii, 281, 723; Russia's declaration of war, ii, 282; policy of France, ii, 307; iii, 344; contest for Dulcigno, v, 543; new phase, vi, 839; Turkey and Germany, vii, 802; discussed in Hungary, ii, 379; in Italy, ii, 409; iii, 458; iv, 526; in England, ii, 362, 367; iii, 397; v, 331, 333, 335, 343; enforcing reforms in Asia Minor, iv, 833; Turco-Grecian dispute, v, 345; Montenegro frontier, v, 542; in Austria, ii, 55; iii, 43, 44; xi, 69; in Germany, iii, 378; in Greece, iii, 403; relation to Bulgaria, iii, 67; to Persia, iv, 724; Berlin Congress, iii, 255; treaty between England and the Porte, iii, 258; Russia held by the European League, viii, 705.  
 Eastern Roumelia, iv, 324; Constitution of, v, 227; proposed union with Bulgaria, v, 67, 68, 228; insurrection in, v, 229; x, 108, 714.  
 East Harbor, Me., cottage at, illustration, xii, 364.  
 East Indies, Dutch, xvi, 564; xx, 525.  
 East Orange, N. J., xviii, 168.  
 Eastman, Harvey G., obit., iii, 636.  
 Eastman, Joel, obit., xi, 675.  
 Eastman, M. E., obit., ii, 579.  
 Eastman, T. C., obit., xviii, 549.  
 Easton, Pa., xvii, 110.  
 East River, Bridge, viii, 311; illustration, iii, 281; tunnel, xix, 540.  
 Eaton, Amos B., obit., ii, 579.  
 Eaton, Daniel Cady, obit., xx, 571.  
 Eaton, Hosca Ballou, obit., xii, 583.  
 Eaton, L., obit., xv, 645.  
 Eaton, Margaret L., sketch, iv, 326.  
 Eau Claire, xiii, 163.  
 Ebel, Col. J. W., port., xx, 515.  
 Eberhard, Rt. Rev. M., obit., i, 632.  
 Eberlin, x, 398.  
 Ebers, George, x, 35, 36.  
 Ebersberg, O. F., obit., xi, 715.  
 Ecclesiastical courts, viii, 8.  
 Ecclesiastical funds, rights over the Bernard affair, viii, 57.  
 Eckles, D. R., sketch, xiii, 633.  
 Eclipse of April 16, 1893, xviii, 46.  
 Eclipse of the sun, vii, 33; viii, 20; x, 49; xi, 49; xii, 41.  
 Eclipses. See Astronomy.  
 Economical Council, created in Prussia, v, 640.  
 Ecuador, in every volume; sectional jealousy, i, 241; rebellion, 241; map, ii, 267; views in, illustrations, i, 241; iii, 260; revolutionary warfare in, i, 242; ii, 266, 268; ii, 260; vii, 225; viii, 287, 288; ix, 281; xx, 242; eighth constitution of, vii, 225; volcanic eruptions, ii, 268; x, 303; xi, 306; earthquake, viii, 288; xi, 281; xii, 232; awarding of contracts, iv, 328; closing of schools, v, 231; debt, vi, 228; brutality to prisoners, x, 303; treatment of foreigners, x, 303; xi, 304; gold mines, xi, 305; religious intolerance, ix, 282.  
 Eddy, H. T., ix, 44.  
 Eddy, Zachary, obit., xvi, 618.  
 Eddystone lighthouse, undermined, ii, 276; the new, iii, 286; iv, 343; vii, 283.  
 Edelsheim-Gynlai, Baron Leopold, obit., xviii, 579.  
 Edgell, H. E., obit., i, 632.  
 Edgerton, Joseph Ketchum, obit., xviii, 549.  
 Edhem Pasha, sketch, ii, 268.  
 Edison, T. A., sketch, iii, 261; analysis of his genius by G. B. Prescott, iii, 262; inventions by, i, 518; the phonograph, ii, 638; vi, 252, 256; improvements by, viii, 304; electric railway, viii, 677; observations by, iii, 34; the megaphone, iii, 537; micro-tasimeter, iii, 563; lamp, iv, 335; ix, 305; steam dynamo, with illustration, ix, 308; vii, 270, 275.  
 Edmonds, Richard, obit., xi, 715.  
 Edmondstone, J., obit., xi, 715.  
 Edmunds, G. F., sketch, v, 231.  
 Edmunds law, ix, 791; x, 764, 773.  
 Edmunds-Tucker act, the, xii, 789.  
 Edoux, M. L., invention, vi, 246.  
 Edson, Franklin, ix, 589; x, 640.  
 Education, and illiteracy in the United States, statistics, etc., vii, 225; technical, in Saxony, vi, 229; technical, in Pennsylvania, iii, 680; iv, 719; vi, 549; in Massachusetts, xii, 233; in New Jersey, v, 564; xii, 238; vi, 410; iv, 663; reform in Russia, viii, 708; religious, i, 67, 364, 583, 704; iii, 579; iv, 77, 773, 825; v, 44, 54, 56; vi, 58, 828; vii, 591, 775; Old Catholics on, ii, 622; Leo XIII on, vi, 792; Bible-reading in schools, ii, 182; v, 380; reactionary law in Austria, viii, 47; Ferry bill in France, iv, 390; v, 281; denounced, iv, 394; Episcopal, v, 638; in Ireland, iii, 403; iv, 453; new law in Japan, iv, 529; higher, vi, 49; vii, 31, 339, 481, 503, 536, 796; Magyar school, v, 370; Greek and Bulgarian, ii, 372; Indian, i, 400; Afghan, iv, 7; colored schools, ii, 697; iv, 538, 563, 588; vi, 7, 727; Boston system, iv, 602; New York system, iv, 677; xii, 234; in Missouri, xii, 236; in Illinois, 236; in Ohio, 236; in Maryland, 237; in Pennsylvania, 237; North Carolina bill, iv, 688; qualifications of teachers, iv, 577; v, 564; vi, 574; normal schools, iii, 621; iv, 845; vi, 470; reform schools, v, 567; vi, 463; free high-schools, iii, 511; in Canada, viii, 539, 585, 610; changes in Great Britain, vi, 373; right to exclude pupils, iii, 430; case in Philadelphia, vi, 793; in New Mexico, xii, 544; geography in, xii, 316; industrial, xii, 232; bequest for, xii, 663; of Indians, 386; compulsory, in Germany, xi, 390; in Hawaii, xii, 350; in Nebraska, xii, 576; attitude of Mormons toward, in Idaho, xii, 372; conscience clause of, ix, 12; secularization of, in Belgium, ix, 78; of women, recent progress in, xi, 306; national aid to, 263; in India, xii, 382; statistics of, xvi, 842; xvii, 762. And see the articles on the States.  
 Education, Industrial, xii, 232.  
 Education, recent works on. See Literature, in every volume.  
 Education, United States Bureau of, xix, 248.  
 Edward, Thomas, obit., xi, 715.  
 Edwards, Amelia B., x, 35; obit., xvii, 590.  
 Edwards, Henri Milne-, obit. and portrait, x, 304.  
 Edwards, Henry, obit., xvi, 618.  
 Edwards, J. N., sketch, xiv, 629.  
 Edwards, Sir B., obit., i, 632.  
 Edwards, William H., obit., xix, 574.  
 Edwards, W. W., obit., i, 616.  
 Eels, James, obit., xi, 676.  
 Egan, W. B., obit., iii, 636.  
 Egerton, invention by, ii, 498.  
 Eggert, F. X., sketch, i, 242.  
 Eggertz, experiments by, vi, 97.  
 Eggleston, B., sketch, xiii, 633.  
 Eggleston, T., ix, 477.  
 Egypt, in every volume; maps, vii, 252; viii, 291; ix, 287; aims of the powers in, ix, 290, 291; brigandage in, ix, 286; religion in, ix, 279; benefits of English rule in, xii, 242; finances of, and exploration in, see Egyptian



- Chronology, Egyptian Exploration, and Egyptian Finances; archaeological survey, xvii, 12; discovery of a new race in, ill., xx, 28.
- Egyptian Chronology, vii, 255.
- Egyptian Conference, ix, 289.
- Egyptian exploration, ix, 20; exploration fund, x, 35; xi, 27; xii, 18; xiii, 28. See Archaeology.
- Egyptian Finances, i, 244; ii, 269; iii, 268; iv, 329; Khedive's decree, iv, 331; v, 233; vi, 232; ix, 282, *et seq.*; French and English intervention, vii, 236, 250; new scheme, vii, 363; Italian feeling on, vii, 437; viii, 292; Anglo-French agreement, ix, 288. See Egyptian War.
- Egyptian Monuments, vii, 258; ix, 19.
- Egyptian War, the, causes leading to, vii, 232; intervention of French and English, 236; bombardment of Alexandria, 244; conference at Constantinople, 244, 248; campaign, 251; Egyptians defeated, 254; questions of settlement, viii, 289-297; political trials, 297; amnesty, 298; ix, 292, *et seq.*
- Egyptians, modern, illustration, ii, 271.
- Egyptological and Assyriological Research, vii, 255.
- Ehninger, J. W., sketch, xiv, 629.
- Ehrbar, F., invention by, i, 518.
- Ehrenberg, C. G., sketch, i, 248.
- Ehrenfeuchter, obit., iii, 654.
- Ehrlich, L., x, 159.
- Eichberg, Julius, obit., xviii, 549.
- Eichens, F. E., obit., ii, 599.
- Eichwald, K. E., obit., i, 632.
- Eiffel Tower, the, xiii, 309, 310.
- Einwald, Herr, x, 137.
- Eira, cruise of, vi, 325; vii, 334.
- Ekert, Gustav, obit., xvii, 590.
- Ekin, James A., obit., xvi, 619.
- Ekmann, G., obit., i, 632.
- Ekmeen, relics at, ix, 22; necropolis of, x, 32.
- Elatea, inscribed stone, x, 37.
- Elbers, H. D., invention by, xi, 537.
- Elbirin-Kir Mountains, x, 67.
- El Coco, engagement at, x, 466.
- Elder, John, x, 62.
- Elder, P. P., nominated, xiii, 462.
- Elder, Robert, obit., xii, 583.
- Eldridge, Dr. E., obit., i, 616.
- Election frauds, xiii, 440, 841; xiv, 35.
- Election laws, x, 321; federal, xix, 224.
- Election sermons, vi, 534.
- Elections: presidential, of 1876, i, 298, 779; of 1868, x, 432; of 1880, v, 702; of 1884, ix, 149, 210, 774; x, 228; of 1888, xiii, 799; of 1892, xvii, 755; proposed amendment regarding, i, 132, 158; Pres. Grant on, i, 685; disqualifications of candidates, i, 702; bill on counting votes, ii, 137; iii, 167; iv, 207; vi, 176; ix, 210; debate on rights at, iv, 194, 226; on marshals, v, 152; electoral vote, x, 228; regulation for counting the electoral vote, xii, 165; bill on counting votes, ii, 137; President's message on, ii, 163; work of Electoral Commission, ii, 169; ix, 627; xi, 820; reports on frauds, iii, 712; Tilden on, iii, 717, 802; Anderson trial, iii, 494; of Greek patriarch, xii, 773; special, in Rhode Island, xii, 714; Crawford County plan of, xii, 247; Clarion County plan of, xii, 248; Australian system, vii, 246; counting the votes, xiv, 212; comparative tables of, xiii, 799-828.
- Election riots, i, 71; v, 22, 204, 275; xix, 495.
- Elections, contested, i, 297; ii, 455, 694, 748; iii, 334; iv, 394, 532, 582; v, 486; vii, 564; proceedings in, xii, 384, 386; State acts to prevent frauds and corruption, ii, 515, 572, 748; iv, 108, 497, 601; v, 202, 418, 717; vi, 205, 535; viii, 410, 567; power of Congress touching, viii, 474; Federal interference, ii, 710; iv, 561; primary, New York, bill, vii, 600; contested in the Congress of the United States, xiii, 235.
- Elections, Laws, Customs, and Theories of, xii, 244; of Austria, vii, 46; of Italy, vii, 438.
- Electoral Reform in Belgium, xviii, 74; xix, 77; in Austria, xix, 65.
- Electrical energy, storage, vii, 264.
- Electrical Exhibition, ix, 304.
- Electric engineering, xv, 287.
- Electricity, i, 248; xix, 655; xx, 651; dimensions of iron in current, i, 251; applications of, i, 518-520, 740; ii, 497, 498; effect on plants, iii, 725; exhibition at Paris, vi, 252; recent theories, vi, 239; measurement, vi, 259; possible applications, vi, 548; xi, 545; xii, 494; applied to the treatment of ores, 485; x, 578; in welding, xii, 486; xiii, 536; xiv, 549, 698; xv, 536, 715; exhibition, xiv, 586; lighting, 812; xvi, 730; xviii, 621.
- Electric launches, xviii, 282.
- Electric Light, nitric acid from, iv, 135; vegetation under, v, 237.
- Electric Lighting, iii, 269; v, 238; illustrations, v, 239, 240; Edison's, iv, 335; systems, vi, 252; ix, 304, 515; progress of, vii, 268; act of Parliament on, vii, 366; progress, viii, 302; use in France, i, 520; candles and lamps, illustrations, iii, 271-274; the alliance machine, illustrations, iii, 275-278.
- Electric locomotive, xviii, 281.
- Electric motors, i, 251; ix, 307, 309.
- Electric propeller, xx, 637.
- Electric propulsion, xviii, 280.
- Electric railways, viii, 675; ix, 310.
- Electrolysis, Damage by, xix, 737.
- Electroplating, ii, 498; vii, 533; with aluminum, xii, 483.
- Elements, new, iii, 86; iv, 137; xi, 139; nature of, iii, 91; iv, 133; vi, 240; constitution of the, ix, 120; table of atomic weights, vi, 41; families, vi, 42.
- Elephants, Indian, use of, in African exploration, iii, 362.
- Elfving, Nere A., xvi, 619.
- Elgin, Ill., xv, 126.
- El Hadsh, sketch, i, 570.
- Elio, Joaquin, sketch, i, 252.
- Eliot, George, sketch, v, 241.
- Eliot, S. H., xi, 545.
- Eliot, William G., obit., xii, 584.
- Elisycff, Dr., obit., xx, 609.
- Elixir of life, xiv, 287.
- Elizabeth, N. J., xi, 169; bankrupt, iv, 669.
- Elkhart, Ind., xvii, 111.
- Elkin, observations by, viii, 26; ix, 47.
- Elkins, Stephen B., sketch and port., xvi, 831.
- Elks. Benevolent and Protective Order of, xx, 248.
- Ellena, Vittorio, obit., xvii, 590.
- Ellet, Mrs. E. F., sketch, ii, 272.
- Elliot, Charles, obit., xvii, 546.
- Elliott, E. B., sketch, xiii, 633.
- Elliott, George W., xvi, 619.
- Elliott, J., observations, iii, 37.
- Elliott, J. II., D. D., obit., ii, 579.
- Elliott, J. M., murder, iv, 541.
- Elliott, H. W., vii, 7.
- Elliott, W., Jr., obit., xv, 645.
- Elliott, W. L., sketch, xiii, 633.
- Ellis, E. John, sketch, xiv, 629.
- Ellis, George, obit., xix, 574.
- Ellis, John Millott, obit., xix, 575.
- Ellis, Sumner, obit., xi, 676.
- El Mahdi. See Mahdi.
- Elmira, N. Y., xi, 169; Reformatory, xii, 703; xix, 528.
- Elmore, H. M., obit., iv, 693.
- El Obeid, taken by El Mahdi, viii, 300.
- El Paso, Tex., xv, 126.
- Elser, Louis, obit., x, 647.
- Elsinore, Kronborg castle at, illustration, ii, 250.
- Ellsler, Fanny, obit., ix, 310.
- El Teb, battle of, ix, 293, 295.
- Elton, Capt., discovery, iii, 363.
- Eltzbacker, experiments by, x, 157.
- Elwart, A. A. E., obit., ii, 599.
- Ely, Alfred, obit., xvii, 546.
- Ely, J. S., experiments by, vii, 690; viii, 635.
- Ely, Nathan C., obit., xi, 676.
- Ely, Minn., xiii, 163.
- Ely, Marehioness, obit., xv, 679.
- Elze, Karl, sketch, xiv, 660.
- Emancipation, in Brazil, viii, 67; xii, 73; xiii, 105; in Cuba, x, 215.
- Emanuel, M., obit., v, 592.
- Embezzlement, act on, in Connecticut, iii, 216.
- Embroidery, ix, 248.
- Emerald, the largest, x, 179; artificial, xviii, 644.
- Emerson, Ralph Waldo, sketch, vii, 277.
- Emery-wheels, xii, 248.
- Emigration, German, vii, 348; xiv, 368; to Palestine, viii, 614; state-aided, from Ireland, viii, 418; of coolies from India, viii, 440; from Italy, viii, 449. See Chinese and Exodus.
- Emin Pasha (Dr. Schnitzler), x, 394; xi, 312, 367; xii, 250, 301; sketch, xiii, 295; his expedition, xvi, 266.
- Emine, N. O., obit., xvi, 670.
- Emma Kaleleonalani, obit., portrait, and house, x, 326.

- Emmerich, Dr., x, 800.  
 Emmerich, R., obit., xvi, 670.  
 Emmet, Joseph K., obit., xvi, 619.  
 Emmons, S. F., x, 404; xi, 538.  
 Emnonsite, new mineral, xii, 106.  
 Emott, J., obit., ix, 604.  
 Emperor of China, xix, 122.  
 Emperor of Japan, port., xix, 387.  
 Emperor Wilhelm, reconciliation with Prince Bismarck, xix, 318; speech, xix, 319.  
 Emperors, meeting of three, ix, 64, 356; xi, 391; meeting of two, x, 69, 70.  
 Employers' liability, ix, 379, 432.  
 Emporia, Kau., xv, 126.  
 Emu, the, illustration, ii, 51.  
 Encke, his estimate of the sun's distance, ix, 49; his comet, x, 50.  
 Endicott, William C., sketch, x, 757; portrait, 759.  
 Engel, Prof., x, 154; invention by, 345.  
 Engelhard, J. A., sketch, iv, 339.  
 Engelmann, T. W., ix, 517.  
 Engels, Friedrich, obit., xx, 609.  
 Engineering, in every volume but xvi and xix.  
 Engines, solar, vi, 251; improvements in steam, ii, 494, 495; vi, 545; the water-gas, x, 334.  
 English, the, in Asia, vi, 732; ix, 714; in Africa, ix, 363; x, 137, 795, 796; in Sumatra, ix, 558; benefits of their rule in Egypt, xii, 242. See also under Africa and Asia in articles on Geographical Exploration.  
 English Channel Tunnel Panic, vii, 284.  
 English, Earl, obit., xviii, 550.  
 English, J. E., sketch, i, 203; obit., xv, 645.  
 Engravings, famous collection of, xii, 277.  
 Enliliedjian, Abbé, obit., xi, 715.  
 Enlistment Act, British foreign, x, 171.  
 Eno, John C., ix, 329.  
 Enoch, W. H., obit., xviii, 550.  
 Enraght, Rev. W., case of, vii, 17.  
 Ensilage, xvi, 709. See Silos, vi, 808; an analysis of, ix, 127.  
 Entail, law of, exchanges, x, 457, 522.  
 Enterio-Chlorophyll, ix, 658.  
 Entomological Club, the, xviii, 31.  
 Entomologists, Association of Economic, xviii, 31.  
 Envelopes, paper, xi, 734; illustrations, xi, 735, 736, 737; stamped, special-request, and letter-sheet, xii, 686.  
 Eolian Harp, x, 607.  
 Eosin, i, 102.  
 Ephesus, temple at, xiv, 20.  
 Epidemic Diseases in 1883, xviii, 317; xiii, 311; sanitary control of, vii, 286; maps of infected districts, vii, 291, 292; prevention of the spread of, x, 506.  
 Episcopal Church in the United States, xiii, 708; xiv, 720; xv, 749; xvi, 762; xvii, 673; xviii, 658; in Japan, xviii, 13.  
 Equalla Jim, chief, x, 121.  
 Equatorial Coudé, the, ix, 47.  
 Equatorial provinces, xiii, 294.  
 Equites Singulares, barracks of, xi, 35.  
 Erdmann, J. E., obit., xvii, 590.  
 Eretria, tombs at, xvi, 18.  
 Erichsen, A. L. von, obit., i, 632.  
 Erriesson, John, sketch, xiv, 296; port., frontispiece.  
 Erie Canal, xiii, 606.  
 Erie Custom-House, illustration, xii, 120.  
 Erk, Ludwig, obit., viii, 599.  
 Erman, G. A., obit., ii, 599.  
 Ernst II, Duke of Saxe-Coburg-Gotha, obit., xviii, 579.  
 Errett, Russell, obit., xvi, 619.  
 Ersari Turkemans, the, x, 7.  
 Erskine, Admiral, ix, 639, 640.  
 Erskine, John, obit., xx, 571.  
 Eruptious, volcanic, xi, 66, 303, 557, 653; xvii, 489.  
 Erysipelas, viii, 753.  
 Erythra, xv, 458.  
 Erythro-ceralloides, xi, 140.  
 Escourt, Sir T. H., obit., i, 632.  
 Eserial, the, illustration, i, 728.  
 Esmonde, Sir J., obit., i, 632.  
 Espana, Capt., x, 141.  
 Espartero, Duke, sketch, iv, 348.  
 Espen, T. E., observations by, vi, 39; vii, 40; viii, 27.  
 Esquiline Hill, necropolis at the, xi, 34.  
 Esquiros, H. A., sketch, i, 258.  
 Este, D. K., obit., i, 616.  
 Estee, M. M., sketch, vii, 82.  
 Estorge, J. L., obit., v, 592.  
 Estrup, J. B. S., ix, 253; x, 290, 292; attempt to assassinate, 293.  
 Étex, Antoine, sketch, xiii, 661.  
 Ether, the, xvi, 725.  
 Etherization, rectal, ix, 747; in cholera, x, 800.  
 Ethnology, bureau of, xii, 15.  
 Ethylene, for liquefying oxygen, x, 152.  
 Etna, eruption of, viii, 286; xi, 380; new crater, 380.  
 Ettmüller, E. L., obit., ii, 599.  
 Eulenberg, Count, obit., vi, 692.  
 Eulenberg, Prof., investigations by, x, 689.  
 Eulexia, x, 151.  
 Euonymus, x, 299.  
 Euphorbia pilulifera, x, 299.  
 Europe, in volumes i to v inclusive.  
 Evangelical Alliance, the, i, 261; ii, 282; iv, 350; xiv, 300; xvi, 274; on intolerance in Bohemia, iv, 351; ix, 316.  
 Evangelical Association, in every volume but ix, xi, xvi, and xvii.  
 Evangelical Union of Scotland, iii, 294; xiv, 300; xv, 168.  
 Evans, Frederick William, obit., xviii, 550.  
 Evans, Marian. See Eliot, George, v, 241.  
 Evans, William, obit., iii, 654.  
 Evanston, University Hall at, illustration, ii, 385.  
 Evarts, William, obit., iii, 636.  
 Evarts, W. M., sketch, ii, 284; etched portrait, ii, 284; speech on Seward, i, 717.  
 Eve, Dr. P. F., obit., ii, 579.  
 Events of 1883, viii, 321; of 1884, ix, 317; of 1885, x, 334; of 1886, xi, 323; of 1887, xii, 262; of 1888, xiii, 318; of 1889, xiv, 301; of 1890, xv, 288; of 1891, xvi, 276; of 1892, xvii, 256; of 1893, xviii, 286; of 1894, xix, 257; of 1895, xx, 258.  
 Everest, not the highest mountain, ix, 349, 543, 544.  
 Everett, experiments, ii, 500.  
 Everett-Green, Mrs. M. A. (Wood), obit., xx, 609.  
 Everglades, the, viii, 342.  
 Eversley, C. S. L., sketch, xiii, 622.  
 Everts, W. W., obit., xv, 645.  
 Evictions, in Ireland, xii, 339; xiv, 391.  
 Evolution and the Church, xx, 689.  
 Ewald, Prof., experiments, x, 693.  
 Ewell, B. S., obit., xix, 575.  
 Ewer, F. C., obit., viii, 588.  
 Ewing, Charles, obit., viii, 588.  
 Examinations for civil service. See Reform in the Civil Service, viii, 634; ix, 690.  
 Exchange, Copenhagen, illustration, i, 228.  
 Exchange, foreign, xiii, 325.  
 Exercise, physiology of, vii, 688; of infants, 689.  
 Execution by electricity, xiv, 598.  
 Executive mansion, Mrs. Harrison's plan for enlargement, xvii, 332.  
 Exhibition, Centennial, i, 22, 262, 685, 778; appropriation for, 193-202; illustrations of, 264, 265, 272, 273, 275, 277, 278, 279; leather, in Berlin, ii, 352; paper, in Berlin, iii, 381; arts, in Japan, ii, 414; Australian, ii, 52; iv, 55; v, 39, 40; Paris, iii, 294; Egyptian contribution to Paris, iii, 268; appropriation of Denmark, ii, 249; of electricity at Paris, vi, 252; Atlanta cotton, vi, 260; Southern, at Louisville, viii, 464; in Santo Domingo, viii, 713; in Calcutta, ix, 407; New Orleans, ix, 573; Colonial, xi, 60; in Antwerp, x, 91; in Hungary, x, 73; Paris, of 1889, xii, 297; South Sea, xiv, 609; in Amsterdam, xx, 525; in Halifax, xx, 540; in Tennessee, xx, 715.  
 Exhibitions, picture. See Fine Arts.  
 Exner, experiments by, vi, 748; vii, 688.  
 Exodus of colored people, iv, 354, 537, 634; v, 417; vi, 812.  
 Expedition to the Upper Welle, xviii, 187.  
 Expeditions, Natanga, xviii, 189.  
 Exploration, xiii, 65, 97, 106, 225.  
 Explorers, see under Geographical Exploration, in every volume; murder of, iv, 6.  
 Explosions, boiler, causes and prevention of, vi, 259; experiments, vii, 296.  
 Explosives, ii, 626; iii, 93; iv, 131; German law on, ix, 357; x, 342; new, x, 153; xi, 140; high, xvi, 552.  
 Exposition, Antwerp, xix, 12; view, xix, 13.  
 Exposition, Centennial. See Exhibition, Centennial.  
 Exposition, Industrial, in Oregon, xx, 632.  
 Exposition, International Cotton, at Atlanta, vi, 260; of 1895, xx, 269.  
 Exposition, midwinter, in California, xviii, 120; xix, 91; xx, 105.  
 Exposition, New Orleans, ix, 573.  
 Exposition, Paris, iii, 294; xiv, 341. And see World's Fair.



- Exposition, World's, of 1900, xx, 308.
- Express companies, liability of, ii, 753; v, 14.
- Extradition treaties, i, 232, 361, 733; difficulty with Mexico, ii, 513, 712; with Spain, ii, 699; decisions on, iii, 473; v, 585; ease of Randazzo, vi, 451; United States and Belgium, vii, 67; viii, 157. See Winslow.
- Eyeck, Jan van, xi, 346.
- Eye, the human, attempts to replace, x, 742; xiii, 754.
- Eye-sight, its defects and treatment, vi, 271.
- Eytinge, experiments by, vii, 38.
- Fabbrizzi, N., obit., x, 660.
- Faber, P. C. F., obit., ii, 599.
- Fabre, Père J., obit., xvii, 591.
- Fabrice, Count von, obit., xvi, 670.
- Faccio, F., obit., xvi, 670.
- Factory-inspection, xii, 549.
- Factory legislation, xiv, 583.
- Fahlberg, Dr. C., xii, 109.
- Fahnejeim, invention by, x, 344.
- Faidier, Charles, obit., xviii, 579.
- Faidherbe, L. L. C., sketch, xiv, 660.
- Faience, viii, 641.
- Fair, James G., obit., xix, 575.
- Fairbanks, Franklin, obit., xx, 571.
- Fairbanks, Horace, 797; sketch, xiii, 633.
- Fairbanks, T., obit., xi, 676.
- Fairechild, Charles Stebbins, sketch and portrait, xii, 775.
- Fairfax, D. M., obit., xix, 575.
- Fairfield, Francis Gerry, obit., xii, 585.
- Fairhaven, Wash., xvi, 155.
- Fairlie, R. F., obit., x, 660.
- Fair Oaks, battle of, x, 558.
- Fair-Trade League, xi, 328.
- Fairy rings, ix, 127.
- Faith-Cure, xi, 329.
- Faithfull, Emily, obit., xx, 609.
- Fakoos, x, 36.
- Falchi, Dr. I., archaeological discovery, xi, 35.
- Falk laws, the, iii, 736; iv, 773; vi, 792; vii, 357, 358 (note); viii, 395.
- Falk, Prof., xii, 673.
- Falke, J. F. G., obit., i, 632.
- Falkenhayn, Count, iv, 60.
- Falkland Islands, vi, 274; xiii, 37; xv, 407; xvi, 346; xvii, 327.
- Fall River, Mass., xi, 169; water, xix, 775.
- Fallières, M., viii, 366.
- Fallows, Samuel, sketch, i, 698.
- Falls, M. N., obit., i, 616.
- False Prophet, the. See Mahdi.
- Famines, in China, i, 110; ii, 100; iii, 98; xviii, 150; in India, i, 404; ii, 42, 392; iii, 436; iv, 494; vi, 419; in Brazil, iii, 64; in Egypt, iv, 334; caused by goats, in India, ix, 406; in Asia Minor, xii, 774; xiv, 141, 425, 572; partial, xvii, 349; in Ireland, xv, 295; in Russia, xvi, 784.
- Famine, in Persia, v, 623; in Turkey, v, 690; in Iceland, vii, 191; in Highlands, viii, 418.
- Fanfani, P., obit., iv, 699.
- Faneuil Hall, illustration, i, 512.
- Fanalep Island, x, 139.
- Faran, J. J., obit., xvii, 546.
- Fargo, William C., obit., iii, 636.
- Fargo, William G., obit., vi, 682.
- Fargus, F. J., obit., x, 347.
- Faribault, Minn., xvi, 155.
- Faris, Ahmed Effendi, obit., xii, 627.
- Farley, F. A., obit., xvii, 546.
- Farley, J. T., sketch, ii, 285; obit., xi, 677.
- Farmer, Moses G., obit., xviii, 550.
- Farmers', Minn., Board of Trade, iv, 623; Cal., convention of, vii, 82; xi, 806; xiii, 460, 618; xiv, 9, 307; xvi, 284; congress, xi, 330; xvii, 263; xviii, 293; xix, 267; xx, 277; in Texas, xx, 720; alliance, xv, 299; league, xvi, 858.
- Farms and live-stock in the United States, vii, 298; abandoned, xv, 515, 599; xvi, 575; xvii, 215.
- Farms and mortgages in Texas, xix, 740.
- Faroe Channel, ridge in, vii, 331.
- Farr, E. W., obit., v, 592.
- Farre, Arthur, obit., xii, 627.
- Farre, Gen., sketch, iv, 386.
- Farrell, Thomas, obit., v, 592.
- Farrelly, Philip, obit., iii, 636.
- Farwell, N. A., obit., xviii, 550.
- Fassiller, discovery at, xiii, 33.
- Fata Morgana, the, illustration, xi, 565.
- Fat-cells, vii, 689; controversy on the formation of, ix, 273.
- Fathers of the Holy Spirit, the, x, 712.
- Fatigue, experiments on the laws of, xii, 676.
- Faucher, Julius, obit., iii, 654.
- Faulkner, C. J., obit., ix, 605.
- Faulkner, L. B., obit., xv, 645.
- Faunee, John, obit., xvi, 619.
- Faure, C. A., inventions by, vi, 254; vii, 265.
- Faure, François Félix, sketch and port., xx, 280.
- Faurie, G. A., new process with alumina, xii, 482.
- Fäustle, Johann, obit., xii, 627.
- Fave, Ildephonse, obit., xix, 612.
- Favre, A., experiments by, iv, 379.
- Favre, J. C. G., sketch, v, 255.
- Favre, L., work on the St. Gothard Tunnel, iii, 290.
- Faweett, Henry, sketch, ix, 323.
- Faweett, Millicent G., ix, 323.
- Fawkes, Capt. H., obit., i, 633.
- Fawsitt, Miss Amy, obit., i, 616.
- Fay, F. B., obit., i, 616.
- Fay, Julius A., obit., xvi, 620.
- Fayerweather, D. B., obit., xv, 645.
- Fayerweather, Lucy, obit., xvii, 546.
- Fayetteville, capture of, x, 429.
- Fazy, J. J., sketch, iii, 314.
- Featherstone, W. S., obit., xvi, 620.
- Featherstonehaugh, G. W., x, 401.
- Fechter, C. A., sketch, iv, 358.
- Federal election bill, xvi, 232.
- Federal jurisdiction. See Law, vi, 477.
- Federation, British, ix, 380.
- Federation in Australasia, xviii, 51; xx, 65.
- Fee and salary law, in Iowa, xviii, 407; in Indiana, xix, 370.
- Feeding-stuffs, digestibility of various, xii, 676.
- Fecjee, cannibalism in, i, 53; war-
- canoe, illustration, ix, 117; controversy over land-titles, x, 419.
- Fehling, H., obit., x, 660.
- Feild, E., obit., i, 633.
- Feizi Pasha, sketch, ii, 285.
- Félix, C. J., obit., xvi, 670.
- Felkin, Mr., on technical education in Saxony, vi, 229.
- Fellows, John F., obit., xii, 585.
- Fenians, supposed conspiracy of, vi, 370; intended raid into Canada, x, 431.
- Fenn, Mary, obit., xi, 677.
- Fenton, Reuben E., obit., x, 348.
- Fenyés, A., sketch, i, 281.
- Ferdinand, King, obit., x, 660.
- Ferdinand of Bulgaria, marriage of, xviii, 116.
- Ferdinand, Prince, xii, 80.
- Ferenz, Rev. Joseph, i, 778.
- Ferghana. See Khokan, i, 775.
- Fergus, Andrew, experiments by, ix, 728.
- Fergus Falls, Minn., xviii, 158.
- Fergusson, Sir W., obit., ii, 599.
- Ferig Pasha, x, 319; his death, 320.
- Ferments in fruits, vii, 92.
- Fernkorn, A., obit., iii, 654.
- Ferns, ix, 95.
- Ferran, Dr., cholera experiments of, x, 797, 798.
- Ferranti's invention, vii, 269, 270.
- Ferrari, Giuseppe, sketch, i, 282.
- Ferrari, meteorological observations by, xi, 543; xii, 491.
- Ferrel, William, obit. and port., xvi, 620.
- Ferrer, M. W., sketch, xiii, 633.
- Ferrie, William, method for obtaining ammonia, viii, 114.
- Ferrier, Capt. J. M., obit., i, 616.
- Ferrier, I. P., experiments by, vi, 748; ix, 661; discovery, vii, 37.
- Ferrieri, Cardinal, death of, xii, 717.
- Ferris wheel, the, xviii, 285.
- Ferriss, Orange, obit., xix, 576.
- Ferrous sulphide, as plant food, x, 158.
- Ferry-boat, double-ender-screw, xiii, 301; new type of, xv, 282.
- Ferry Bridge, at Bilbao, xviii, 279.
- Ferry, Elisha P., obit., xx, 572.
- Ferry, right of the United States to acquire a, iv, 847.
- Ferry, J. F. C., sketch, iv, 387; bill of, v, 281; fall of ministry of, vii, 324; Cabinet, vii, 367; ix, 340, 341; quoted, 583; Chinese policy of his government, x, 26; Egyptian policy, x, 310, 311; resignation, x, 375; demonstration against and attempted assassination of, xii, 297.
- Ferry, Jules, obit., xviii, 579.
- Fertilizer, vi, 275; of S. C., vi, 814; phosphorite, viii, 701.
- Festettis, Count Charles A., obit., xvi, 620.
- Feuadent, G. L., obit., xviii, 550.
- Feuchtwanger, experiments by, viii, 522.
- Feud, an ancient, ix, 345.
- Feuerstack, experiments, viii, 633.
- Feuille, Felix M., viii, 357.
- Feuillet, O., obit., xv, 679.
- Feutsch, E., obit., ii, 599.
- Fever, action of remedies, vii, 690; new remedies, ix, 271; x, 300; xi, 289.
- Fever, yellow, iii, 315; iv, 359;

- vii, 293; map of infected district, vii, 292. See also Health, iv, 466; Epidemic Diseases, viii, 319; and Germ Theory, iii, 387.
- Feyen-Perrin, François, sketch, xiii, 662.
- Fez, British mission to, xvii, 477.
- Fibers, tests for distinguishing animal from vegetable, xii, 110.
- Fiebte, I. H., obit., iv, 699.
- Fiction, recent works of. See Literature in every volume.
- Field, B. H., obit., xviii, 551.
- Field, Cyrus West, sketch and port., xvii, 264; obit., xix, 576.
- Field, David Dudley, obit., xix, 576.
- Field, Mrs. David Dudley, obit., i, 616.
- Field, Eugene, obit., xx, 572.
- Field, George R., obit., iii, 637.
- Field, Matthew D., obit., xx, 572.
- Field, Moses W., sketch, xiv, 629.
- Field, S. D., inventions, viii, 677.
- Fields, James T., sketch, vi, 283.
- Fiertz, Dr., xii, 482.
- Figner, Vera, ix, 711.
- Figueron, Gen., x, 467.
- Figuier, G. L., obit., xix, 612.
- Fiji, xx, 70.
- Fiji Islands, xiii, 67; xiv, 57; xv, 49; xix, 62. See Feejee.
- Fildes, Luke, x, 365.
- Fillmore, Caroline, obit., vi, 682.
- Finances of Egypt. See Egyptian Finances.
- Finances of India, censure of management of, iv, 492, 494.
- Finances of the United States, in every volume. See also Commerce, etc., vi, 120; vii, 110; and for finances of the various countries and States, see articles on the countries and States in each volume.
- Financial crises over the world, ii, 109; of the United States, xviii, 599.
- Financial depression, in Peru, i, 665; in Chili, iii, 12; in England, iv, 175; in Germany, iv, 180; cause of, iv, 163.
- Financial review of 1883, viii, 332; of 1884, ix, 323; of 1885, x, 348; of 1886, xi, 332; of 1887, xii, 264; of 1888, xiii, 321; of 1889, xiv, 308; of 1890, xv, 301; of 1891, xvi, 285; of 1892, xvii, 268; of 1893, xviii, 294; of 1894, xix, 268; of 1895, xx, 280.
- Findlay, Ohio, xiv, 145.
- Fine Arts in 1884-'85, x, 358; in 1886, xi, 342; in 1887, xii, 274; in 1888, xiii, 332; in 1889, xiv, 318; in 1890, xv, 310; in 1891, xvi, 293; in 1892-'93, xviii, 306; at World's Fair, xviii, 312; in 1894, xix, 276; in 1895, xx, 289.
- Finland, ix, 706; x, 720.
- Finlay, W. H., discoveries by, vii, 37; xi, 57.
- Finley, Lieut., John P., x, 581.
- Finotti, J. M., sketch, iv, 370.
- Finsch, Dr., x, 681.
- Fique fiber, new material for textile fabrics, xii, 140.
- Fire-arms, etc., Alabama law against carrying, vi, 5.
- Fire-balls, xii, 494.
- Fire-escape, ills., xii, 665, 666.
- Firemen, inventions for, i, 518.
- Fire-place and chimney, Galton's, illustrations, v, 360, 362.
- Fires, Brooklyn Theatre, i, 605; Czech Theatre, vi, 50; Vienna Theatre, vi, 51; in Quebec, vi, 221; in Michigan, vi, 586; in Haverhill, vii, 520; in Galicia, xi, 73; in Hungary, xii, 53.
- Firman, Louis, x, 381.
- Firuzhuhi tribe, the, x, 8.
- Fischer, Dr. G. A., x, 394; obit., xi, 715.
- Fischer, Gustavus, obit., xviii, 551.
- Fish, culture and preservation of, iv, 668; xv, 596; as a food, viii, 348, 791.
- Fish, Asa I., sketch, iv, 370.
- Fish, Benjamin, obit., v, 592.
- Fish Commission, U. S., viii, 791; x, 764.
- Fish Creek, battle of, x, 125.
- Fish-culture in the United States, with illustrations, viii, 791.
- Fish, Hamilton, obit., xviii, 551.
- Fish, Henry C., obit., ii, 579.
- Fischer, Charles, obit., xvi, 621.
- Fisher, Charles H., obit., xiii, 633.
- Fisher, E. J., obit., xv, 646.
- Fisher, G. J., obit., xviii, 551.
- Fisher, H. G., obit., xv, 646.
- Fisher, Sir J. W., obit., i, 633.
- Fisheries, Chinese, in California, iii, 71; protection in California, v, 75; salmon, in Oregon, iii, 671; vii, 670; viii, 612; shad, in Maryland, iv, 591; on the Connecticut River, vi, 639; New Jersey, vii, 598; French, in Newfoundland, xi, 406; xiii, 510, 706, 846; xv, 240, 263; xvi, 568, 601; treaty, xiii, 217; Alaskan, xiv, 212.
- Fisheries of United States in 1880, vii, 309.
- Fisheries, U. S., statistics, viii, 795; xvi, 847.
- Fishery Convention, International, vii, 590.
- Fishery Exhibition at Berlin, v, 321; representation of United States at, v, 150.
- Fishery Questions, between United States and Canada, ii, 15, 253; iii, 247; iv, 15; v, 218; vi, 776; x, 132; xi, 131; payment and protest, iii, 242; President Hayes on, v, 643; Fortune Bay outrage, v, 213; x, 132; French Shore Question, xi, 614; riots, xii, 66; bill to protect, xii, 178; review of the subject from the time of the Revolutionary War, xii, 280-285; treaties, 281, 282; recent disputes, 282; the American case, 283; retaliatory legislation, 283; diplomatic arrangements, 284; French rights, 284; North Pacific dispute, 284.
- Fishing, in British Columbia, salmon, xviii, 109; seal, xviii, 109.
- Fisk, C. B., obit., xv, 646.
- Fisk, P. K., obit., xv, 646.
- Fitch, Graham N., obit., xvii, 546.
- Fitchburg, Mass., xv, 126.
- Fitton, James, obit., vi, 682.
- Fitts, J. F., obit., xv, 647.
- Fitz, Benjamin R., obit., xvi, 621.
- Fitzau, experiments by, vi, 41.
- Fitzgerald, Sir J. F., obit., ii, 599.
- Fitzroy, Capt., vii, 183.
- Fitzgerald, Prof., address, xiii, 45.
- Fitzhugh, W. E., sketch, xiv, 629.
- Fitzmaurice, Lord E., ix, 296.
- Fitzpatrick, W. J., obit., xx, 609.
- Five-cent-fare bill, the, ix, 147.
- Five Forks, battle of, x, 429, 430.
- Flag, Corean, xiv, 239; new United States, 314.
- Flagg, W. C., obit., iii, 637.
- Flageolet-player, x, 613.
- Flame, luminosity of, iii, 85; temperature, 93.
- Flameng, F., x, 358, 363; xii, 275.
- Flanders, castle of the counts of, illustration, iii, 56.
- Flasch, Kilian, obit., xvi, 621.
- Flatters, G., explorations, v, 293.
- Flaubert, G., obit., v, 599; x, 358.
- Flavia, Publicia, statue of, ix, 27.
- Flax and hemp statistics, xvii, 764.
- Flax, culture of, xi, 532.
- Fliegel, R. E., observations, v, 290; ix, 348; x, 393; obit., xi, 715.
- Fleischer, H. L., sketch, xiii, 662.
- Fleischer, K. M., obit., i, 633.
- Fleitman, Dr., discoveries by, vi, 542; viii, 522.
- Fleteher, Alice C., ix, 16, 44; x, 45.
- Fleteher, A. E., xii, 106, 108.
- Fleteher, T., experiments, xi, 742.
- Fleury, E. F., obit., ix, 616.
- Flexible metallic tubes, xvi, 711.
- Flint, Austin, obit. xi, 348.
- Flint, Charles L., sketch, xiv, 629.
- Flint, Franklin F., obit., xvi, 621.
- Flint, Mich., xviii, 158.
- Flood, James C., sketch, xiv, 639.
- Flood Rock, x, 473; illustrations of excavations, x, 473, 474; explosion, 475; in Oregon, xix, 634.
- Floods, in China, i, 110; viii, 128; xviii, 150; in South America, i, 333; in Germany, i, 348; viii, 397; in Hungary, i, 388; iv, 477; in Nevada, iii, 601; in France, i, 318; in Illinois, v, 380; protection against, in Mississippi, iv, 635; in Arkansas, vii, 31; in Tyrol, vii, 59; in Italy, vii, 438; in Louisiana, vii, 480; xviii, 464; in Missouri, xviii, 499; in the Ohio Valley, viii, 339; in Pennsylvania, xviii, 610; xiv, 531, 598, 688; xv, 509; xvii, 471; in Oregon, xix, 634.
- Floquet cabinet, xiii, 346; xiv, 333.
- Floquet, M., ix, 342; x, 376; xii, 291.
- Florence, Ala., xiv, 146.
- Florence, W. J., obit., xvi, 621.
- Florida, in each volume; illustrations, i, 296, 297, 300; presidential election of 1876, excitement and investigation, i, 297-306; ii, 297; State election investigations, iii, 334; iv, 374; v, 274; frauds, 275; issue of bonds, iv, 371; Indian Trust Fund bonds, v, 269; railroads, iv, 373; v, 272; vii, 312; xii, 287; climate, iii, 331, 332; ship-canal project, iv, 377; vi, 312; ix, 332; harbor improvement appropriations, v, 273; need of coast defenses, xii, 288; proposed reclamation of swamp-lands, vii, 312; viii, 342; ix, 332; xii, 287; cold weather in, xi, 350; minerals in, xii, 288; constitutional convention, x, 368; population, xv, 319; by races, xvi, 300; phosphates, xviii, 315.



- Flotow, F. von, obit., viii, 599.  
 Flourens, theory of, viii, 634.  
 Flower, a State, xvi, 580.  
 Flower, W. H., port., xiv, 39.  
 Floyd, Gen. John B., x, 423.  
 Floyd, Sally B., sketch, iv, 378.  
 Fludyer, Sir S., obit., i, 633.  
 Fluorine, free, vi, 99.  
 Flute, mechanical, x, 618.  
 Fluting-machine, extension of patent, xii, 650.  
 Fly River, explored, iv, 409.  
 Flying Dutchman, the, illustration, xi, 567.  
 Flywheel, a wire, xx, 640.  
 Fogg, George G., sketch, vi, 301.  
 Fogs and Clouds, Genesis of, v, 275; fog-signals, v, 447; viii, 719.  
 Foix, Count of, ix, 345.  
 Foiey, Thomas, sketch, iv, 379.  
 Folger, Charles J., sketch, v, 576, and ix, 334; portrait, vii, 807.  
 Folkhard, Charles W., xi, 111.  
 Fonseca, D., sketch xiv, 327.  
 Fonseca, M. D. La, obit., xvii, 591.  
 Foltz, Philipp von, obit., ii, 600.  
 Fonblanque, E. B., obit., xx, 609.  
 Fontaine, locomotive of, vi, 511.  
 Fontpertuis, Ad. de, vii, 70.  
 Foo-Chow, Chinese picture of the battle of, ix, 142.  
 Food-Preservation, vii, 315.  
 Fontes, Pereira de Mello, A. M., obit., xii, 627.  
 Foods, nutritive values of, vi, 670; viii, 342; charts showing composition of, 344, 345; adulteration of, see Adulteration.  
 Foot-and-Mouth Disease, viii, 348.  
 Football, xx, 297.  
 Foot-bath, a new, xvi, 705.  
 Foote, Caleb, obit., xix, 576.  
 Foot, Samuel A., obit., iii, 637.  
 Foote, Henry S., sketch, v, 276.  
 Foote, R. E., obit., iv, 693.  
 Forbes, David, obit., i, 633.  
 Forbes, Edwin, obit., xx, 572.  
 Forbes, George, on planets, v, 34; xi, 55.  
 Forchhammer, Paul W., obit., xix, 613.  
 Foreite, x, 345.  
 Forekenbeck, M., obit., xvii, 591.  
 Ford, Budd G., obit., iv, 693.  
 Ford, Edward L., obit., v, 592.  
 Ford, Gordon L., obit., xvi, 622.  
 Ford, John Bruce, obit., xix, 576.  
 Ford, John T., obit., xix, 576.  
 Ford, Mary A., obit., i, 616.  
 Ford, Melbourne H., obit., xvi, 622.  
 Ford, Mr., xi, 49.  
 Ford, Rev. James, obit., ii, 600.  
 Fordyce, Sir J., obit., ii, 600.  
 Forefathers' day, xv, 320.  
 Foreign Exchange. See under Financial Review.  
 Foreign Contract Labor, x, 231.  
 Forel, observations by, viii, 526.  
 Forepaugh, A., obit., xv, 647.  
 Forest fires, xix, 490.  
 Forestry, viii, 349; ix, 796; in Mexico, ix, 493; x, 635.  
 Forestry Association, midsummer meeting of, xix, 519.  
 Forestry reserve, Pacific, xviii, 755.  
 Forests, area of, in Europe, vii, 317; destruction of, v, 650; viii, 164; cedar and pine, in Mexico, viii, 538; Adirondack, viii, 356, 576; ix, 582; influence on climate, xi, 544; preservation of, in South Africa, x, 135; xvi, 583; preservation of, in New York State, xviii, 523.  
 Forests of United States, vii, 316.  
 Forge, A. De La, obit., xvii, 591.  
 Forgeries, the Coeard, xviii, 323.  
 Formation of Mountains, iv, 379.  
 Formes, Karl, sketch, xiv, 660.  
 Formosa, xx, 376; the French in, ix, 140, 141, 338; x, 30, 171; xv, 115. See China, x, 171, 172.  
 Forney, John W., sketch, vi, 302.  
 Forrest, Catherine N., obit., xvi, 622.  
 Forrest divorce case, the, ix, 626.  
 Forrest, Nathan B., sketch, ii, 299.  
 Forsberg, G. A., ix, 478.  
 Forster, Dr. Bernhard, xii, 649.  
 Förster, Heinrich, obit., vi, 693.  
 Forster, John, sketch, i, 306.  
 Forster, Sir George, obit., i, 633.  
 Forster, W. E., sketch, v, 276; obit., xi, 350.  
 Forsyth, Col. John, obit., ii, 579.  
 Forsyth, Rev. John, obit., xi, 677.  
 Fort Donelson, siege of, x, 423.  
 Fort Ethan Allen, xix, 764.  
 Fort Fisher, siege of, x, 428, 429.  
 Fort Harrison, capture of, x, 428.  
 Fort Henry, surrender of, x, 423.  
 Fort Madison, Iowa, xviii, 159.  
 Fort Pitt, x, 128, 129.  
 Fort Pulaski, accident in, xix, 311.  
 Forts, Chinese, capture of, x, 25.  
 Forth Bridge, viii, 315; ix, 312; x, 328; ill., x, 329; xv, 279.  
 Fort Riley, Kan., xiv, 151.  
 Fort Scott, Kan., xv, 127.  
 Fort Smith, Ark., xvii, 111.  
 Fortune Bay outrage, v, 218; xii, 282.  
 Fortune, Robert, obit., v, 599.  
 Fort Wayne, xiii, 164.  
 Fort Worth, xiv, 146.  
 Fossil Birds, vi, 303.  
 Foster, Abby Kelly, obit., xii, 585.  
 Foster, Charles, iv, 705; vi, 702; sketch and port., xvi, 830.  
 Foster, C. H., obit., xx, 572.  
 Foster, Charles J., obit., viii, 589.  
 Foster, H. A., sketch, xiv, 630.  
 Foster, Joel, obit., ix, 605.  
 Foster, J. W., x, 402; sketch and port., xvii, 745.  
 Foster, Joshua, sketch, xiii, 634.  
 Foster, Lafayette S., sketch, v, 277.  
 Foster, Melvin, sketch, xiii, 634.  
 Fostoria, xv, 127.  
 Fothergill, Jessie, obit., xvi, 670.  
 Foucard, M., x, 37.  
 Foucault, invention by, iii, 270.  
 Foucher, Count, obit., xvi, 670.  
 Foulis, Sir H., obit., i, 633.  
 Fouqué, F., experiments by, x, 156.  
 Fouratt, Enos, sketch, xiii, 634.  
 Fournaux, invention by, x, 616.  
 Fournier, Edouard, obit., v, 599.  
 Fournier, Félix, obit., ii, 600.  
 Fournier, G., invention by, v, 93.  
 Fournier, Barry de, sketch, ii, 319.  
 Fowle, D. G., nominated, xiii, 619; obit., xvi, 623.  
 Fowler, Orson S., obit., xii, 585.  
 Fowler, Sir R. N., obit., xvi, 670.  
 Fox, D. M., obit., xv, 647.  
 Fox, Edward, obit., vi, 683.  
 Fox, George L., obit., ii, 579.  
 Fox, Henry J., obit., xvi, 623.  
 Fox-hound, the, ix, 258.  
 Fox-Jencken, Catharine, obit., xvii, 546.  
 Fox-Kane, Margaret, obit., xviii, 552.  
 Fox, Sir William, obit., xviii, 580.  
 Fox-terrier, the, ix, 261.  
 Fra Angelico, painting of, x, 366.  
 France, in each volume; army law and organization, i, 309; illustrations, views in, i, 313, 314, 316, 317; ii, 308, 310, 312, 314, 316, 317; iii, 344, 346; iv, 390, 393; map of Paris, ii, 306; amnesty debate, i, 315; bill passed, iv, 389; v, 284; liberty of the press, ii, 305; Catholics in, ii, 306; iii, 348, 349; resignation of M. Simon, ii, 307; De Broglie cabinet, 308; political excitement, 307-316; political map of France published, 314; MacMahon's proclamation, ii, 315; great number of political prosecutions under De Broglie ministry, iii, 343; resignation of MacMahon and election of Grévy, iv, 388; colportage bill, iii, 343; changes in Senate, 347; new cabinet, iv, 386; election of Gambetta, 388; stormy debate, 391; vote of condemnation of De Broglie ministry, 390; African policy, v, 280; Bastille celebration, v, 285; address by Gambetta, vi, 310; divorce bill, vi, 311; ix, 342; Tunis and Algeria, vi, 310; vii, 322; viii, 358; ix, 339; xii, 298; Gambetta re-elected, vii, 324; his resignation, 325; his death, 326; Freycinet ministry, 325; resignation, 326; Duclere ministry, 326; pretenders, 326; viii, 365, 366, 367; x, 355; Duclere's resignation, viii, 366; Ferry ministry, viii, 367; socialist agitations, 368; x, 378; labor legislation, viii, 369; anti-clerical legislation, 370; war in Tonquin and Madagascar, 370; ix, 338, see Tonquin and Madagascar; Annan, ix, 337; xii, 298; Morocco, ix, 339; annexation of Cambodia, and in Africa, 339; relations with Germany, 339; revision of the constitution, 340; recidivists, 342; x, 378; taxes on wheat and sugar, ix, 343; economic crisis, 344; silk industry, 345; change of government, x, 375; Brisson cabinet, 376; tariff war with Roumania, 377; Alsace-Lorraine, 380; colonies, 381; xi, 360; xii, 298; new cabinet, De Freycinet, xi, 352; expulsion of the princes, xi, 355; Boulanger, xi, 356; xii, 292; reconstitution of the cabinet, xi, 357; strikes, 358, 359; resignation of Grévy and election of Sadi-Carnot, xii, 288; Goblet ministry, 290; Rouvier cabinet, 291; irritation against Germany, 293; manifesto of the Count of Paris, 293; sale of decorations, 294; Wilson scandal, 294; presidential crisis, 295; Tirard cabinet, xii, 297; treaty with China, xii, 117; claims to the lower Congo, x, 191; new tariff, xvi, 308; area and population, xvii, 280; quarrel with Santo Domingo, xix,

- 212; boundary dispute with Brazil, xx, 96; *Bourgeois cabinet*, xx, 306; exposition of 1900, xx, 308; the Ribot ministry, xx, 304.
- France, Robert H., obit., xi, 677.
- Franceschi, Jules, obit., xviii, 580.
- Franchi, A., obit., iii, 654.
- Franchise in Great Britain, ix, 374; x, 451, 452.
- Francis II. of Sicily, obit., xix, 613.
- Francis, Charles Joseph, of Austria, obit., iii, 654.
- Francis, Charles S., obit., xii, 586.
- Francis, J. B., obit., xvii, 547.
- Francis Joseph, Emperor, iii, 41; silver wedding of, iv, 67; portrait on steel, xi, frontispiece.
- Francis, Joseph, obit. and port., xviii, 552.
- Francis, Lewis, obit., ii, 580.
- Francis, Sir Philip, obit., i, 633.
- Franciscine, xi, 290.
- Franeke, Adolphe, obit., xviii, 580.
- Franchieu, Marquis, obit., ii, 600.
- Franco-Chinese treaty, xx, 142.
- Franco-German War. See Chanzy, viii, 107.
- Franke M., xii, 108.
- Frankenstein, F. G. A., obit., xv, 679.
- Franking privilege, vi, 138.
- Frankland, Percy F., experiments, ix, 119; x, 149, 160, 161.
- Franklin, J. R., obit., iii, 637.
- Franklin, Sir John, search for, ii, 324; v, 298.
- Franecky, E. F., obit., xv, 679.
- Fransoli, J., obit., xv, 647.
- Franz, Robert, obit., xvii, 591.
- Fraser, A. T., xi, 542.
- Fraser, J., obit., x, 660.
- Fraser River, hell-gate gorge, xviii, 108.
- Fraternal Congress, xiv, 346.
- Fraternity of Jesus, the, ii, 22.
- Frauds, alleged, of officials in Georgia, iv, 421.
- Fraunhofer's lines, xii, 412.
- Frayne, Frank I., obit., xvi, 623.
- Frazer, James Somerville, obit., xviii, 552.
- Frederick William, Prince (emperor) of Germany, iii, 372; portrait, xii, 321; illness of, 327.
- Frederick William, Prince of Hesse, obit., i, 633.
- Fredericks, C. De F., obit., xix, 577.
- Fredericksburg, battle of, xi, 416.
- Fredericton, N. B., xiv, 146.
- Fredo, Count, obit., i, 633.
- Free and Open Church Association, xiii, 13.
- Free Baptist Church, xix, 293; xx, 309.
- Free Church of England, i, 319; ii, 321.
- Free Church of Scotland, xiii, 704. See under Presbyterians.
- Free Churches, Congress of, xx, 207.
- Free Coinage, xvii, 202.
- Freedom of Worship bill, the, x, 634.
- Free Evangelical (English) Churches, Congress of, xvii, 296.
- Freeland, xix, 247.
- Freeman, E. A., obit. and port., xvii, 591.
- Freeman, John D., obit., xi, 677.
- Freeman, Mrs. E., obit., i, 616.
- Freeport, Ill., xvii, 112.
- Free Religious Association, vii, 326.
- Free-silver Conference, xix, 495.
- Free thinkers, Congress of, v, 55.
- Free-Will Baptists, xiv, 67. See Baptists.
- Freezing mixtures, xi, 428; xiii, 147.
- Freiligrath, F., sketch, i, 319.
- Frelich, Martin, sketch, xiv, 630.
- Frelinghuysen, F. T., sketch and portrait, vii, 806; letter of, 192; obit., x, 648.
- Fremont, E., obit., i, 633.
- Fremont, John C., portrait, frontispiece; sketch, xv, 338.
- French advances in Central Africa, v, 280; vii, 335, 336; ix, 168; in Eastern Africa, ix, 339; x, 392, 393; in Tonquin. See Tonquin.
- French Artists' Exhibition. See under Fine Arts.
- French, Daniel C., x, 362.
- French Canadians, exodus of, xviii, 661.
- French, Capt. John, x, 126.
- French, John R., obit., xv, 647.
- French language in schools, xiv, 677.
- French, Rev. M., obit., i, 616.
- French settlements in Dahomey, xvii, 221.
- French, Virginia L., obit., vi, 653.
- French Spoliation Claims, x, 242.
- Freppel, C. E., obit., xvi, 671.
- Freer, Sir Bartle, ii, 85, 86; iv, 121, 125; sketch and portrait, ix, 345.
- Frère, Edouard, obit., xi, 715.
- Frère-Orban ministry, iii, 56; v, 56; ix, 78.
- Fresend, Ernst, xii, 674.
- Freshet in Alabama, xvii, 3.
- Freshets, xiii, 841.
- Freshfield, Douglas, xii, 313.
- Fresno, Cal., xiv, 147.
- Freyinet, Charles Louis de Saulces, ii, 320; sketch, iv, 394; v, 281; ministry, vii, 325; x, 376; xi, 352, 410, 411.
- Freyer, Alfred, obit., xvii, 592.
- Freytag, Gustav, obit., xx, 609.
- Freytag, theory of, vii, 93.
- Frias, F., obit., vi, 693.
- Friedberg, H., sketch, iv, 740.
- Friedländer, Dr., xii, 671.
- Friedländer, I., obit., iii, 637.
- Friedrich, Carl, obit., x, 382.
- Friedrich, Wilhelm Nicolaus Karl, sketch, xiii, 354; his diary, 368.
- Friendly, or Tonga, islands, treaty with Germany, ii, 53; annexation, viii, 31.
- Friends, in every volume but v, ix, xiv, xv, and xvi; yearly meetings, reports of, in each volume; project for woman's college, ii, 322; progressive party, vi, 312; viii, 371; Evangelistic work, vii, 327; question of church ordinances, x, 383; conference of American, London, and Dublin yearly meetings, xii, 299.
- Fries, Elias M., sketch, iii, 350.
- Fricse, Richard, x, 363.
- Frieze, Henry S., sketch, xiv, 630.
- Frisby, E., observations by, viii, 20, 26.
- Frischmuth, W., ix, 476.
- Fritel, Pierre, x, 363.
- Frith, W. P., x, 365.
- Fritsch, Prof., experiments, x, 694.
- Fritschel, G. L. W., sketch, xiv, 630.
- Froebel, Julius, obit., xviii, 580.
- Frog Lake massacre, x, 125.
- Frohmüller, ix, 272.
- Frölich, Dr., ix, 49.
- Frome, E. C., obit., xv, 679.
- Frontier disputes. See Boundaries, disputed.
- Frontin, Dr. P. de, xii, 314.
- Frost, Rufus S., obit., xix, 577.
- Frost, William E., obit., ii, 600.
- Frothingham, I. H., obit., xv, 647.
- Frothingham, O. B., obit., xx, 572.
- Frotscher, K. H., obit., i, 633.
- Froude, James A., quoted, xiii, 7; sketch and port., xix, 295.
- Fruit-Growers, Convention of in Mississippi, iii, 573.
- Fruit Growers' and Shippers' Association in California, xx, 104.
- Fruitlands, xiii, 11.
- Fruits, George, obit., i, 617.
- Fry, B. St. J., obit., xvii, 547.
- Fry, James B., obit., xix, 577.
- Fry, W. and H., ix, 246.
- Frye, Speed S., obit., xvii, 547.
- Fryer, Pauline C., obit., xviii, 552.
- Fuegians, the, x, 41.
- Fuel, heat-value of, iii, 92; gaseous, x, 383.
- Fucal cartridge, invention of, xii, 651; illustration, 652.
- Führich, J., sketch, i, 321.
- Fukusawa, the leather, vii, 441.
- Fulahs, tribe of the, v, 291.
- Fulford, Mr., xii, 310.
- Fuller, George, obit., ix, 605.
- Fuller, Jerome, obit., v, 593.
- Fuller, J. B., experiments by, viii, 305.
- Fuller, John W., obit., xvi, 623.
- Fuller, Melville Weston, sketch and port., xiii, 359.
- Fuller, Rev. Richard, sketch, i, 321.
- Fuller, Samuel, obit., xx, 573.
- Fuller, William H., obit., iii, 637.
- Fullerton, Lady G., death of, x, 713.
- Fullerton, W., Jr., sketch, xiii, 634.
- Fulton, E., obit., iii, 637.
- Function, localization of, ix, 661.
- Fung, ix, 94; 498; edible, xv, 350.
- Funk, H., obit., ii, 600.
- Furgusson, James, obit., xi, 716.
- Furlonger, Arthur, x, 122.
- Furnaces, gas, viii, 372; iron, ix, 479.
- Fursch-Madi, Emma, obit., xix, 577.
- Fur-seals. See Alaska, vii, 7.
- Furstenburg, Cardinal, obit., xvii, 592.
- Fusion-disk, vi, 313.
- Fustel, Numa, sketch, xiv, 660.
- Fyfe, R., invention by, x, 734.
- Fyfe, C. A., obit., xvii, 592.
- Gaboon, the, ii, 7; vi, 328, 329.
- Gabun and the French Congo, xvii, 293.
- Gade, N., obit., xv, 679.
- Gadsden, xiv, 148.
- Gage, S. F., investigations by, vii, 689.
- Gaiffe, M., x, 576.
- Gainesborough, sale of a, x, 365.
- Gaines's Mill, battle of, x, 559.
- Gainesville, Tex., xvi, 155.



- Gakdul Wells, illustration, x, 294.  
 Galibi house on the Maroni, xx, 750.  
 Galapagos Islands, xi, 304.  
 Galehos, the, x, 2.  
 Galesburg, xv, 127.  
 Galiber, Admiral, ix, 460.  
 Galicia. See Austria-Hungary.  
 Galimart, N. A., obit., v, 599.  
 Galitzin, Prince, art collection of, xii, 278.  
 Gallaher, J. S., obit., ii, 580.  
 Gallait, Louis, obit., xii, 627.  
 Galland, Pierre, obit., xvii, 593.  
 Gallatin, A. R., obit., xv, 647.  
 Gallatin, James, obit., i, 617.  
 Gallaudet, Mrs. S. F., obit., ii, 580.  
 Gall-bladder, extirpation of, viii, 752; secretions of the, xii, 678.  
 Galle, Dr., experiments by, vii, 36.  
 Galleher, John N., obit., xvi, 623.  
 Gallagher, A. C. N., obit., xx, 610.  
 Galley, Edmund, v, 113.  
 Galliard, E. S., obit., x, 648.  
 Gallie acid, test for, v, 95.  
 Gallieni, Lieut.-Col., xii, 305.  
 Galliera, Duke of, obit., i, 633;  
   Duchess of, sketch, xiii, 662.  
 Gallipoli, illustration, ii, 736.  
 Gallin, equivalent of, iii, 89; in  
   American blends, v, 95; dis-  
   covery of, ix, 119; method of  
   isolating, x, 159.  
 Gally, Merritt, inventions by, x,  
   612, 618, 619, 620.  
 Galt, Sir Alexander Tilloch, obit.,  
   xviii, 580.  
 Galton, Sir Douglas, port., xx, 39.  
 Galton, Francis, invention by, iii,  
   726; x, 47; experiments, xiii,  
   421.  
 Galveston, Texas, xi, 169; deep  
   harbor at, xv, 800.  
 Galway, Viscount, obit., i, 633.  
 Gamage, H. T. B., obit., xvii, 547.  
 Gama, Saldanha da, obit., xx, 610.  
 Gama, Vaseo da, tercentenary of,  
   v, 628.  
 Gambetta, sketch and portrait, vi,  
   313; speech of, ii, 312; mani-  
   festo and prosecution, ii, 316;  
   inaugural, vi, 310; defeat of  
   *scrutin de liste* bill, vi, 311, 807;  
   course and death of, vii, 326; in-  
   fluence of, viii, 365; scheme of,  
   ix, 57, 341.  
 Gamble, John R., obit., xvi, 623.  
 Gambling, bucket-shop, xiii, 283.  
 Game-laws, in Parliament, v, 341;  
   of the United States, xi, 361;  
   new, xvii, 515.  
 Game of the United States, x, 386;  
   preservation of, x, 391; in Wash-  
   ington, 772.  
 Games, old, resembling baseball,  
   x, 77.  
 Gangee, Mr., invention by, i, 517.  
 Gammell, W., sketch, xiv, 630.  
 Gamond, Thomé de, obit., i, 633.  
 Ganetsky, J. S., obit., xii, 627.  
 Ganglbauer, C., sketch, xiv, 660.  
 Gannett, Henry, x, 404.  
 Gansevoort, Judge P., obit., i,  
   617.  
 Gape, Admiral J., obit., i, 634.  
 Garabit viaduct, viii, 316; xiii,  
   310.  
 Garaschanin, x, 727, 728; resigna-  
   tion of, xii, 735.  
 Garbage, burning, vi, 249.  
 Garbard, J. H., obit., i, 617.  
 Garber, Silas, i, 578.  
 Garbett, James, obit., iv, 699.  
 Garcelona, Alouzo, iii, 516.  
 Garcia, Gen., killed, x, 590.  
 Garein, M., invention by, ix, 736.  
 Garde, Lieut., x, 398.  
 Gardiner, Addison, obit., viii, 589.  
 Gardiner, F., sketch, xiv, 630.  
 Gardiner, S. B., obit., vii, 636.  
 Gardner, A. K., i, 617.  
 Gardner, Dorsey, obit., xix, 578.  
 Gardner, H. J., obit., xvii, 547.  
 Gardner, W. S., sketch, xiii, 634.  
 Garfield, Eliza B., sketch, xiii, 634.  
 Garfield, J. A., sketches, v, 286;  
   vi, 317; portrait, v, 15; letter of  
   acceptance, v, 700; inaugural,  
   vi, 543; Blaine on policy of, vi,  
   845; vii, 192; memorial, the,  
   vii, 121; Blaine's oration, vii,  
   127; compensation to physicians  
   of, vii, 809; statue of, x, 367;  
   xii, 280.  
 Garfield Mountains, ix, 34.  
 Garibaldi, sketch and portrait, vii,  
   328; gift to, i, 421; resignation  
   of, v, 410; death, vii, 438.  
 Garland, A. H., ii, 35; sketch, x,  
   757; portrait, x, 761.  
 Garlington, E. A., relief expedition  
   under, viii, 420; court of inquiry  
   on, 424; ix, 38.  
 Garner, W. T., obit., i, 617.  
 Garnet, the, x, 13.  
 Garnett, Alexander Yelverton Pey-  
   ton, sketch, xiii, 634.  
 Garnett, C. F. M., obit., xi, 677.  
 Garnier, J., obit., vi, 693.  
 Garnier, M. J., experiments by,  
   viii, 113, 523.  
 Garnier-Pagès, sketch, iii, 350.  
 Garrard, K., obit., iv, 693.  
 Garrett, Emma, obit., xviii, 552.  
 Garrett, J. W., obit., ix, 605.  
 Garretts, Mary R., obit., iv, 693.  
 Garrison, A. F., obit., ii, 580.  
 Garrison, C. K., obit., x, 648.  
 Garrison, G. T., sketch, xiv, 631.  
 Garrison, J. Linwood, experiments  
   by, xi, 533.  
 Garrison, S., obit., iii, 637.  
 Garrison, W. L., sketch, iv, 396; on  
   woman suffrage, iv, 598; statue  
   of, xi, 347.  
 Garthwaite, J. C., obit., viii, 589.  
 Gartrell, Lucius J., obit., xvi, 623.  
 Garvim, S. B., obit., iii, 637.  
 Gas, viii, 372; a heating, iii, 88;  
   Lowe's process, i, 517; other  
   water processes, viii, 374; illus-  
   trations, 374, 375, 378, 379, 380,  
   381; natural, 377; illustration,  
   xi, 366; in Ohio, xii, 219, 642;  
   map of natural-gas region, xi,  
   367; burner, i, 91; xii, 652; il-  
   lustration, 652; improved appar-  
   atus, 111; holder, large, xiii,  
   308; natural, xiii, 440; xiv, 436;  
   xvii, 772, xix, 371; in Kansas,  
   xx, 380; in Kentucky, xviii, 425.  
 Gas-engines, viii, 377.  
 Gases, xx, 648; in ocean-water, ix,  
   662; specific heat of, x, 151; ex-  
   plosion of, xii, 112; liquefaction  
   of, ii, 87; xiv, 592; xvi, 727;  
   xviii, 617.  
 Gaskell, W. H., experiments by,  
   viii, 361; ix, 654.  
 Gas-lighting, regenerative system  
   of, viii, 377.  
 Gas-lime, regeneration of, iii, 89.  
 Gasparis, Annibale de, obit., xvii,  
   593.  
 Gas-stoves, viii, 376; x, 386.  
 Gastein, meeting of two emperors  
   at, x, 70.  
 Gaston, William, obit., xix, 578.  
 Gates, inventions of, illustrated,  
   xii, 654.  
 Gates, E., indictment of, iii, 575.  
 Gauehos, illustration, iii, 21.  
 Gaudoin, M., invention by, iii,  
   270.  
 Gaul, Gilbert, xi, 346.  
 Gaule, experiments by, viii, 632.  
 Gaume, Mgr., obit., iv, 774.  
 Gauntlett, H. J., sketch, i, 322.  
 Gaurisankar, Mount, highest in  
   the world, vi, 332.  
 Gauss, statue of, ii, 353.  
 Gauthier, M., experiments by, ix,  
   658.  
 Gautier, M. F., experiments by,  
   xi, 537.  
 Gautier, Raoul, x, 51.  
 Gaucic Pasha, x, 107, 108.  
 Gavazzi, A., sketch, xiv, 661.  
 Gay, Edward J., sketch, xiv, 631.  
 Gay, Sydney Howard, obit. and  
   port., xiii, 634.  
 Gayarre, C. E. A., obit. and port.,  
   xx, 573.  
 Gayarre, J., obit., xv, 680.  
 Gayler, Charles, obit., xvii, 547.  
 Gaylor, G. R., obit., i, 617.  
 Gear, John H., iv, 520; sketch, ii,  
   401.  
 Geddes, experiments by, iv, 37.  
 Geddes, G. W., obit., xvii, 548.  
 Geddes, James, obit., xii, 586.  
 Geese, in the United States, x, 387.  
 Geffen incident, the, xiv, 379.  
 Geffroy, M. A., obit., xx, 610.  
 Gegenbaur, J. A., sketch, i, 322.  
 Geikie, Sir Archibald, xvii, 26.  
 Geiseler, M., ix, 275.  
 Geissler tubes, iii, 279.  
 Gelatine, blasting, iv, 131; ix, 124.  
 Gelatine dry plates, ix, 651.  
 Gelatine dynamite, and military  
   explosive gelatine, x, 345.  
 Geldart, Rev. J. W., obit., i, 634.  
 Gelele, King, obit., xv, 680.  
 Gelosine, xi, 290.  
 Geminid shower of Dec. 12, 1892,  
   xviii, 46.  
 Gemmill, W. D., obit., vii, 637.  
 Gemünder, August, obit., xx, 573.  
 Genast, Wilhelm, obit., xii, 627.  
 Gene, Gen., xii, 2, 3.  
 General, bill reviving grade of,  
   xiii, 234.  
 Genesta, the yacht, x, 791.  
 Genet, Citizen, xiii, 268.  
 Geneva, illustration, i, 739.  
 Geneva, N. Y., xv, 128.  
 Genin, S. N., obit., iii, 637.  
 Gent, F. A. L. C. M., obit. and  
   port., xviii, 553.  
 Geodetic conference, viii, 454; ix,  
   54.  
 Geographical Progress and Discov-  
   ery, in every volume except xii;  
   Congress, i, 73; geographical  
   names, xi, 382; geography in  
   education, xii, 316.  
 Geological Surveys, State, New  
   Hampshire, ii, 548, 557; Geor-  
   gia, iii, 366; Indiana, iv, 501;  
   New Jersey, iv, 670; of United  
   States, x, 401; appropriations

- for, x, 405; publications, x, 405; the drift, x, 406; map of the terminal moraine of the second glacial epoch, x, 404; State surveys, x, 406.
- Geological Society of America, xviii, 31.
- Geologists, x, 401 *et seq.*
- Geology, fossils in Oregon, ii, 628; glacial period, vi, 349; explorations in Asia, iii, 359; formation of mountains, iv, 379; Favre's experiments, iv, 379; fossil birds, vi, 303; the iguanodon, viii, 436; recent discoveries, ix, 636; Hayden's work, xii, 356; experimental, iv, 417.
- George V., ex-King of Hanover, death, iii, 384; obit., iii, 654.
- George, Duke of Mecklenburg-Strelitz, obit., i, 634.
- George, Henry, imprisoned, x, 454.
- George, Prince, obit., xv, 680.
- Georgetown, D. C., water, xix, 780.
- Georgia, in each volume; views in, ii, 340; Confederate monument unveiled, iii, 372; impeachment of Comptroller-General, iv, 425; gold-mines in, v, 308; artesian wells, vii, 348; death of Gov. Stephens, viii, 387; Ogleshorpe celebration, viii, 389; temperance in, x, 409; convicts, xii, 318; its claim against the U. S., xviii, 341; negro exodus, xx, 313.
- Gerard electric lamp, illustration, ix, 305, 306.
- Gerber, experiments by, vi, 42.
- Gerken, John, obit., i, 617.
- Gerlach, E. L. von, obit., ii, 600.
- Gerlach, Franz, sketch, i, 338.
- German Centralism in Austria, vii, 48.
- German emigration, vii, 348.
- German Evangelical Church, xi, 384.
- German Evangelical Synod, xiv, 366; xx, 314; of North America, xix, 313.
- German Government, in Polynesia, ii, 53; colonial policy of, ix, 362; annexation in Papua, ix, 640.
- German National Monument, illustration, viii, 399.
- German Parliament, vi, 337.
- German Provinces, Russification of, viii, 708.
- German Railroads, vii, 349.
- Germanium, xi, 139, 140.
- Germany, in every volume; map, i, 345; views in, i, 346, 347; ii, 347, 350, 351, 352; political crimes, in the penal code amendment, i, 344; law against copying works of art, 344; particular parliaments, 344, 345; protests against railroad acquisition by the Imperial Government, 344; Catholics and Radicals, 344, 347; judicial bills, 346; the Emperor on unification of the laws, 347; the Eastern question, i, 347; iii, 378; resignation of Delbrück, i, 345; diplomatic complications with Spain and China, 347, 348; Armin's conviction, 348; floods, 348; viii, 398; election of Frockenbeck, ii, 349; Alsace-Lorraine, 349, 352; iv, 438; made a State of the Empire, iv, 439; vii, 359; viii, 397; ix, 359; Supreme Tribunal at Leipsic, ii, 350; difference between Bismarck and Gen. von Stosch, 350; war estimates, 350; speech of Von Moltke, 351; patent bill, 351; diets of Bavaria, Saxony, and Württemberg, 351, 352; meeting of Emperors, 352; seventieth anniversary of the Emperor's entrance into the army, 352; shoe and leather exhibition, 353; statue of Gauss, 353; tobacco duty, iii, 378; vii, 356; antagonism of German and Prussian Governments, 378; anti-Socialist bill, iii, 380, 381, 383, 384; v, 318; ix, 356; attempts to assassinate the Emperor, iii, 381; Hotel and Nobilung, 381; royal marriages, 381; paper and pasteboard exhibition, 381; letter from the Pope, and negotiations, 381-382; relations with France, 383; Hanoverian succession, 384; the fleet, 384-385; destruction of the Grosser Kurfürst, 385; officers court-martialed, iv, 441; American products, iii, 386; dispute with Nicaragua, 386; Westphalian coal-fields, 387; question of raising the revenue, 386; tariff debate, iv, 435, 437, 438; refusal of Parliament to imprison Socialist members, 435; announcement of new policy, 435-436; parliamentary discipline bill rejected, 438; historical details of unification, 439; Socialists refuse homage to the Emperor, 440; motion for disarmament, iv, 440; treaty of Prague and position of Schleswig-Holstein, 441; the Egyptian debt, 441; judicial reorganization, 441; the Samoan Islands, 442; army bill, v, 317, 318; South Sea Trading Company, 319; suburbs of Hamburg annexed, 319, 320; stamp-duty conflict, 320, 321; fishery and industrial exhibitions, 321; foreign relations, 321; defection of National Liberals, 322; Cologne cathedral, 322; workmen's accident insurance bill, vi, 344; vii, 354; ix, 357; xii, 328; Bismarck defeated on tax and biennial budget bills, vi, 344; his conflict with Bennigsen, 345; Liberal gains in elections, 345; speech of Eugene Richter, 346; Hamburg forced into the customs union, 346; meetings of emperors, 346; vii, 355; ix, 356; concessions to the papal power, vi, 346; marriage of Prince William, 346; struggles over laws relating to ecclesiastical offices, vii, 355, 358; the Guelph fund, vii, 358; the reptile fund, 358; rescript of the Emperor, viii, 393; biennial budget voted, 393; state socialism, 393; Cabinet changes, 395; Prussia and the Vatican, 395; American pork, 396; treaty with Spain, 396; copyright treaty, 397; relations with France, 397; attempt to banish French from the schools of Alsace-Lorraine, 397; monument near Rudesheim, 399; hygienic and art exhibitions, 399; French feeling toward, ix, 339; ecclesiastical policy, ix, 356; the explosives law, 357; accident-insurance and joint-stock laws, 357-358; Niederwald anarchist plot, 358; Kraszewski trial, 358-359; the Lasker incident, 359-360; Bismarck succession, 359-360; fusion of Liberal factions, 360; general election, 360; the new Reichstag, 361; post steamship subventions, ix, 361; steamship subsidies, x, 415; colonial policy, 362; African colonies, x, 363-364, 137, 393, 795; xix, 104; annexations in the Pacific, 365; xi, 60; Caroline Islands, x, 141; in Papua, 679-681; relations with England, 120 *et seq.*; flag insulted in Spain, 142; officers in the Tonquin War, 170; tariff revision, 416; state lotteries, 417; North Sea and other canals, 417; xi, 388; socialism, x, 417; xi, 389; murder of Herr Rumpff, x, 417; shipping law, 420; Russian Poles expelled, 418; Americans, 419; the Feejee controversy, 419; telegraph conference, 420; imprisonment of Herr Bebel, xi, 389; working-women's society dissolved; 389; repeal of the May laws, 390; Heidelberg festival, 391; emperors' league, xi, 391; new King in Bavaria, 381; Bismarck demands the increase of the army, xii, 323; May laws amended, 325; frontier troubles, 326; colonies, 329; treason trials at Leipsic, 326; the Raon incident, 327; illness of the Crown Prince, 327; the triple alliance, 328; founding of the Empire, 319; German spies in France, 293; agrarian movement, xx, 321.
- Germer, Edward, obit., xii, 586.
- Germ Theory, and Spontaneous Generation, iii, 387; theory of disease, iv, 442; vi, 347, 551; vii, 286; ix, 498; in tuberculosis, vii, 798; ix, 497; vaccination, vi, 347. See Epidemic Diseases, viii, 320; and Micro-Organisms in Disease, ix, 495.
- Gérôme, pictures by, x, 358, 363.
- Gescheidt, Dr. L. M., obit., i, 617.
- Gesellschaft, E., obit., iii, 654.
- Gessi, Signor, explorations of, i, 330, 331.
- Gettysburg, battle of, xi, 446; field of, xviii, 611.
- Geuther, experiments, xii, 106.
- Ghillany, F., obit., i, 634.
- Ghilzai Revolt, xii, 4.
- Ghislanzoni, A., obit., xviii, 580.
- Gholain Hussein K., obit., vi, 693.
- Gholain Hyder Khan, xii, 5.
- Gibbons, Abby Hopper, obit., xviii, 553.
- Gibbons, Cardinal, xii, 716, 717.
- Gibbons, J. S., obit., xvii, 548.
- Gibbons, Sir S., obit., i, 634.
- Gibbs, Wolecott, ix, 46; port., xx, 504.
- Gibraltar, xv, 403; xvi, 342.
- Gibson, Edward, sketch, x, 450.
- Gibson, George, sketch, xiii, 635.
- Gibson, R. L., obit., xvii, 548.
- Gibson, Walter M., xii, 352; sketch, xiii, 635.
- Gibson, William H., obit., xix, 578.
- Gidman, J., invention, ix, 736.



- Giebri Bey, i, 4.  
 Giegler Pascha, viii, 299; x, 317.  
 Giers, Nikolai Karlovich de, x, 4, 6, 8, 10; sketch, vii, 734; ix, 64; obit., xx, 610.  
 Gifford, C. L. C., obit., ii, 580.  
 Gifford, Sir Hardinge, portrait, x, 438; sketch, 449. See Halsbry.  
 Gifford, R. Swain, prize to, x, 367.  
 Gifford, Sandford R., sketch, v, 322.  
 Gitts and bequests, xviii, 350; xix, 322; xx, 321.  
 Gigoux, Jean F., obit., xix, 613.  
 Gilbert, Addison, sketch, xiii, 635.  
 Gilbert, Alfred, xi, 345.  
 Gilbert, G. A., obit., ii, 580.  
 Gilbert, Grove K., x, 404.  
 Gilbert, J. G., sketch, xiv, 631.  
 Gilbert, John S., obit., xvi, 623.  
 Gilbert, Linda, obit. and port., xx, 573.  
 Gilbert, R. H., obit., x, 649.  
 Gilbert islands, German protectorate over the, x, 138, 415.  
 Gilchrist, R., sketch, xiii, 375.  
 Gilchrist, S., invention by, v, 208.  
 Gilchrist, T., steel process, x, 575.  
 Gilder, Col. William H., xii, 316.  
 Giles, Channcey, obit., xviii, 553.  
 Giles, Ernest, in Australia, i, 330.  
 Giffillan, James, obit., xix, 578.  
 Gill, Capt., iii, 359.  
 Gill, David, observations by, vii, 36, 37; viii, 26; prize, vii, 41; xi, 48.  
 Gillespie, Col. G. L., xiii, 302.  
 Gillespie, Elvia, obit., xii, 586.  
 Gillette, A. D., obit., vii, 637.  
 Gilmore, Quincy Adams, sketch and port., xiii, 635.  
 Gilmore, P. S., obit., xvii, 548.  
 Gilmour, R., obit., xvi, 624.  
 Gilpin, Edward W., i, 225; obit., i, 617.  
 Gindely, Anton, obit., xvii, 593.  
 Ginzell, J. A., obit., i, 634.  
 Ginzell, M., x, 54.  
 Giolitti, prosecution of, xx, 372.  
 Giordani, Luigi, obit., xviii, 580.  
 Girardet, Paul, obit., xviii, 580.  
 Girardin, E. de, sketch, vi, 348.  
 Girls, protection of, xiv, 229; co-operative boarding homes, xv, 383.  
 Gisborne, F. M., obit., xvii, 593.  
 Giseke, B. L., obit., i, 634.  
 Giskra, K., obit., iv, 699.  
 Gittings, E., obit., v, 593.  
 Gjess, G., invention by, vii, 530.  
 Glacial age, man in the, xvi, 13.  
 Glacial Period, vi, 349; x, 406; map of terminal moraine of the second glacial epoch, x, 404.  
 Glaciers, names of, ix, 34; structure of, ix, 336; in volcanoes, ix, 542; of the Andes, ix, 542, 543; of Alaska, xx, 10; theory of, x, 407, 408.  
 Gladding, Thomas S., x, 156.  
 Gladstone, W. E., sketch, v, 322; his policy, ix, 303, 372-375; x, 11, 13, 18, 313, 321, 446, 447; resignation, 448; defense of his policy, 456; xi, 399, 401; in Parliament, illustration, vii, 206. And see articles on Great Britain.  
 Gladstone, W. H., obit., xvi, 671.  
 Glais-Bizoin, A., obit., ii, 600.  
 Glandular system, x, 694; xi, 762; xii, 678; xx, 660.  
 Glass, process for toughening, i, 517; improvements in, v, 91; perforated, xi, 740.  
 Glassbrenner, A., sketch, i, 348.  
 Gleig, George R., sketch, xiii, 662.  
 Glenn, W. W., obit., i, 617.  
 Glenwood Springs, xiii, 164.  
 Glick, G. W., sketch, vii, 447.  
 Glisson, O. S., obit., xv, 648.  
 Glogau, Gustav, obit., xx, 611.  
 Glonoine, x, 344.  
 Gloucester, Mass., xii, 121.  
 Glover, John M., obit., xvi, 624.  
 Glover, Sarah, ix, 546.  
 Gloversville, xv, 128.  
 Glucose, vi, 350; ix, 2, 123.  
 Glyn, Miss, sketch, xiv, 661.  
 Glyoxilin, x, 343.  
 Goblet ministry, the, xii, 290.  
 Gobright, L. A., obit., vi, 683.  
 Goddard, Bourverie, obit., xi, 716.  
 Goddard, D. A., obit., vii, 637.  
 Goddard, Thomas P. I., obit., xviii, 553.  
 Godelle, M., v, 285.  
 Godey, L. A., obit., iii, 637.  
 Godin, St. Jean B. A., sketch, xiii, 662.  
 Godlee, R. J., x, 742.  
 Godon, S. W., sketch, iv, 444.  
 Godshalk, Wm., obit., xvi, 624.  
 Godwin, Col., explorations, ii, 328.  
 Godwin, George, sketch, xiii, 663.  
 Goebel, Henry, obit., xviii, 553.  
 Goessmann, experiments, iii, 87.  
 Goff, G. W., obit., i, 617.  
 Goff, M. B., obit., xv, 648.  
 Goff, Nathan, nominated, xiii, 842.  
 Goffart, A., experiments, vi, 809.  
 Gold, allotropic, ii, 499; discoveries, xi, 39, 65, 134, 305, 622; crystals of, ix, 475; production of, ii, 240, 242; in Alabama, iii, 8; in Dakota, ii, 245; in Minnesota, xix, 489; in Virginia, xix, 769; dust from Colombia, viii, 141; experiments with, viii, 524; Venezuela mines, viii, 814; Australia mines, xx, 69; black gold, xii, 484; new method of treating the ore, 484; amalgamation with, 484; xiii, 526; xiv, 109, 165, 170, 240, 248, 361, 542, 610, 691; xv, 529; xvi, 509; xvii, 443; xviii, 481. See also Mines and Metallurgy.  
 Gold as the only standard, see Currency, ii, 235, and Bimetallism; and silver, relative values of, i, 290; conference to fix, iii, 326; issue of certificates, vii, 117; x, 275-282. See Currency, Bimetallism, x, 275.  
 Gold, discoveries of, xi, 39, 65, 134, 305, 622; in Michigan, xii, 484; in British Columbia, xi, 98; in Ecuador, xi, 305; in Bolivia, xi, 97; in Colombia, xi, 190; in Norway, xii, 484; in China, x, 169; on the Amoor, x, 397; in Corea, xi, 272; in Australia, xi, 65, 66, 576; in South Africa, xi, 134; xii, 485; in Canada, xviii, 266; in Minnesota, xviii, 496; new fields, xvii, 772; mining in Wales, xiii, 392.  
 Gold Coast, xiv, 401; xvii, 327.  
 Gold cure, xx, 764.  
 Golden Jubilee, the, xii, 716.  
 Golden rose, the, xiii, 716.  
 Gold-fields of Africa, the, xviii, 129.  
 Goldie, Matthew, obit., xvii, 549.  
 Goldmark, Carl, xii, 521.  
 Goldsborough, L. M., sketch, ii, 353.  
 Goldsborough, W. T., obit., i, 617.  
 Goldschmid, invention by, iii, 545.  
 Goldschmidt, discoveries by, ii, 44.  
 Goldschmidt, M. A., obit., xii, 627.  
 Goldschmidt, P., obit., ii, 600.  
 Goldschneider, Dr., experiments by, x, 689; xii, 673.  
 Goldsmid, Sir F. H., obit., iii, 654.  
 Goldsmith, O. B., sketch, xiii, 636.  
 Goldsmith, W. L., impeachment of, iv, 421.  
 Goldthwaite, G., sketch, iv, 444.  
 Golf, xviii, 354.  
 Golther, L. von, sketch, i, 348.  
 Gondinet, E., sketch, xiii, 663.  
 Gonon, E., obit., xvii, 593.  
 Gontaut-Biron, Vicomte, obit., xv, 650.  
 Gontcharoff, I. A., obit., xvi, 671.  
 Gonzalez, Manuel, obit. and port., xviii, 580.  
 González y Díaz-Tuñón, Z., obit., xix, 613.  
 Gooch, D. W., obit., xvi, 624.  
 Gooch, Sir D., sketch, xiv, 661.  
 Goodale, George L., port., xv, 24.  
 Goodall, Albert G., obit., xii, 586.  
 Goodall, F., xi, 345; xii, 277.  
 Goodell, William, obit., xix, 578.  
 Good Hope, Cape of, xi, 133.  
 Good, John, inventions, xiii, 250.  
 Goodrich, Frank B., obit., xix, 578.  
 Goodrich, James S., obit., xi, 667.  
 Goodwin, Eliza W., obit., xii, 587.  
 Goodwin, George, obit., xi, 716.  
 Goodwin, H., obit., xvi, 671.  
 Goodwin, J., obit., iii, 627.  
 Goodwin, W. H., obit., i, 617.  
 Goodwin-Talcott, H. Bradbury, obit., xviii, 554.  
 Goold, James A., obit., xi, 716.  
 Goppelsroeder, invention by, vii, 90; experiments, viii, 115.  
 Gordon, Adoniram J., obit., xx, 573.  
 Gordon, Archibald D., obit., xx, 574.  
 Gordon, Sir A., defeat of cannibals by, i, 53; Governor of Feejee, ii, 52; x, 49.  
 Gordon, C. G., sketch, with portrait, viii, 399; portrait on steel, ix, 300; in Abyssina, ii, 2; ix, 2, 333; operations in Egypt, i, 246; excursions on the Nile, ii, 330; in the Soudan, ii, 269; v, 235; viii, 290; proposed to flood the Jordan valley, viii, 307; mission to the Soudan, ix, 299, 372; x, 230, 312; his journal, x, 320; memorial hospital to, and pension to his family, x, 321; death of, x, 661.  
 Gordon, David, obit., xi, 716.  
 Gordon, F. W., invention, x, 580.  
 Gordon, George H., obit., xi, 678.  
 Gordon, Lient. A. R., xii, 214.  
 Gordon, Sir II. P., obit., i, 634.  
 Gordon, J. E. H., invention by, vii, 269, 270; obit., xviii, 581.  
 Gordon, L. D. B., obit., i, 634.  
 Gordon, Sir W. H., obit., i, 634.  
 Gore, J. E., xi, 56.  
 Gore-Langton, Lady, address by, ii, 389.

- Gorgas, J., obit., viii, 589.  
 Goring, C. R., ix, 519, 520.  
 Gorman, J. R., xi, 742.  
 Gormau, Gen. W. A., obit., i, 617.  
 Gormaston, Viscount, obit., i, 634.  
 Gorringe, H. H., obit., x, 649.  
 Gortehakoff, Prince, sketch, ii, 353; viii, 400; retirement, vii, 734; x, 2.  
 Gortyna, inscription at, x, 37.  
 Goshen, search for, x, 36.  
 Goshenland, ix, 113; x, 85, 87.  
 Gospel society, xv, 10.  
 Goss, William, obit., i, 618.  
 Gosse, Philip H., sketch, xiii, 663.  
 Goszczynskis, L., sketch, i, 348.  
 Gothard's experiment, xi, 51.  
 Gotthenburg, illustration, ii, 705.  
 Göttingen, University of, chemistry at, ix, 809.  
 Gougeard, M., obit., xi, 716.  
 Gough, John Bartholomew, obit. and portrait, xi, 392.  
 Goulard and Gibbs, induction-coils used by, viii, 305.  
 Gould, B. A., discoveries and observations by, iii, 35; vi, 38; vii, 37; prize to, viii, 27; xi, 57, 59; xii, 45.  
 Gould, G. W., nominated, xiii, 715.  
 Gould, J., obit., vi, 693.  
 Gould, Jay, obit., xvii, 549.  
 Gould, T. R., sketch, vi, 353.  
 Gould system of roads, vi, 835, 836.  
 Gould, Walter, obit., xviii, 554.  
 Gounod, Charles François, sketch and port., xviii, 355; house at St. Cloud, 357.  
 Gourko, Gen. J. V., sketch, ii, 353.  
 Gove, William H., obit., i, 618.  
 Government departments at Washington, xiii, 375.  
 Government lands in Missouri, xviii, 499.  
 Government publications, x, 405.  
 Gowan, John E., obit., xx, 574.  
 Gowen, F. B., sketch, xiv, 632.  
 Gower, Frederick A., ix, 72.  
 Gozzadini, Count G., obit., xii, 627.  
 Grace, F. J., obit., ii, 580.  
 Grace-Aranibar contract, xii, 662.  
 Grace-Calvert, experiments, vi, 99.  
 Grady, Henry W., obit. and port., xiv, 632.  
 Graef, Gustav, obit., xx, 611.  
 Graetz, H., obit., xvi, 671.  
 Grafton, E. C., obit., i, 618.  
 Graham, Andrew J., obit., xix, 578.  
 Graham, C. K., sketch, xiv, 632.  
 Graham, Gen. G., in Egypt, with portrait, vii, 253; ix, 293; results of his campaign, ix, 295, 299.  
 Graham, George Rex, obit., xix, 579.  
 Graham, John, obit., xix, 579.  
 Graham, John H., obit., iii, 637.  
 Graham, J. and W., picture collections of, sold, xi, 345; xii, 278.  
 Graham, J. L., obit., i, 618.  
 Graham, J. L., Jr., obit., i, 618.  
 Graham, Van Wyck, obit., i, 618.  
 Graham, Wallace, obit., i, 618.  
 Graham, William M., obit., xi, 678.  
 Graham, W. W., discoveries by, ix, 543.  
 Grain inspection, vii, 560; xv, 555.  
 Gramme, M., inventions by, iii, 277, 307; vi, 253; electric lamp of, vi, 258.  
 Gramont, Duc de, obit., v, 599.  
 Gran Chaco expedition, x, 100.  
 Grand Army of the Republic, xii, 329; badges of, colored-plate illustration, xii, 329.  
 Grandeau, experiments by, iii, 725.  
 Grand-Ecaille, xii, 756.  
 Grandin, Licut., invention, i, 518.  
 Grand Rapids, xii, 122; xix, 776.  
 Granger cases, the, ii, 753.  
 Granger, Gordon, sketch, i, 348.  
 Grauger, Robert S., obit., xix, 579.  
 Granier, M., x, 26.  
 Granier de Cassagnac, A. B., obit., v, 599.  
 Grannis, T. C., obit., iii, 637.  
 Grant, Sir Francis, obit., iii, 654.  
 Grant, Gordon, obit., iii, 638.  
 Grant, J. A., obit., xvii, 593.  
 Grant, James, obit., xii, 628.  
 Grant, James M., obit., x, 661.  
 Graut, Robert, obit., xvii, 593.  
 Grant, Sir P., obit., xx, 611.  
 Grant, Ulysses S., President, messages of, i, 680; travels of, iv, 146, 445; proposal to place on retired list, vii, 156; obit., x, 421, see also x, 225; steel portrait, x, front; his birthplace, illustration, x, 422; numbers lost and captured by, x, 430; his character, x, 432.  
 Grant, William, ix, 114, 115.  
 Grant and Ward, ix, 329.  
 Grant Land, ix, 35.  
 Grant monument, the, xviii, 528.  
 Grants to gas and water companies, xi, 470.  
 Granville, Earl, sketch, v, 323; ix, 290, 363, 364, 559; x, 11, 16, 119, 120, *et seq.*, 311, 419, 679; obit. and port., xvi, 672.  
 Grapes, chemistry of, iii, 87; culture of, see Viticulture.  
 Grape-Sugar, vi, 350.  
 Graphic works of art, first exhibition, xi, 346.  
 Grass, Philippe, obit., i, 634.  
 Grasses, analysis of, viii, 118.  
 Grasshoppers, in Dakota, protection against, i, 219; in Minnesota, i, 558.  
 Grassman, H. G., obit., ii, 601.  
 Grätz, Prof., xii, 404, 405.  
 Gravenreuth, Carl, obit., xvi, 671.  
 Graves, Abbot F., xi, 347.  
 Graves, Robert, obit., xi, 678.  
 Graves, Ralph H., obit., i, 618.  
 Graves, Samuel, obit., xx, 574.  
 Gravez, T., obit., viii, 599.  
 Gravière, Jurien de la, obit., xvii, 593.  
 Gravitation, law of, xiv, 50.  
 Gray, Albert Z., sketch, xiv, 632.  
 Gray, Alfred G., obit., i, 618.  
 Gray, Asa, ix, 46; obit., xiii, 380.  
 Gray, David, sketch, xiii, 636.  
 Gray, E. P., inventions by, vi, 255. See Telephone, i, 740.  
 Gray, George Z., sketch, xiv, 632.  
 Gray, Hiram, obit., xv, 648.  
 Gray, H. P., sketch, ii, 354.  
 Gray, Isaac P., obit., xx, 574.  
 Gray, John Perdue, obit., xi, 678.  
 Grayson, Clifford P., pictures by, xi, 346, 347.  
 Great Britain and Ireland, statistics, government, legislative proceedings, etc., in each volume; map, ii, 360; views in, i, 356, 357, 359, 362, 364; ii, 361-367; Suez canal shares, i, 355; mission to Egypt, 356; title of empress assumed by the Queen, 357; debate on, 357-358; court of survey, 358; merchants' shipping acts, 358; compulsory education, 358; appellate jurisdiction of the House, 359; home-rule for Ireland discussion, 360; bill to suppress the slave-trade in India, 361; the Turkish question, 361; the Eastern question, i, 361; debates on, 361-364; ii, 362-364; iii, 398-399, 401-402; v, 336-337; see also Eastern question, the; new Doomsday Book, i, 365; visit of Sir Salar Jung, 366; attack on the government by the Duke of Argyll, ii, 362; letter of Carlyle and speech of Gladstone, 365; obstruction by Irish members, ii, 366; consular service in Turkey, Persia, and Egypt, 368; liberation society, 368; annexation of Transvaal, 368; island of Cyprus, the, iii, 401; v, 336; discussion of Russo-Turkish policy, iii, 404-405; Afghan war, iii, 405; Imperial Order of the Crown of India, 406; mob in Hyde Park, 406; murder of the Earl of Leirtrim, 407; Feuians released, 407; labor strikes, 407; Glasgow bank failure, 407; steamboat, colliery, and theater accidents, 407, 408; army discipline bill, iv, 452; dissolution of Queen's University, 453; education in Wales, 453; suffrage question, 455; war in South Africa, 455-456; Gladstone's campaign in Scotland, 457; Irish speakers arrested, 458; case of Charles Bradlaugh; see Bradlaugh; Gladstone's arraignment of Austria, v, 334; South African federation, 338; temperance bill, v, 342; American cattle regulations, v, 342; Tay disaster inquiry, 344; woman-suffrage in the Isle of Man, 344; the Irish question, vi, 358-370; vii, 365; viii, 411-417; ix, 376-378; schemes for destruction of property, vi, 370; request to United States government, 371; attempted assassination of the queen, vii, 369; appropriations for the royal family denounced, vii, 369; Gladstone prime minister, vii, 360; question of cloture, vii, 364; property of married women, 365; state aid to emigration, viii, 418; famine in Skye and western highlands, 418; comparison of the English and French navies, ix, 370; annexation in Papua, 380, 639; x, 679-680; federation of Australian colonies, ix, 380; African policy attacked, ix, 372; Arthur Peel speaker, 372; London government bill, 372; purchase-of-land bill, 373; Manchester ship-canal, 373; debate on the franchise bill, 374; franchise agitation and extension, 375; membership of House of Commons increased, 376; Maartasma murder trials, evidence suppressed, 376-377; dynamite conspiracies and explosions, 377-378; the Skye crofters, 378; employers' liability act, 379; financial depression, 379; commercial



- treaty with Mexico, 380; extent of colonial possessions, 380; affairs in Africa, 380; x, 119, 136, 137; government censured, x, 447; resignation of ministry, 448; earldom offered to Gladstone, 448; Salisbury ministry—sketches of cabinet, 448–450; criminal law amendment bill, x, 452; land-purchase bill, 453; xi, 400; Irish question, x, 454–456; electoral campaign, x, 456; land question, 456; abolition of game-laws demanded, 458; Port Hamilton taken, 459; annexation of Upper Burma, 115; home-rule bill, xi, 400; Crofter troubles, 401–404; xii, 342; riots in Belfast, xi, 403; agrarian agitations in Wales, 404; mob in London—meeting in Trafalgar square, 405; Domesday celebration, 406; Domesday Book, 407; socialist agitations, xii, 342; Irish affairs, 336 *et seq.*; the round table, 336; the plan of campaign, 336, 337; declared illegal, 337; evictions, 337, 338; Salisbury cabinet, xx, 336; institute of International law, xx, 339; Trade Union Congress, xx, 339.
- Great Eastern, history of, xiv, 404.
- Great Falls, Montana, xvi, 156.
- Great Salt Lake, filling, v, 297.
- Greaves, James P., xiii, 11.
- Grébaut, Eugene, xi, 31; xii, 18.
- Greece, statistics, government, legislative proceedings, etc., in every volume; maps of, i, 367, 368; v, 225; views in, i, 370; ii, 369, 370; iii, 409, 410; trial of ministers, i, 369; resignation of Kumunduros ministry, ii, 370; Deligeorgi ministry, 370; death of Admiral Canaris, 371; change of ministry, iii, 408; war preparations, 408; massacres, 409; Turko-Greek commission, iv, 459; army prepared, v, 345; vi, 374; boundaries settled, 377; change of ministry, vii, 371; petroleum monopoly, viii, 419; Latin Union, 419; Corinth canal, ix, 383; action regarding Bulgaria, x, 109, 112; mobilization of troops, xi, 409; interference of the powers, 409; blockade of the coast, 411; change of ministry, 411; collision on the frontier, 411; electoral reform, 412; xiii, 403; xiv, 406; xv, 408; xvi, 348; xvii, 328; xviii, 368; bankrupt, xix, 340; earthquake, xix, 342; Delyannis ministry, xx, 343; revival of Olympian games, xx, 344.
- Greek bridge and bath, only example of, ix, 25.
- Greek Church, organization of, i, 371, 372; ii, 371; new translation of the Bible, 372; iii, 411; iv, 461; v, 346; project for union of Servian churches, v, 347; ix, 277; party in, favoring union with the Roman Church, ix, 279.
- Greek invasion of Turkey, iii, 793.
- Greek manuscript, ancient, xix, 20.
- Greeley, Colorado, xviii, 159.
- Greely, A. W., expedition under, vi, 325; relief expedition, viii, 420; ix, 28.
- Green, Caleb S., obit., xvi, 624.
- Green, Charles, obit., xii, 587.
- Green, F. M., corrections in latitudes and longitudes, ii, 336.
- Green, George F., obit., xvii, 549.
- Green, Henry, Jr., obit., i, 618.
- Green, John R., sketch, viii, 424.
- Green, J. R., experiments by, xii, 676.
- Green, N. E., observations by, viii, 22; ix, 51.
- Green, Norvin, obit., xviii, 554.
- Green, Robert S., obit., xx, 574.
- Green, S., obit. and port., xiii, 404.
- Green, S. F., imprisonment, vii, 14.
- Green, Thomas C., sketch, xiv, 633.
- Green, Sir W. K., obit., xvi, 673.
- Green, William L., xii, 353.
- Green, William M., obit., xii, 587.
- Green, Rev. W. S., ix, 545.
- Greenback party, the, i, 204, 781.
- Green Bay, xix, 137.
- Greene, Charles G., obit., x, 678.
- Greene, E. W. C., obit., ii, 580.
- Greene, G. W., obit., viii, 589.
- Greene, Gen. N., statue of, xi, 347.
- Greene, Nathaniel, obit., ii, 580.
- Greene, S. D., obit., ix, 606.
- Greene, Theodore P., obit., xii, 587.
- Greene, W. B., sketch, iii, 412.
- Greenfield, Eliz. T., obit., i, 618.
- Greenhow cases, tried, x, 268, 272.
- Greenland, explorations in, iii, 358, and xiv, 359; viii, 384; ix, 348; xiv, 268; xvii, 299; xx, 229.
- Greenock, Scotland, dock, x, 332.
- Green River island, xv, 474.
- Greenwich, meridian of, ix, 54.
- Greenwood, John, obit., xii, 587.
- Greer County, Texas, claimed by United States, xii, 760.
- Greer, Edward, sketch, xiii, 636.
- Grefin, H. A., sketch, xiii, 636.
- Gregg, Alexander, obit., xviii, 554.
- Gregg, J., obit., iii, 655.
- Gregg, Rollin R., obit., xi, 679.
- Gregorian Calendar, vii, 371.
- Gregorovius, F., obit., xvi, 678.
- Gregory, A. C., port., xx, 47.
- Gregory, Dudley S., obit., xi, 679.
- Gregory, Dr. H. H., obit., ii, 580.
- Gregory, F. T., sketch, xiii, 663.
- Gregory, S. B., obit., ix, 606.
- Gregory, Sir W. ll., obit., xvii, 594.
- Greig, Samuel A., obit., xii, 628.
- Grenell, George, obit., ii, 580.
- Grenfell, Rev. George, x, 392; xi, 32, 372.
- Gresham, Walter Q., sketch and port., xviii, 734; obit., xx, 574.
- Gresley, H. X., obit., xv, 630.
- Gresser, P. A., obit., xvii, 594.
- Greuze, x, 364.
- Grévin, Alfred, obit., xvii, 594.
- Grévy, Albert, iv, 26; v, 285.
- Grévy, F. J. P., sketch, iii, 413; portrait, iv, 17; elected President, iv, 388; x, 27; xii, 288; resignation, 296; xvi, 350.
- Grey Henry, obit., xix, 613.
- Grey, Sir George, obit., vii, 646.
- Greyhound, the, ix, 262.
- Grier, David P., obit., xvi, 624.
- Grier, W. N., obit., x, 649.
- Grierson, Gen., x, 425.
- Griffin, G. W., obit., xvi, 625.
- Griffin, Julia A., obit., xvi, 625.
- Griffin, Lepel, v, 6.
- Griffin, Samuel P., obit., xii, 588.
- Griffith, F. L., researches, xii, 18.
- Griffith, J. E., obit., ii, 580.
- Griffith, Sir R. J., obit., iii, 655.
- Griffiths, A. B., experiments by, x, 158, 576.
- Grigsby, H. B., obit., vi, 683.
- Grinaux, M. E., experiments by, v, 96; vii, 87.
- Grimm, Jacob, ix, 745.
- Grimshaw, experiments, vi, 99.
- Grimston, invention by, viii, 381.
- Grimwood, F. S. C., obit., xvi, 673.
- Grinnell, J., obit., x, 649.
- Grinnell, J. B., obit., xvi, 625.
- Grinnell Land, an island, ix, 35.
- Grippe, la, see Influenza.
- Grisel, M., engineer, x, 332.
- Grivas, D., sketch, xiv, 661.
- Grocholski, Casimir de, vii, 48.
- Groddek, Prof., xi, 538.
- Groebe-Neudörfchen, obit., i, 634.
- Groen V., W., obit., i, 634.
- Groesbeck, Abraham, obit., xi, 679.
- Groome, J. B., obit., xviii, 554.
- Gross, S. D., obit., ix, 606.
- Gross, S. W., sketch, xiv, 633.
- Grosvenor Gallery exhibitions, x, 360; xi, 345; xii, 277.
- Grotius, on international law, vii, 618.
- Grouse, in United States, x, 388.
- Grove, inventions by, vi, 254; vii, 265.
- Grover, Lafayette, sketch, i, 653.
- Grover, Stephen, ix, 146.
- Grün, Anastasius, i, 51.
- Grüneisen, K. von, obit., iii, 655.
- Gruner, M., experiments, ix, 472.
- Grünhagen, Herr, experiments by, x, 690; xi, 674.
- Grunow, ix, 521.
- Grünwald, explorations, iii, 359.
- Gruppe, O. F., sketch, i, 375.
- Guachemaca, x, 299.
- Guadeloupe, viii, 821; ix, 804; x, 783; xii, 840; xiv, 824; xv, 334; xvi, 865; xvii, 794.
- Guano Deposits in South America, war over, iv, 82; as a fertilizer, vi, 276, 277; in Peru, vii, 683; and Nitrate Deposits, controversy on, vii, 628; from Chili, x, 164; illustrations, working in the North Island, i, 661; bat, xi, 276.
- Guardia, Gen., iii, 227; death of, vii, 176.
- Guarantee Investment Company, in Missouri, xviii, 500.
- Guatemala, statistics, etc., in each volume; map, i, 374; views in, i, 374; v, 349; viii, 426, 427; attempted assassination of President Barrios, ii, 375; ix, 385; central railway, iii, 417; iv, 463; education in, v, 350; cinchona bark, viii, 427; new ports of entry, ix, 385; land grants, ix, 385; proposed union of Central American States, x, 464; xii, 348; defection of Zaldivar, 465; death of Barrios, 466; Barillas president, xi, 412; abolition of torture, 414; revolutionary plots, 414; attempt to poison the president, 414; attempt at revolution, xii, 347; Archbishop Casanova, 347; alcades, ill., xvi, 352; civil disturbances in, 353; suspension of the constitution, xviii, 370;

- Mexican boundary, xx, 345; see also Boundaries.
- Guatemala La Antigua, illustration, i, 374.
- Guayaquil, earthquake at, xii, 232.
- Gubert, Louise, obit., vii, 637.
- Guden, Dr. von, drowned, xi, 512, 716.
- Gudmundsson, Sigurdur, iv, 314.
- Guedists, the, ix, 344.
- Guelph fund, vii, 358.
- Guericke, H. E. F., obit., iii, 655.
- Guerin, Thomas J., obit., xii, 588.
- Guerne, Prof., his excursion with Prince Albert in the northern Atlantic, xii, 316.
- Guernsey, Victor Hugo's home in, illustration, x, 482.
- Guest, John, sketch, iv, 464.
- Guglielmo, Signor, xii, 494.
- Guiana, viii, 821; ix, 803, 805; x, 783; convicts to be sent to, ix, 343; x, 378; British, xii, 800; xiii, 839; xiv, 403; xv, 407; xvi, 348; French, xiii, 840; xiv, 824; xv, 330; Dutch, xvi, 564.
- Guibert, J. H., obit., xi, 716.
- Guide for fish-line, xvi, 710.
- Guidi, F. M., obit., iv, 699.
- Guigniant, J. D., sketch, i, 375.
- Guilbert, A. V. F., sketch, xiv, 661.
- Guinea, French and Portuguese, xi, 371.
- Guion, J. M., obit., iii, 638.
- Guiraud, Ernest, obit., xvii, 594.
- Guiteau's Trial, vi, 381; execution, vii, 809.
- Gulf Stream, investigation of, v, 288; xii, 316; Pacific, v, 289; vi, 326.
- Gull, Sir W., obit., xv, 680.
- Gulliver, J. P., obit., xix, 579.
- Gulran, x, 8.
- Gum-gelactine, vii, 88.
- Gum-lac, from Arizona, vi, 100.
- Gun-cotton, x, 343.
- Gundlach, E., ix, 499, 503, 505.
- Gundry, Richard, obit., xvi, 625.
- Gunganama's embassy, xvi, 107.
- Gungi, J., obit., viii, 599.
- Gung'l Josef, sketch, xiv, 661.
- Gunnery, improvements in, vi, 547.
- Gunning, T. B., sketch, xiv, 633.
- Gunning, W. D., sketch, xiii, 636.
- Gunnisonite, vii, 87.
- Gunpowder, x, 343; xvi, 552.
- Guns, construction of, vii, 576; one hundred ton, used at Spezzia, illustration, 579; three types of, 578; the Armstrong, 581; the dynamite, with illustration, ix, 274; rifles, with illustrations, xii, 274, *et seq.*; for coast defense, xii, 348; new, xiii, 792; xiv, 811. See also under Army.
- Gunter, J. C., obit., i, 618.
- Gurney, E. W., obit., xi, 679.
- Gurney, Russell, obit., iii, 655.
- Gurney, William, sketch, iv, 464.
- Güssfeldt, Paul, explorations, i, 331; ix, 542.
- Gustavus, Prince, obit., ii, 601.
- Gutcheff, Major, x, 731.
- Gutheim, James K., obit., xi, 679.
- Guthrie, Dr., researches, x, 151.
- Gutzkow, K. F., sketch, iii, 418.
- Guyot, Arnold H., sketch and portrait, ix, 386.
- Gylden, observations, viii, 26.
- Haarlem, views in, illustration, i, 583.
- Haas, M. F. H. De, obit., xx, 575.
- Haabib Abdoer Rahman, ix, 558.
- Hachette, J. G., obit., xvii, 594.
- Hackett, Sir W., obit., ii, 601.
- Hackett, W. H. T., obit., iii, 638.
- Hackländer, F. W., obit., ii, 601.
- Haddan, J. L., invention, iii, 286.
- Hadji, Loja, obit., xii, 628.
- Hadrian, palace of, xi, 34.
- Hæmatein, anhydrous crystalline, vii, 88.
- Hæmatoblasts. See Blood, viii, 60.
- Hæmorrhage, arrest of, viii, 60.
- Hæmorrhoids, viii, 751.
- Haffner, K., obit., i, 635.
- Hagen, E. A., obit., v, 600.
- Hagen, H. A., obit., xviii, 554.
- Hager, A. D., sketch, xiii, 636.
- Hagerstown, Md., xviii, 159.
- Haggan, experiments, vi, 751.
- Haggenmacher, G. A., explorations of, i, 331.
- Hagner, Peter V., obit., xviii, 554.
- Hagood, Johnson, v, 670.
- Hague, Arnold, x, 404.
- Hague, Mrs. S., obit., ii, 580.
- Hague, William, obit., xii, 588.
- Hahn-Hahn, Countess, obit., v, 600.
- Hahn, Michael, obit., xi, 680.
- Haight, Charles, obit., xvi, 625.
- Haight Henry H., obit., iii, 638.
- Haille, William, obit., i, 618.
- Hainan, revolt in, iv, 144.
- Haines, A. A., obit., xvi, 625.
- Haines, D., obit., ii, 580.
- Haines, W. S., experiments by, vi, 351.
- Haines's Bluff, assault on, x, 424, 425.
- Hair-cloth, ix, 387.
- Hake, T. G., obit., xx, 611.
- Hakim Beg Toreh, x, 173.
- Hakodai, illustration, i, 429.
- Halberstadt, W., experiments by, viii, 112; x, 155.
- Halberr, Dr., x, 37.
- Haldeman, S. S., sketch, v, 350.
- Hale, C. B., obit., i, 618.
- Hale, Horatio, xi, 46.
- Hale, Nathan, statue of, xii, 280.
- Hale, Sarah J., sketch, iv, 465.
- Halévy, L., obit., viii, 599.
- Half-breeds, rebellion of, in Canada, x, 124.
- Halifax, Nova Scotia, xiv, 148; exhibition, xx, 560.
- Halifax, Viscount, obit., x, 661.
- Hall, Anna M., obit., vi, 693.
- Hall, Asaph, prizes to, iii, 39; iv, 53; observations by, iv, 52; viii, 26; ix, 50, 53; xi, 53.
- Hall, Benjamin F., obit., xvi, 626.
- Hall, B. H., obit., xviii, 554.
- Hall, Benton J., sketch, xii, 649.
- Hall, Edward, obit., ii, 580.
- Hall, Edward, obit., xix, 613.
- Hall, Edwin, D. D., obit., ii, 580.
- Hall, Ezra, obit., ii, 580.
- Hall, F. P., experiments, viii, 116.
- Hall, James, sketch, xiv, 633.
- Hall, J. W., iii, 236; obit., xvii, 549.
- Hall, L. J. P., obit., xvii, 550.
- Hall, Samuel C., sketch, xiv, 661.
- Hall, Dr. W. H., obit., i, 618.
- Hall, Sir W. H., obit., iii, 655.
- Hallé, Sir Charles, obit., xx, 611.
- Halle, University of, ii, 658.
- Halle, C. E., pictures by, x, 365; xii, 277.
- Halleck, Gen. H. W., x, 423, 424, 559, 560.
- Haller, F. N., obit., i, 635.
- Hallet's Reef, illustration, x, 472.
- Hallett, John H., obit., iii, 638.
- Halliburton, W. D., ix, 656.
- Halliday-Duff, A., obit., ii, 601.
- Hals, Frans, x, 363.
- Halsall, W. F., xi, 347.
- Halsbury, Lord, xi, 394.
- Halsey, G. A., obit., xix, 579.
- Halstead, O. S., obit., ii, 581.
- Halstead, R. H., collection, xii, 280.
- Halsted, R. F., sketch, vi, 399.
- Halsted, William, obit., iii, 638.
- Haly, Sir W. O'G., obit., iii, 655.
- Hamassen, i, 3, 4; rebellion, ii, 2.
- Hamberg, H. E., xi, 545.
- Hamberger, of Jena, xi, 539.
- Hambright, Henry A., obit., xviii, 555.
- Hambruch, invention, i, 518.
- Hamburg, in the Customs Union, vii, 355.
- Hamburg, view of, iv, 438; incorporation of, xiii, 372.
- Hamer, Thomas L., x, 421.
- Hamerling, R., sketch, xiv, 661.
- Hamerton, Philip G., obit. and port., xix, 613.
- Hamilton, A., sketch, xiv, 633.
- Hamilton, C., xviii, 160.
- Hamilton, C. S., obit., xvi, 626.
- Hamilton, Dr. D. J., investigations by, ix, 654.
- Hamilton, F. H., sketch, xi, 680.
- Hamilton, James A., obit., iii, 638.
- Hamilton, J. G., xii, 280.
- Hamilton, Lord George, portrait, x, 445; sketch, x, 449.
- Hamilton, M. C., obit., xviii, 555.
- Hamilton, Ontario, xii, 122; xv, 129.
- Hamilton, Sir J. J., obit., i, 635.
- Hamilton, P., obit., ix, 606.
- Hamilton, Peter, sketch, xiii, 637.
- Hamilton, Sir W., obit., ii, 601.
- Hamilton, W. J., sketch, xiii, 637.
- Hamlet, experiments by, vi, 99.
- Hamley, E. B., obit., xviii, 581.
- Hamlin, Charles E., obit., xi, 681.
- Hamlin, Hannibal, obit. and port., xvi, 626.
- Hammerich, F., obit., ii, 601.
- Hammill, S. M., sketch, xiv, 633.
- Hammon, E., obit., xv, 680.
- Hammond, Gen., obit., i, 618.
- Hammond, John, sketch, xiv, 633.
- Hammond, Dr. W. A., ix, 554.
- Hampson, Thomas, ix, 45.
- Hampton, Wade, Governor of South Carolina, i, 725; sketch, ii, 375.
- Hampton, Wade, Jr., obit., iv, 693.
- Hancock, John, obit., xvi, 626.
- Hancock, John, obit., xviii, 555.
- Hancock, Gen. Winfield S., sketch, v, 350; portrait, v, 351; letter of acceptance, v, 701; obit., xi, 414.
- Hand, Augustus C., obit., iii, 638.
- Hand, Daniel, obit., xvi, 626.
- Hand, Samuel, obit., xi, 681.
- Handley, John, obit., xx, 575.
- Hand-organ, x, 614.
- Handy, Isaac W. K., obit., iii, 638.
- Haneberg, D. von, sketch, i, 375.
- Hänel, Gustav F., obit., iii, 655.



- Hauey, investigations by, vi, 19.  
 Hanfstängl, F. von, obit., ii, 601.  
 Hanks, John, sketch, xiv, 633.  
 Hanksite, new mineral, x, 153.  
 Hann, Prof., xii, 492.  
 Hanna, B. W., obit., xvi, 627.  
 Hannay, J. B., experiments by, iii, 85; iv, 136; v, 86.  
 Hauuen, James, Lord, obit., xix, 614.  
 Hannibal, Mo., xv, 129.  
 Hannington, Bishop, murder of, xi, 369.  
 Hanoteau, H., obit., xv, 680.  
 Hanover, death of the ex-King, and claim to the crown of, iii, 334; ix, 360; Guelph fund, vii, 358.  
 Hansa, the, expedition of, i, 81.  
 Hansen, J. E., obit., ii, 602.  
 Hanson, invention by, vii, 741.  
 Hanson, Sir R. D., sketch, i, 375.  
 Hanston, experiments by, iv, 136.  
 Haomoc, battle of, x, 25, 26.  
 Häpke, M., xii, 492.  
 Happersberger, statue by, x, 367.  
 Harbor defenses of United States, v, 29.  
 Harbor improvements, v, 244; Antwerp, vii, 280; docks at Milford Haven, vii, 279; xii, 260; in Washington State, xix, 770.  
 Harcourt, Vernon, invention, vi, 96; ix, 45; x, 46.  
 Harcourt, Vernon, sketch, v, 352.  
 Hardeman, T., obit., xvi, 627.  
 Hardenberg, A. A., sketch, xiv, 633.  
 Hardie, Gen. J. A., obit., i, 618.  
 Hardin, C. H., obit., xvii, 550.  
 Harding, C., xi, 544.  
 Harding, William G., obit., xi, 681.  
 Harding, W. W., sketch, xiv, 634.  
 Hardinge, Gen., x, 13.  
 Hardouin, Georges, obit., xviii, 582.  
 Hardy, Benjamin F., obit., xi, 681.  
 Hardy, Mother, obit., xi, 790.  
 Hardy, Sir T. D., obit., iii, 655.  
 Hare, George E., obit., xvii, 550.  
 Hare, Thomas, obit., xvi, 673.  
 Hares, in United States, x, 389.  
 Harkey, S. W., sketch, xiv, 634.  
 Harkness, James, obit., iii, 638.  
 Harkness, W., his address, xiii, 42; astronomical work, 47, 49; port., xviii, 24.  
 Harlan County disorders, xiv, 487.  
 Harlan, J. M., sketch, ii, 376.  
 Harlech, Baron, obit., i, 635.  
 Harlem River Bridge, xxi, 297.  
 Harlem Ship Canal, xii, 250.  
 Harmattan wind, the, xii, 416.  
 Harmon, Judson, sketch and port., xx, 728.  
 Harmonium, x, 618.  
 Harmony Society, the, xviii, 611.  
 Harnett, W. H., obit., xvii, 550.  
 Harney, W. S., sketch, xiv, 634.  
 Harper, Fletcher, sketch, ii, 376; obit., xv, 648.  
 Harper's Ferry, surrender of, x, 560; illustration, view of, ii, 764.  
 Harrar, conquest of, xii, 2.  
 Harriman, Tenn., xvi, 156.  
 Harriman, Walter, obit., ix, 606.  
 Harrington, C. S., obit., xii, 681.  
 Harrington, George, obit., xvii, 550.  
 Harrington, H. F., obit., xii, 588.  
 Harris, Elisha, obit., ix, 607.  
 Harris, John W., obit., xii, 589.  
 Harris, Samuel S., sketch, xiii, 637.  
 Harris, S. D., obit., ii, 581.  
 Harris, Townsend, obit., iii, 638.  
 Harris, William L., obit., xii, 589.  
 Harrisburg, Pa., xi, 170; view of, i, 657.  
 Harrison, Alexander, x, 362; prize to, 367; xi, 343.  
 Harrison, Benjamin, sketch, xiii, 407; port., frontispiece. Messages. See Congress.  
 Harrison, B. F., obit., xi, 682.  
 Harrison, Caroline Lavinia Scott, sketch and port., xvii, 331.  
 Harrison, Carter H., sketch and port., xviii, 371.  
 Harrison, W. H., xi, 536.  
 Harrowby, Earl of, x, 449; sketch, x, 447.  
 Hart, E., experiments by, viii, 633.  
 Hart, Joel T., sketch, ii, 376.  
 Hart, John S., sketch, ii, 377.  
 Hart, Samuel, obit., iii, 639.  
 Hart, William, obit., xix, 579.  
 Hartford, xi, 170; soldiers' and sailors' monument at, xii, 280; new Capitol at, iii, 219; water, xix, 776.  
 Hartington, Marquis of, sketch, v, 353; x, 13; xi, 399.  
 Hartmann, Herr, xi, 389.  
 Hartmann, J. von, obit., iii, 655.  
 Hartnaff, J. F., sketch, xiv, 634.  
 Hartridge, Julian, sketch, iv, 465.  
 Hartt, Charles F., obit., iii, 639.  
 Hartwig, Dr., discoveries by, iv, 51; v, 35; observations, vi, 39; x, 53.  
 Hartzell, J. H., obit., xv, 648.  
 Hartzbusch, J. E., obit., v, 600.  
 Harvard College, views of buildings, ii, 483-490.  
 Harvard, John, statue, x, 362.  
 Harvests of the World, vii, 376.  
 Harvey, H. A., obit., xviii, 555.  
 Harvey, J. M., obit., xix, 580.  
 Harvey, Sir G., sketch, i, 376.  
 Harvey, Peter, obit., ii, 581.  
 Harvey, W. S., obit., xii, 589.  
 Haseltine, C. F., collection, xii, 280.  
 Hasenauer, Carl Freiherr von, obit., xix, 614.  
 Hasenclever, R., sketch, i, 376.  
 Hasenclever, W., sketch, xiv, 662.  
 Haskett, W. J., obit., i, 619.  
 Hassan, Pasha, i, 4, *et seq.*  
 Hassard, J. R. G., obit., xiii, 637.  
 Hasselquist, T. N., obit., xvi, 627.  
 Hassinger, D. S., obit., xii, 589.  
 Hassler, Dr., xii, 314.  
 Hastings, xiii, 165.  
 Hastings, Alice, sketch, xiii, 637.  
 Hastings, G. F., obit., i, 635.  
 Hastings, Hugh J., obit., viii, 589.  
 Hastings, S. C., obit., xviii, 555.  
 Hatasu, Queen, vii, 257; throne of, xii, 21.  
 Hatch, Edward, sketch, xiv, 634.  
 Hatch, Edwin, sketch, xiv, 662.  
 Hatch, Rufus, obit., xviii, 555.  
 Hatcher's Run, fight at, x, 428.  
 Hatchie, battle of the, x, 424.  
 Hatfield-McCoy feud, xiii, 463.  
 Hatfield, Edwin F., obit., viii, 590.  
 Hatfield, H., observations, iii, 37.  
 Hatfield House, x, 722.  
 Hatfield, Robert M., obit., xvi, 627.  
 Hathorn, Henry H., obit., xii, 589.  
 Hatlestad, Ole J., obit., xviii, 556.  
 Hatton, F., experiments by, vi, 98.  
 Hatton, Frank, obit., xix, 580.  
 Hatton, G., xi, 537.  
 Hattou, John L., obit., xi, 717.  
 Hatzfeldt, Count, x, 140, 143, 419.  
 Hatzler, Elizabeth, obit., vii, 638.  
 Haug, Martin, sketch, i, 376.  
 Hausemann, Dr., xi, 539.  
 Hauser, Miska, obit., xii, 628.  
 Hausner, O., obit., xv, 680.  
 Haussmann, Baron, obit., xvi, 674.  
 Hautefeuille and Chappuis, discovery by, v, 86.  
 Havana, illustration, i, 732.  
 Havemeyer, F. C., obit., xvi, 627.  
 Haven, E. O., sketch, vi, 399.  
 Haven, Gilbert, sketch, v, 353.  
 Haven, S. H., obit., xv, 648.  
 Haverhill, Mass., xv, 130.  
 Havre, view of, iv, 390.  
 Hawaiian islands, ix, 388; x, 467; xi, 420; xii, 349; xiii, 412; xiv, 410; xv, 415; xvi, 353; xvii, 332; xviii, 373; xix, 342; President Cleveland's message concerning, xviii, 386; revolution in, 353; new constitution of, 354; treaty with United States, 355; xix, 225; xx, 345; discussed in Congress, xx, 193.  
 Hawes, Richard, obit., ii, 581.  
 Hawkes, Gen. R., obit., i, 635.  
 Hawkes, S. J., xiii, 14.  
 Hawkins, Jacob, obit., xx, 575.  
 Hawkins, Samuel W., obit., xvi, 674.  
 Hawkshaw, Sir J., drainage engineering by, iii, 29.  
 Hawsers. See Cordage.  
 Hay, Charles A., obit., xviii, 556.  
 Hay, J. S., explorations of, i, 333.  
 Hayercraft, John B., experiments by, x, 691.  
 Hayden, Ferdinand V., survey, i, 335; ii, 336; x, 402-404.  
 Hayden, Josiah, obit., ii, 581; sketch and portrait, xii, 356.  
 Hayem, experiments by, viii, 60.  
 Hayes, A. A., obit., xvii, 550.  
 Hayes, E., bridge design, viii, 313.  
 Hayes, Isaac, sketch, iv, 466.  
 Hayes, Isaac Israel, obit., vi, 684.  
 Hayes, John Lord, obit., xii, 580.  
 Hayes, Lucy W., sketch and port., xiv, 634.  
 Haynes, R. B., sketch, i, 376; portrait, i, frontispiece; election, see Election of 1876; inaugural, ii, 659; sketch, xviii, 386; home, 388; messages, see Congress and Public Documents.  
 Hayman, Samuel B., obit., xx, 575.  
 Haymerle, Karl von, sketch, iv, 465; pamphlet by, iv, 527; vi, 50, 399.  
 Haynald, L., obit., xvi, 674.  
 Hayne, Paul H., obit., xi, 421.  
 Hays, James B., sketch, xiii, 637.  
 Hayti, viii, 428; ix, 393; insurrection, viii, 429; ix, 393; x, 468; xi, 422; xii, 357; xiii, 413; xiv, 411; xv, 416; xvi, 355; xvii, 335; xviii, 391; xx, 347.  
 Hayward, A., obit., ix, 616.  
 Haywood, B., obit., iii, 639.  
 Hazara rebellion, the, xvii, 2.  
 Hazard, Mrs., iv, 639.  
 Hazard, Rowland G., sketch, xiii, 637.  
 Hazen, H. Allen, x, 583.  
 Hazen, J. H., sketch, xiv, 635.  
 Hazen, Lake, x, 583.  
 Hazen, W. B., sketch, xii, 358.  
 Hazlehurst, Rev. T., obit., i, 635.  
 Head, Natt, obit., viii, 590.  
 Health, influence of chemical works

- on, see Chemistry, i, 84; climatic influence in Colorado, iv, 156.
- Health, Charity, and Lunacy, Mass., Board of, iv, 596.
- Health Congress, i, 72.
- Health, National Board of, iv, 466.
- Healy, imprisonment of, viii, 413.
- Healy, G. P. A., obit., xix, 580.
- Healy, J. P., obit., vii, 638.
- Hearing, testing, iv, 503.
- Hearing, or Color-Hearing, vi, 400.
- Hearst, G., obit., xvi, 627.
- Heart, electrical condition of the, i, 250; experiments, viii, 681; new remedy for diseases of, ix, 272.
- Hearthfinery, improved, ix, 478.
- Heat, magnetic equivalent, i, 251; method for determining, x, 154; of the moon, xi, 55; radiation of, from the human body, xii, 487; of the globe, lost by radiation, 489; regulator, illustration, 651; xiv, 693; xvi, 728; xviii, 618; xx, 649.
- Heat-spectra, invisible, xi, 55.
- Heath, explorations by, vi, 332.
- Heating and Ventilation of Dwellings, v, 359.
- Heating of Houses, vi, 400.
- Heaton, Judge, obit., ii, 581.
- Hébert, P. O., sketch, v, 353.
- Hebrews, in Egypt, the, ix, 19; x, 35, 36.
- Hebrew technical institute, the, xii, 235.
- Hebrides, New, xi, 60; article, with map, xii, 537.
- Heckel, experiments by, viii, 118.
- Hecker, Friedrich, obit., vi, 694.
- Hecker, I. T., obit., xiii, 638.
- Hedge, F. H., obit., xv, 648.
- Hedstrom, O. G., obit., ii, 581.
- Heemskerck, M. J., obit., vi, 694.
- Heer, L., obit., iv, 699.
- Heffele, Karl Josef, obit., xviii, 581.
- Heidelberg, view of, ii, 347; Festival, xi, 391.
- Heidenblain, experiments by, x, 694.
- Heilman, W., obit., xv, 649.
- Heilprin, Michael, sketch, xiii, 638.
- Heimann, B. A., sketch, ii, 377; obit., iii, 655.
- Heine, Gustave, obit., xi, 717.
- Heinen, Dr. C., explosive, x, 104.
- Heinrich, experiments, viii, 521.
- Heis, E., obit., ii, 602.
- Heiskell, J. M., case of, v, 187.
- Heisler, F., obit., i, 635.
- Heiss, M., obit., xv, 649.
- Helena, Ark., xviii, 160.
- Helena, Montana, xiv, 149.
- Helfmann, Hessa, vi, 796-798.
- Heliogoland, illustration, iii, 404; xv, 376.
- Heliograph, the Manse, iv, 471; use of, in Afghan War, v, 8.
- Heliometer, the largest, ix, 47.
- Heliopolis, destruction of, ix, 600.
- Hellenic Society, the, xiii, 26.
- Hellenic studies, society for the promotion of, x, 35.
- Heller, Stephen, sketch, xiii, 663.
- Hell-gate gorge, Fraser river, British Columbia, xviii, 108.
- Hell-Gate, improvement of, i, 377; v, 250; vi, 250; x, 470; illustrations, x, 470-473, 475, 477.
- Hellhoffite, x, 347.
- Hellmann, Dr., xi, 543.
- Hellquest, Charles Gustave, xi, 343.
- Helmholtz, H. L. F. von, sketch and port., xix, 348.
- Helmholtz, misquotation of, x, 691.
- Hemans, C. I., sketch, i, 382.
- Hemenway, Mary, obit., xix, 580.
- Hemingway defalcation, xv, 559.
- Henderson, P., obit., xv, 649.
- Hendricken, T. F., obit., xi, 682.
- Hendricks, Thomas A., sketch, i, 382; sketch and portrait, ix, 395; record of death, x, 650.
- Hennessy, J. P., obit., xvi, 674.
- Henne, Antonia, obit., xii, 590.
- Henneberg, Rudolf, sketch, i, 383.
- Hennequin, A. N., obit., xii, 628.
- Henner, J. J., x, 359, 363; xi, 343, 347; xii, 276.
- Henni, J. M., sketch, vi, 400; obit., vi, 794.
- Henningsen, C. F., obit., ii, 581.
- Henrici, Jacob, obit., xvii, 550.
- Henrietta island, vii, 331.
- Henriquel, N. D., obit., xvii, 594.
- Henry, Caleb S., obit., ix, 607.
- Henry, James, obit., i, 635.
- Henry, Joseph, sketch and portrait, iii, 419; experiments, v, 446; port., xv, 574.
- Henry, J. T., obit., iii, 639.
- Henry, Morris H., obit., xx, 575.
- Henry, Paul, discoveries by, i, 46; ii, 44; vii, 35; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Prosper, discovery by, iii, 36; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Dr. R. S., ix, 656.
- Henry, Sir T., obit., i, 635.
- Hensel, Louise, obit., i, 635.
- Henselt, Adolf, sketch, xiv, 662.
- Heracleopolis, excavations at, xvi, 21.
- Heraclina, x, 346.
- Herat, capture of, vii, 4; its importance, iv, 6; ix, 4, 6, 7; Persian desire to annex, x, 14; description, x, 7; illustration, views in, ii, 6; x, 1.
- Herbeck, J., obit., ii, 602.
- Herbert, Earl of Carnarvon, portrait, x, 447.
- Herbert, Hilary A., sketch and port., xviii, 735.
- Herbert, Percy E., sketch, i, 383.
- Herbinger, Col., x, 26, 27.
- Herbst, E., obit., xvii, 594.
- Hereulano de Carvalho e Arango, A., obit., ii, 602.
- Heredity, nature by, x, 47.
- Hereford, F., obit., xvi, 627.
- Hereroland, ix, 362, 363; x, 137, 138.
- Heresy-trials, Andover, xi, 206.
- Hergenrother, J., obit., xv, 680.
- Hérissou, viii, 357, 367.
- Hering, Constantine, v, 354.
- Heri-Rud, the, x, 4; source of the, xii, 309.
- Herkomer, H., x, 359; xii, 277.
- Herman, Henry, obit., xix, 614.
- Hermes of Commagene, ix, 23.
- Hermitage, St. Petersburg, exhibition at, xii, 278.
- Herndon, W. H., obit., xvi, 628.
- Herndon, Com. William L., xi, 44.
- Hernia, viii, 751.
- Herodotus, quoted, ix, 21.
- Heron, Matilda, obit., ii, 581.
- Heroöpolis, ix, 19; x, 35.
- Herreshoff, C. F., obit., xiii, 638.
- Herries, Baron, obit., i, 635.
- Herrmann, Herr, obit., xii, 628.
- Herron, Dr. E. F., experiments ix, 658; x, 695.
- Herschel, observations, iii, 36.
- Herschel, Sir John, xi, 581.
- Herter, Dr., xii, 674.
- Hertz, Heinrich, obit., xix, 614.
- Hertzen, Alexander, iv, 682.
- Hervey Islands, xiv, 410.
- Herz, C., experiments by, vi, 258; computations, viii, 21.
- Herzegovina, i, 757; v, 46; vii, 55; viii, 548; ix, 64; maps, i, 751, 754; xiv, 64; xix, 64.
- Herzen, experiments by, viii, 635.
- Herzog, Bishop, sketch, i, 650.
- Herzog, Hans, obit., xix, 614.
- Hesse, F., W., sketch, xiii, 663.
- Hesse, Prince Alexander, sketch, xiii, 663.
- Heuglin, T., sketch, i, 322, 383.
- Heunert, K., obit., i, 635.
- Heusch, Capt., ix, 359.
- Hewes, C. M. A., obit., iii, 639.
- Hewett, Com., i, 9; contest with Africans, i, 9; ix, 293, 296.
- Hewett, Consul, x, 119-121.
- Hewitt, E. A., obit., ii, 581.
- Hewitt, J. H., obit., xv, 649.
- Hewson, James, obit., iii, 639.
- Hexamer, statue by, v, 555.
- Heyward, experiments, vi, 100.
- Hibben, E. C., obit., i, 619.
- Hicklin, J., obit., ii, 602.
- Hiekok, L. P., sketch, xiii, 638.
- Hickory Town, Africa, x, 121, 122.
- Hicks-Beach, Michael, x, 440; portrait, 447; sketch, x, 449; xi, 399.
- Hicks Pasha, William, in the Sudan, viii, 300; defeat and death of, viii, 301; sketch, port., viii, 430; x, 318.
- Hicks, T., obit. and port., xv, 649.
- Hidden, W. E., x, 153.
- Hiddenite, vi, 401.
- Hieroglyphics, translation, ix, 600.
- Hiestand, John A., xv, 650.
- High Bridge, view of, i, 604.
- High license in Minn., xii, 512.
- Highest mountain, vi, 332.
- Higgins, A., obit., xv, 650.
- Higginson, Thomas W., ix, 598.
- Higinbotham, G., obit., xviii, 581.
- Hildburghausen, H., obit., xi, 682.
- Hildebrand, B., obit., iii, 656.
- Hildebrand, Heinrich R., obit., xix, 615.
- Hildebrandsson, Prof., xii, 490.
- Hildebrandt, P., obit., vi, 694.
- Hilditch, Sir E., obit., i, 635.
- Hilgard, J. E., ix, 44.
- Hilgard, J. E., obit., xvi, 628.
- Hill, Alfred J., obit., xx, 575.
- Hill, Benjamin H., sketches, ii, 337; iv, 471; and portrait, vii, 378; statue of, xi, 347.
- Hill, Daniel H., sketch, xiv, 635.
- Hill, David B., ix, 588; x, 637; xi, 11; renominated, xiii, 609. See also in Congress.
- Hill, Frederick, xii, 701.
- Hill, G. W., xii, 45.
- Hill, John B., obit., xi, 682.
- Hill, Mrs. H., obit., ii, 602.
- Hill, Joshua, obit., xvi, 628.
- Hill, Sir Rowland, sketch, iv, 472.
- Hill, Thomas, obit., xvi, 629.
- Hillard, George S., sketch, iv, 473.
- Hillebrand, K., obit., ix, 616.
- Hillebrand, W. F., xii, 106.
- Hiller, F., obit., x, 661.



- Hilliard, F., obit., iii, 639.  
 Hilliard, Henry, sketch, ii, 377.  
 Hilliard, H. W., obit., xvii, 550.  
 Hilton, Dr. J., obit., iii, 656.  
 Himalayas, altitudes in, ix, 543; ascent of, ix, 349.  
 Himly, experiments by, ii, 501.  
 Hineckley, Isaac, sketch, xiii, 638.  
 Hineks, E. W., obit., xix, 581.  
 Hineks, Sir Francis, obit., x, 478.  
 Hind, discovery of asteroids, ii, 44.  
 Hind, John R. obit., xx, 611.  
 Hindus, aid to the British, x, 14.  
 Hinkel, Charles J., obit., xix, 582.  
 Hinkhead, John H., iii, 598.  
 Hirsch, Samuel, sketch, xiv, 635.  
 Hirzel, S., obit., ii, 602.  
 Hissarlik, excavations at, ix, 24.  
 History, recent works of. See Literature, in every volume.  
 Hitchcock, J. R., obit., iii, 639.  
 Hitchcock, R. B., sketch, xiii, 638.  
 Hitchcock, Roswell D., clergyman, sketch and port., xii, 358.  
 Hitchcock, Roswell D., naval officer, obit., xvii, 550.  
 Hitchcock, R. S., obit., xvi, 629.  
 Hittites, vii, 263; ix, 28; inscriptions, xii, 25; xiii, 32; xvii, 14.  
 Hla-oo, xii, 88.  
 Hoadley, John C., obit., xi, 682.  
 Hoadley, Silas, xiii, 11.  
 Hoard, W. D., nominated, xiii, 847.  
 Hoar, Ebenezer R., obit., xx, 576.  
 Hobart, John H., sketch, xiv, 635.  
 Hobart Pasha, sketch, ii, 377; obit., xi, 717.  
 Hobbs, Alfred C., obit., xvi, 629.  
 Hoboken, xi, 170.  
 Hochstetter, F., obit., ix, 616.  
 Hocking valley, strike, ix, 681; x, 672.  
 Hodge, A. A., obit., xi, 683.  
 Hodge, Caspar W., obit., xvi, 629.  
 Hodge, Charles, sketch, xii, 420.  
 Hodgkins, T. G., obit., xvii, 551.  
 Hodgson Brian H., obit., xix, 615.  
 Hodgson, Telfair, obit., xviii, 556.  
 Hodgson, W. N., sketch, i, 384.  
 Hodson, Doveton, obit., i, 635.  
 Hoe, Richard Mareh, obit., xi, 683.  
 Hoe, Robert, obit., ix, 607.  
 Hoeck, K. C. F., obit., ii, 602.  
 Hoes, Rev. R. R., xii, 709.  
 Hoey, John, obit., xvii, 551.  
 Hoff, H. K., obit., iii, 629.  
 Hoffman, Charles F., obit., ix, 607.  
 Hoffman, John T., sketch, xiii, 639.  
 Hoffman, M., obit., iii, 639.  
 Hoffman, Ogden, obit., xvi, 629.  
 Hoffmann, Heinrich, obit., xix, 615.  
 Hofman, A. W., obit., xvii, 595.  
 Hofmann, J. von, obit., ii, 602.  
 Hofmeister, experiments by, x, 694, 695.  
 Hofmeister W., obit., ii, 602.  
 Hogan, T. M., obit., xv, 650.  
 Hogarth pictures, sale of, x, 361.  
 Hogg, Sir J. W., sketch, i, 384.  
 Hoghton, Sir H. de, obit., i, 635.  
 Hog Island dispute, xiv, 532.  
 Hogenhal, Countess, obit., ii, 603.  
 Hohenzollern, castle of, illustration, ii, 350.  
 Hoisting-shears, xiii, 306.  
 Holbrook, Dr. M. E., ix, 654.  
 Holcombe, Capt., x, 139, 140.  
 Holdeleiss, F., observations by, iv, 135.  
 Holden, Edward S., ix, 46; xi, 58.  
 Holden, W. W., obit., xvii, 551.  
 Holder, J. B., sketch, xiii, 639.  
 Holford bonds, the, ix, 43.  
 Holguin, Carlos, obit., xix, 615.  
 Holidays, xii, 475.  
 Holkar, Maharajah Tuckaji Rao, obit., xi, 717.  
 Holl, Frank, sketch, xiii, 633.  
 Holland. See Netherlands.  
 Holland, George W., obit., xx, 576.  
 Holland, John, ix, 476.  
 Holland, J. G., sketch, vi, 401.  
 Holley, Alex. L., bust of, xv, 621.  
 Holley, Sallic, obit., xviii, 556.  
 Holliday, Benjamin, obit., xii, 590.  
 Holliday, F. W. M., sketch, ii, 762.  
 Hollins, G. N., sketch, iii, 420.  
 Holly, II. H., obit., xvii, 551.  
 Holly's steam-heating, iii, 421.  
 Holly Springs, capture of, x, 424.  
 Holm, G., x, 398.  
 Holmes, Alfred, obit., i, 635.  
 Holmes, Oliver Wendell, portrait, frontispiece, xix; sketch, 350; birthplace, 353; last residence, 355; facsimile of manuscript, 356.  
 Holmes, Senator, obit., i, 635.  
 Holmes, S. T., obit., xv, 650.  
 Holmes, T. H., obit., v, 593.  
 Holsinger, II. R., vii, 63.  
 Holst, Hans Peter, obit., xviii, 581.  
 Holstein Canal, xv, 281.  
 Holstein-Holsteinborg, Count, obit., xvii, 595.  
 Holstein-Ledreborg, Count, x, 291.  
 Holt, Joseph, obit. and port., xix, 582.  
 Holtzendorff, F., sketch, xiv, 662.  
 Holtzke, Dr., experiments, x, 690.  
 Holub, Dr. E., explorations of, i, 332; ii, 333.  
 Holy Cross, Society of the, ii, 21.  
 Holyoke, Mass., xi, 170.  
 Holzgethan, L. von, sketch, i, 384.  
 Home, David D., obit., xi, 682.  
 Home Hygiene, v, 354.  
 Homes, Henry A., obit., xii, 590.  
 Homestead acts, in some States, i, 203; in Georgia, i, 337; iii, 370; in Arkansas, iv, 45; in Minnesota, iv, 627; in South Carolina, iv, 818; in Florida, vi, 297; vii, 314.  
 Homestead law, the, xiii, 469.  
 Homestead strike, xvii, 626.  
 Homieide, by necessity, ix, 522, 523; statistics, xvii, 761.  
 Houdt, Antoine de, x, 611.  
 Honduras, revolution in, i, 22; iii, 423; viii, 421; ix, 396; xix, 357; British, ix, 803; x, 478; xi, 423; xiii, 839; xiv, 413; xv, 407, 417; xvi, 346; xvii, 327; filibustering attempt in, 424; xii, 359; xiii, 415; xvi, 358; xvii, 336; xx, 347.  
 Hone, Mrs. E., obit., ii, 582.  
 Honey, James, murder of, x, 87.  
 Hong Kong, illustration, ii, 100; xv, 405; xvi, 344; xvii, 326; xviii, 391; civil war, xviii, 392.  
 Honolulu, Government house, xviii, 374.  
 Hood, E. Paxton, obit., x, 661.  
 Hood, J. B., sketch, iv, 473; x, 428.  
 Hooker, Joseph, sketch, iv, 475.  
 Hooper, Capt., voyage of, v, 301.  
 Hooper, Lucy H., obit., xviii, 556.  
 Hoosac Tunnel, the, xi, 529.  
 Hope, James, obit., xvii, 551.  
 Hope, James Barron, obit., xii, 591.  
 Hope, Beresford, x, 721.  
 Hopeful trials, the, x, 62.  
 Hopkins, G. H., observations by, viii, 526; ix, 514.  
 Hopkins, J. C., obit., ii, 582.  
 Hopkins, J. H., obit., xvi, 630.  
 Hopkins, Lucius, obit., i, 619.  
 Hopkins, Mark, sketch, xii, 360.  
 Hopkins, Robert, obit., xvi, 630.  
 Hopkins, S. T., obit., xvii, 551.  
 Hopkinson, invention, vi, 253; xii, 480.  
 Hops, in Washington, xii, 800.  
 Horbaczewski, experiments by, x, 157.  
 Hore, discoveries, v, 135, 297.  
 Horemhebi, colonnade of, x, 32.  
 Horhotup, tomb of, ix, 21.  
 Horn, Ephraim, obit., ii, 582.  
 Horne, Richard H., obit., ix, 616.  
 Hornellsville, N. Y., xiii, 608.  
 Horrea Galbæ, xi, 35.  
 Horsemanship, xv, 418.  
 Horse, paces of the, iii, 723.  
 Horse show, xv, 421.  
 Horses, racing, xii, 767; running, 770; trotting, 768; steeple-chasing, 771; breeding, in France, 771.  
 Horsford, A., obit., x, 662.  
 Horsley, C. E., obit., i, 619.  
 Horsman, E., sketch, i, 384.  
 Horst, Baron, iv, 60.  
 Hort, Sir J. W., obit., i, 635.  
 Horton, II. B., invention, x, 617.  
 Horton, N. A., obit., xvi, 630.  
 Horvovich, Gen., x, 731; xii, 735.  
 Hosford, E. N., obit., xviii, 556.  
 Hoskyns, C. W., obit., i, 635.  
 Hosmer, G. W., obit., vi, 684.  
 Hosmer, J., obit., xvi, 650.  
 Hosmer, W. H. C., obit., ii, 582.  
 Hospitals, for seamen, history of. See Service, United States Marine Hospital; New York Woman's, viii, 718.  
 Hotchkiss, B. B., obit., x, 650.  
 Hotchkiss, G. W., obit., iii, 639.  
 Hotchkiss, Jeddiah, ix, 538.  
 Hotchkiss, Julius, obit., iii, 640.  
 Hot drinks, influence of, xii, 676.  
 Hot Springs, x, 600.  
 Hot Springs, Arkansas, disputed title to, iii, 24; iv, 45; v, 25; reservation, view of main entrance, xix, 138.  
 Hotel at Brighton Beach moved, xiii, 302, 303.  
 Hough, G. W., observations by, vii, 36; viii, 22; x, 50.  
 Houghton, Baron, obit., x, 661.  
 Houghton, G. W. W., obit., xvi, 630.  
 Houghton, Henry O., obit. and port., xx, 576.  
 Houk, L. C., obit., xvi, 630.  
 Hounds, ix, 257, 258, 262.  
 House-boats, xiii, 416.  
 House-drainage, v, 364.  
 House of Commons, bar of the, with illustrations, vii, 202; discipline in. See Parliament.  
 House of Lords, the, ix, 375. See also Parliament.  
 House of Statuettes, the, ix, 20.  
 House of the Glass Zodiac, ix, 20.  
 House of the Papyri, the, ix, 20.  
 Houseman, J., obit., xvi, 630.  
 Houses, Portable, xi, 424; illustrations, 425, 426; American country-seats, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.  
 Houston, view at, i, 746; recent progress, xiv, 150.

- Houzeau, experiments by, viii, 115; sketch, xiii, 663.
- Hovas of Madagascar, the, vii, 492; ix, 458-460; x, 565.
- Hovenden, Thomas, obit. and port., xx, 576.
- Hovey, A. P., nominated, xiii, 442; obit., xvi, 630.
- Hovey, Charles M., obit., xii, 591.
- Hovgaard, expedition of, vi, 323.
- How, Mary K., obit., viii, 638.
- Howard, Cardinal Edward, obit., xvii, 595.
- Howard, Dr. B., his method of resuscitation, iii, 765.
- Howard, Gen., Indian campaign, ii, 40; iii, 673.
- Howard, R. B., sketch, xiv, 662.
- Howard, V. E., sketch, xiv, 635.
- Howard, W. C., invention by, vi, 287.
- Howarth, Rev. H., obit., i, 636.
- Howe, Earl, obit., i, 636.
- Howe, Samuel G., sketch, i, 383.
- Howe, J. W., obit., xv, 650.
- Howe, M. A. De W., obit., xx, 577.
- Howe, Timothy O., sketch, with portrait, vii, 810; viii, 432.
- Howe, W., obit., xv, 650.
- Howe, William Bell, obit., xix, 583.
- Howe, William C., obit., xi, 682.
- Howell, John C., obit., xvii, 551.
- Hoves, O., obit., xv, 650.
- Howgate, Capt. H. W., Arctic expedition, ii, 324; vii, 810.
- Howitt, Mary, sketch, xiii, 664.
- Howitt, William, obit., iv, 700.
- Howland, E. P., address, xiii, 44.
- Howland, R. S., obit., xii, 591.
- Howland, W. W., obit., xvii, 552.
- Howson, John S., obit., x, 662.
- Hoyt, Henry M., iii, 684; obit., xvii, 552.
- Hoyt, Jehiel K., obit., xx, 577.
- Huang Sic Chen, x, 105.
- Hubbard, Bela, x, 401.
- Hubbard, C. D., obit., xvi, 631.
- Hubbard, J. F., obit., i, 619.
- Hubbard, J. G. See Addington.
- Hubbard, R. D., obit., i, 210; ix, 607.
- Hubbell, A. S., obit., xvi, 631.
- Hubbell, Judge L., obit., i, 619.
- Huber, J., obit., iv, 700.
- Hubner, J. A., obit., xvii, 595.
- Hubner, O., obit., ii, 603.
- Huddleston, J. W., obit., xv, 681.
- Hudson Bay Company, xix, 457.
- Hudson Bay Route to Europe, ix, 466; x, 133; explorations, x, 133, 399.
- Hudson, Henry N., obit., xi, 683.
- Hudson, J., obit., x, 662.
- Hudson, M. C. See Clemmer, Mary.
- Hudson, N. Y., xii, 122.
- Hudson River, improvement of, xvi, 359.
- Hudson River Tunnel, v, 580.
- Hué, treaty, viii, 769; revolt at, x, 30.
- Hueffer, Francis, sketch, xiv, 662.
- Huelva pier, the, iii, 287.
- Huger, Benjamin, obit., ii, 582.
- Huggins, Dr. William, observations by, vii, 37; ix, 53; x, 47, 52, 54; xi, 49, 51, 52; prize to, viii, 28; port., xvi, 42.
- Hughes, Archbishop, x, 562-564.
- Hughes, D. E., observations by, xi, 534.
- Hughes, E. D., invention by, iv, 502. See Microphone, iii, 562.
- Hughes, J. S., nominated, xiii, 441.
- Hugo, Victor, i, 315; obit., with portrait and house, x, 479.
- Hugues, Clovis, ix, 345.
- Hugues-Morin affair, ix, 345.
- Hulke, Mr., operation by, x, 743.
- Hull Harbor improvements, viii, 310; x, 323.
- Hull, H. H., obit., i, 619.
- Hull, J. B., obit., xv, 651.
- Hull, Joseph H., obit., iii, 640.
- Hull, William H., obit., ii, 582.
- Hullah, John, obit., ix, 617.
- Hulsse, J. A., obit., i, 636.
- Human Freedom League, the, xvi, 360.
- Humbert, Ferdinand, picture by, xi, 343.
- Humbert, Gustave, obit., xix, 615.
- Humbert I, of Italy, accession of, iii, 456; attempt on the life of, iii, 453; assassin's sentence commuted, iv, 528; portrait on steel, ix, 412.
- Humboldt, Alex. von, x, 593, 607.
- Hume, Rev. Mr., xii, 148.
- Humes, T. W., obit., xvii, 552.
- Humphrey, Lyman U., nominated, xiii, 461.
- Humphreys, A. A., obit., viii, 433.
- Humphreys, E. R., obit., xviii, 556.
- Humphry, W. G., obit., xi, 717.
- Humpidge, G. T., x, 154.
- Hungary. See Austria-Hungary in every volume but viii; house of Magnates in, ix, 70; marriage laws in, ix, 69; national exhibition, x, 73; particularist movements in, xvii, 51; conflict with the Vatican, xx, 77.
- Hunias, the, iv, 400.
- Hunn, David L., sketch, xiii, 639.
- Hunt, A. C., obit., xix, 582.
- Hunt, Charles S., sketch, i, 389.
- Hunt, George W., obit., ii, 603.
- Hunt, H. J., obit., xiv, 635.
- Hunt, Holman, pictures by, x, 365; xii, 277.
- Hunt, Robert, obit., xii, 629.
- Hunt, Richard M., x, 361; sketch and port., xx, 348.
- Hunt, Samuel, obit., iii, 640.
- Hunt, T. Sterry, x, 577; xii, 101; obit. and port., xviii, 552.
- Hunt, Ward, obit., xi, 684.
- Hunt, William H., obit., ix, 607.
- Hunt, W. M., iv, 478.
- Hunter, C. F., obit., ix, 608.
- Hunter, David, obit., xi, 684.
- Hunter, D. E., observations by, iii, 37; iv, 52; v, 36; vii, 39, 40.
- Hunter, Dr., of Carlisle, ix, 637.
- Hunter, James B., sketch, xiv, 636.
- Hunter, Robert M. T., sketch and portrait, xii, 371.
- Hunter, William, obit., xi, 684.
- Hunter, W. B., obit., xix, 615.
- Huntington, O. W., experiments by, vi, 93.
- Huntington, W. H., obit., x, 650.
- Huntington, W. Va., xix, 139.
- Huntsville, Ala., xiv, 151.
- Hunza-Nagar, conquest, xvii, 349.
- Hurd, Nathaniel F., obit., xi, 684.
- Hurlburt, H. B., gift by, x, 366.
- Hurlbut, Stephen A., sketch, vii, 379; in Peru, vi, 738.
- Hurlbut, William H., obit., xx, 577.
- Hurling, xv, 421.
- Huron, proposed Territory, i, 220.
- Huron, wreck of the, ii, 537.
- Husband, William, obit., xii, 629.
- Hussein-Avni Pasha, sketch, i, 389; x, 315.
- Hussey, John, obit., xii, 591.
- Hasted, J. W., obit., xvii, 552.
- Huston, A. C., obit., i, 619.
- Hutchins, Waldo, obit., xvi, 631.
- Hutchings, Samuel, obit., xx, 577.
- Hutchinson, xiii, 165.
- Hutchinson, Samuel, obit., i, 619.
- Hutchison, J. C., obit., xii, 522.
- Hutton, Richard H., quoted, xiii, 7.
- Huxley, on medicine and biology, vi, 550.
- Huxley, T. H., quoted, xiii, 7; sketch and port., xx, 349; house in Marlborough Place, xx, 351.
- Huzara tribe, the, x, 7, 8.
- Hyacinthe, Father, iv, 706.
- Hyades, Dr., x, 41.
- Hyde Park, mass-meeting, x, 452.
- Hyderabad, xii, 382.
- Hydraulic canal lift, xiii, 300; railway, xiv, 249.
- Hydraulic mining, xvii, 73; in California, xviii, 119.
- Hydriodate of hyosine, x, 299.
- Hyatt, celluloid made by, iii, 459.
- Hyatt, James W., obit., xviii, 557.
- Hydrochlorate of cocaine, ix, 271.
- Hydrodynamic Analogies to Electricity and Magnetism, vi, 404.
- Hydrofluoric Acid, molecular weight of, vi, 92.
- Hydrogen, purification of, ii, 94; manufacture, v, 88; peroxide of, iii, 89; vii, 96; dioxide, viii, 117.
- Hydrographic Office, xiv, 813.
- Hydrography, i, 324; ii, 323; iii, 351; v, 288; of Behring Strait, vi, 325; surveys, vii, 331; of Atlantic, xiii, 58.
- Hydrophobia, ix, 398; x, 484.
- Hyett, William H., obit., ii, 603.
- Hygiene, Home, v, 354; and Demography, Congress on, xvi, 342.
- Ilykos, the, vii, 257; xii, 21; monuments, xiii, 28.
- Hylton, Baron, obit., i, 636.
- Hyperion, satellite of Saturn, ix, 50.
- Hypnone. See Acetophenone, xi, 289.
- Hyrcanus, fortifications of, ix, 28.
- Hyrthl, Josef, obit., xix, 615.
- Ibach, L. J., sketch, xiii, 639.
- Icaria, discoveries at, xiii, 26.
- Ice, Artificial, i, 517; xi, 427; seawater, xii, 104.
- Ice-boats, x, 794.
- Ice, Hot, vi, 405.
- Iceland, Parliament of, iv, 314; vi, 212; famine in, vii, 191; xi, 284; xii, 223; xiii, 268; xiv, 268; xvi, 248; xx, 229.
- Ichthyol, viii, 434; xi, 290.
- Idaho, in every volume after the seventh; polygamy, viii, 435; ix, 400; resources, viii, 435; growth, viii, 436; railroads, ix, 399; reclamation of desert land, ix, 399; x, 488; rivers and lakes, xi, 430; Indians and reservations, xi, 431; xii, 374; annexation question, xii, 374; xiii, 419; xiv, 414; and map, xv, 422; xvi, 361; xvii, 337; xviii, 393; rabbit bounties, xx, 353.
- Idlesleigh, Sir Stafford Henry



- Northcote, Earl of, obit., xii, 629.  
 See also Northcote, Sir Stafford.  
 Ide, Jacob, sketch, v, 371.  
 Identification and description, personal, xiii, 421.  
 Ideville, Henri, obit., xii, 630.  
 Iglesias, J. M., sketch, i, 391; claim and defeat of, ii, 512; viii, 65; ix, 649; resignation, x, 687.  
 Ignatieff, N. P., sketch, ii, 381.  
 Iguanodon, illustration, viii, 436.  
 Ikaba, King, portrait, ix, 167.  
 Ilbert Bill, the, in India, viii, 441.  
 Hes, Malvern W., xi, 537.  
 Ili. See Kulja.  
 Illinois, in every volume; views in, i, 392; ii, 383, 385; new Capitol, i, 391; Gov. Cullom, 395; Senator Davis, ii, 383; proposed constitutional amendment, iii, 427; Christ Church property, 431; election of senator, iv, 478; labor bureau, 486; history of debt, v, 371; trade of Chicago, v, 377; vi, 410; project for canal enlargement, 380; vi, 410; oleomargarine law, 408; act for cession of canal, vii, 380, 381; regulation of railroads, viii, 438; decision in Mackin case, x, 491; armed processions, 491; strike of quarrymen and mob, xi, 433; pleuro-pneumonia, xi, 434; xii, 377; Chicago elections, 377; anarchists, 377, 378; anarchists pardoned, xviii, 398; suits against State officers, 397; Lincoln homestead and monument, xx, 356.  
 Illumination in surgery, viii, 752.  
 Ilopango volcano, view of, xvi, 786.  
 Image, Ancient, xiv, 18.  
 Imbriani, Vittorio, obit., xi, 717.  
 Immigrants, cost of care of, to New York, v, 579; taxation of, vii, 463; ix, 428.  
 Immigration, Chinese, vii, 387; see also Chinese; diplomatic correspondence, i, 231; bill on, iv, 218; treaty on, v, 704.  
 Immigration Congress, xix, 312.  
 Immigration, to United States, ii, 386; vi, 412; xix, 756; rules on, vi, 414; of paupers and criminals, vi, 487; viii, 157; abuses, viii, 571; to Australia, ii, 51; v, 37; vi, 44; to Canada, v, 216, 219; xix, 98; to Central America, iii, 418, 748; to South America, i, 77; ii, 28, 74, 75; v, 22; viii, 68, 123; to Southern States, iii, 331; iv, 641; v, 308, 539, 584; vi, 299; to Western States, i, 84, 85, 231; ii, 80; iii, 74, 76, 766; iv, 657; v, 612; viii, 78, 268; bill, xvi, 225; pauper, xiii, 424; xiv, 603; Southern convention on, 8; xv, 620; Virginia convention, xix, 768.  
 Impeachment, report on, of Judge Archibald, ii, 297; trial in Texas, xviii, 715.  
 Imprisonment, damages for false, iv, 675.  
 Improvements, Internal, President Arthur on, viii, 161.  
 Im Thurn, E. F., exploration by, ix, 540; x, 400.  
 Inability or Disability of the President, vi, 414.  
 Inaugurations, precedence, x, 253.  
 Indebtedness of the United States, of the States, and of the world, vii, 392; charts, 402, 403; maps showing distribution, 392, 408.  
 Indemnity claims on Brazil, xx, 95.  
 Indemnity Funds, from China and Japan, vi, 778.  
 Independent Republican movement, ix, 773.  
 Independent Roman Catholic Church, xx, 357.  
 Index Catalogue, Dreyer's, xx, 61.  
 Indexes in book-covers, xvi, 708.  
 Induction-Balance, iv, 502.  
 India, in every volume; views, i, 401-405; ii, 390, 392, 393; journey of the Prince of Wales, i, 401; resignation of Lord Northbrook and appointment of Lord Lytton, 402; sketches of the viceroy, 406; the Queen's title, 403, 404; ii, 390; the Malay insurgents, i, 404; disorders in the Naga Hills, 404; freshet in the Punjab, 404; Mohammedan sympathy with the Turks, 404; disturbances in Baroda, ii, 394; and Madras, i, 404; epidemics, famine, and cyclone, 404, 405; Sunday-schools, 405, 406; changes of twenty years, ii, 390; reception of the chiefs, the Khan of Kelat, 391; decentralization scheme, 391; depreciation of silver, 391, 392; cost and extent of the famine, 392; sufferings from, iii, 436; epidemics, ii, 393; iv, 494; the Afridis, ii, 395; Calcutta University, 394; bill for regulating the native press, iii, 435; native armies, 436; scheme of public works, 436; troops for Malta, 436; Afghan war, 437; reported flight of Shen Ali, 438; trial of the Rajah of Pooree, 438; right to cede territory in, 438; occupation of Socotra, 438; new Order of the Indian Empire, 438; sequels to the Afghan war in the Punjab, iv, 491; Yakoob Khan under guard, 491; events in Kohistan, 491; movements in Afghanistan, 492, 493; measures of retrenchment, 493; protection of the ryots from extortion, 493; license law, 493; famine in Cashmere, 494; finances, 494; attempted murder of the viceroy, 494; outrages of the hill tribes, 494; hostilities of the Nagas, 495; v, 388; progress of Christianity, iv, 495; election excitement, v, 383, 384; resignation of Lord Lytton and appointment of the Marquis of Ripon, 384; declaration of policy and army reorganization, 384, 385; expense of the Afghan war, 386; native donations, 386; Baroda, Travancore, and Mysore, 386, 387; cinchonaculture, 387; representative government proposed, 387; overpopulation and poverty, 388; Rump insurrection, 389; attempt on the viceroy, 389; land-slide, 389; Brahmo-Somaj, 389; farming-system, vi, 420, 421; the country restive under British military despotism, 421; land reform in Bengal, 422; Mysore restored to native rule, 422; danger of outbreaks, 422; conspiracy in Kolapore, 422; Brahminical conspiracies, 423; protest against evacuation of Candahar, 423; border outbreaks, 423; new governor of Madras, 423; native disturbances, vii, 415; Russian activity in, 415; the King of Burmah's position, 416; local self-government, viii, 441; the Ilbert bill, 441; the Afghan frontier, ix, 406; settlement, x, 497; goats and famines, ix, 406; snakes, gold, petroleum, tea, 406; paper-manufacture, 407; irrigation, 407; Calcutta Exhibition, 407; Lord Ripon's administration, x, 494; Bengal tenancy act, 495; social reforms, 496; insurrection in Bhotan, 496; in Nepal, 427; restoration of Gwalior to Scindia, 497; survey of, 395; the silver question, xi, 437; religious riots, 438; mission to Thibet, 439; equalization of land-tax, 453; establishment of a Roman Catholic hierarchy, xii, 382; Indian women, 382; Hyderabad, 382; Chinese suzerainty over Indian states, 383; wheat supply, 380; national congress, xvii, 348; famine, 349; opium question, 349; Black Mountain tribes, 350; abolition of free silver, xviii, 401.  
 Indiana, State government, elections, statistics, etc., in each volume; views in, i, 407; ii, 395; the presidential difficulty, i, 411; Gov. Williams, 411; constitutional amendment, iv, 496; coal-mining, 501; building-stone, 501; mine inspector, 502; decision as to the 29th of February 502; importation of negroes, v, 394; election irregularities, 396; the liquor law, vi, 426; contracts by married women, 426; diseases of domestic animals, 427; special congressional election, viii, 444; State university, xi, 440; other State institutions, 440, 441; progress in utilizing natural gas, xii, 386; election frauds, 386; population, xv, 438; cities of, xvii, 351; industries, xviii, 405; decisions, 407.  
 Indianapolis, Capitol at, iii, 440; growth of, xii, 122; illustration, ii, 395; water, xix, 776.  
 Indian Messiah, xv, 440.  
 Indian reservations, xiii, 569; xiv, 775, 817; lands opened, xvi, 695, 801, 869; xviii, 694.  
 Indian revolt in Bolivia, xvii, 62.  
 Indians, American, missions to, i, 64, 76; iv, 190; in the Black Hills, i, 681; cession to Canada by Blackfeet, ii, 254; President Hayes on, ii, 669; iii, 710; wars and raids of, ii, 39; iii, 28, 29, 463, 673; iv, 46; v, 27, 28; vi, 35; viii, 17; numbers killed in engagements with, v, 26; plan to transfer care of, iii, 29; iv, 47; for a body of cavalry, iii, 29; for education of children, iii, 29; v, 28, 649; Western reservations, ii, 539; iv, 150; v, 29, 116, 118; vi, 117, 781; census of Penobscots, iv, 576; elections, vi, 524; decision in favor of Poncas, iv, 653;



- the Narragansetts, iv, 772; their tribal relations abolished, v, 654; in Florida, vi, 298; in Canada, v, 218; Baptist convention of, viii, 52; famine in Montana, viii, 548; statistics of, v, 28; new policy toward, v, 783; troubles in Chili with, viii, 64; education, viii, 781; not citizens, ix, 425; numbers and lands of, x, 762, 763; disturbances, x, 752; in Dakota, x, 286; xii, 219; relics of, ix, 14-16; character of the Apaches, xii, 30; education of, 386; attack upon, 143; in New Mexico, 545; Pueblo, 545; reports of agents, 777; xiii, 261, 420, 509, 606, 772; xv, 21; xvi, 28; xvii, 746; in Maine, xviii, 472; in Oregon, xviii, 593; in U. S., xviii, 739; the Cree, xx, 502; Maya, xx, 489; the Turtle Mountain, xx, 557.
- Indian states, Chinese suzerainty over, xii, 383.
- Indian Territory, territorial government in, iii, 28; occupation of, iv, 43; opening to settlers recommended, v, 417; attempts of ranchmen to appropriate lands in, x, 762.
- Indian trappers, of British Columbia, xviii, 110.
- India-rubber manufacture, v, 90; cultivation of, xii, 140.
- Indigo, artificial, vi, 428; vii, 95.
- Indigo-blue, iv, 135.
- Indigotin, determination of, x, 156.
- Indo-China, xiv, 344, xvi, 314; xvii, 294; xviii, 332.
- Industrial Army, in Utah, xix, 761.
- Industrial Conference, xv, 786.
- Industrial Education Association, xii, 235. See under Education.
- Industrial Legion, xvii, 356.
- Industrial Union, International, xii, 649.
- Industries, British and American, ii, 111; new appliances for the chemical, v, 88; statistics of United States, vii, 500; manufacturing, xiv, 313. See Finances and Financial Review.
- Infallibility, i, 703; ii, 676.
- Infanticide, in India, i, 400.
- Inflexible, the, vii, 246, 568.
- Influenza, epidemics of, xiv, 437.
- Ingalls, F. T., obit., xvii, 552.
- Ingalls, Rufus, obit., xviii, 557.
- Ingalls, J. J., charge against, v, 419.
- Ingersoll, Elihu P., obit., xii, 592.
- Ingleby, C. M., obit., xi, 718.
- Inglefield, Sir E., obit., xix, 615.
- Inglis, David, obit., ii, 582.
- Inglis, J. A., obit., iii, 640.
- Inglis, John, obit., xvi, 674.
- Ingraham, D. N., obit., xvi, 631.
- Inini river, xiv, 361.
- Inkerman, monument at, i, 710.
- Inlaid work, ix, 244.
- Inlaying, xi, 443.
- Inness, George, exhibition of works of, x, 361; xi, 346; sketch and port., xix, 374.
- Insane Criminals, i, 597.
- Insanity as a Defense for Crime, evidence and opinions in various trials, vi, 429; vi, 381.
- Insanity, plant-producing, viii, 538.
- Inscriptions, ancient, vii, 256, ix, 18; xii, 17, 25; x, 37; xi, 24, 34.
- Insects, earliest fossil, ix, 637.
- Insectivorous Plants, iii, 444.
- Insley, Henry E., obit., xix, 582.
- Insolvency, amendment to Connecticut law, v, 195.
- Insurance, Commissioners of, in Connecticut, ii, 225; Delaware act on, iv, 307; Mississippi laws, iv, 636; Missouri laws, iv, 642; assessment companies, vi, 727; general statistics for United States, vii, 424; "graveyard" companies, vii, 835; decision, xiii, 607; of workmen, xiii, 371.
- Insurance Legislation, in New York, xi, 444; in Connecticut, 445; in New York, xii, 552.
- Insurrections. See Wars, etc.
- Internal Revenue and Tariff in Congress, viii, 193; xv, 228.
- International American Conference, xiv, 440.
- International Arbitration, viii, 469.
- International Congress, xiii, 87; xiv, 432.
- International Exhibition, xv, 593.
- International Law, obligation of, vii, 618; source of authority of, 618; views of various writers, 618-622; beginning of the science, 622; Institute of, xiii, 759; xvii, 722; xix, 292; xx, 339.
- International Monetary Conference. See Bimetallic Standard.
- Interoceanic Canal, iv, 503; map showing routes tributary to, iv, 506. See also Panama Canal.
- Inter-Parliamentary Conference, xvii, 723.
- Interstate Commerce Act, x, 206; xi, 264; xii, 173, 390; commercial law, xiv, 224.
- Inuits of Alaska, the, v, 301.
- Innndation in Honan, xiii, 157.
- Inventions, xi, 738; xii, 650. See Patents.
- Investments, English, in U. S., xiv, 443.
- Invincibles, the, ix, 377.
- Iodine, from sea-weed, i, 97; commercially produced, v, 89.
- Iodoform, ix, 747.
- Iodol, xi, 290.
- Iowa, in each volume; Gov. Kirkwood, 412; making women eligible to school offices, 413; decision of the court, 415; industrial exhibition, 415; storms, 415; vii, 433; Keokuk Canal, ii, 398; Gov. Gear, 400; socialists, 401; bill to restore capital punishment passed, iii, 446; on defendants as witnesses, 446; immigration, 446; jury trials, 446; constitutional amendment, 447; tax-exemption for tree-planting, iv, 513; tramps, 516; proposed prohibition amendment, v, 396; viii, 445; x, 490; xii, 393; board of health and immigrant commission, 396; prison reform, vi, 437; driven wells, viii, 446; new Capitol, ix, 412; decision in distillery case, xii, 393; population, xv, 445; judicial decisions, xviii, 409; monument at Spirit Lake, xx, 368; mullet law, xx, 368.
- Iowa City, xiv, 130.
- Irazu, volcano, ascent of, x, 398.
- Ireland, Alexander, obit., xix, 615.
- Ireland, and the Irish Question, v, 399; home-rule, i, 360; obstruction, ii, 366; iii, 407; murder of the Earl of Leitrim, 407; Fenian prisoners released, 407; agitation, iv, 457; in Parliament, v, 330, 333, 338, 343; vi, 358, 359, 363; help from United States, vi, 358; land-league trials, 367; Archbishops McCabe and Croke, 367; manifesto of Parnell and others, 369; obstruction, vii, 204; coercion bills, vii, 204; cases of Dillon and others, 205; debates on, vii, 364; cloture, 364; crimes bill, vii, 366; assassination of Cavendish and Burke, vii, 366; viii, 415; arrears bill, vii, 367; "Irish World," the, vii, 368; land-scheme, vii, 368; Ladies' Land League, *ibid.*; arrest of High-Sheriff of Dublin, vii, 369; Hartington imprisoned, viii, 413; memorial from bishops, 417; brief of Leo XIII, 693; Maamtrasna murder-trials, ix, 376; attack on the Irish executive, 376; Archbishop Walsh, x, 455; land-commission, xii, 336; the round table, 336; the plan of campaign, 336-338; O'Brien sentenced, 339; crimes act, 340; political crimes in, viii, 414; condition of, viii, 416; dynamiters convicted, 416; brief of Leo XIII on, viii, 693; xviii, 358. See Great Britain.
- Ireland, directory of the friends of, ix, 626.
- Irenæus letters, the, x, 704.
- Iridescent stoneware, xii, 504.
- Irish Land Bill, vi, 363; purchase, x, 453.
- Irish Land Commission, xii, 336.
- Irish members of Parliament, obstruction by, ii, 365.
- Irish National Alliance, xx, 370.
- Irish National party, viii, 412.
- Iron, new process, i, 522; direct, vii, 528; protection of surfaces, ii, 93; iv, 134; commerce in, iv, 173; vi, 533; dephosphorization of, v, 208; vii, 530; viii, 520; absorption of nitrogen, vi, 99; statistics, 1882, vii, 115; silviced, x, 578; viscosity of, xii, 479; new method for removing rust from, 486; casting upon lace, 486; Regia process, ix, 471; xii, 479; malleable, 480; xviii, 479; in Canada, xviii, 266; in Michigan, xviii, 494; in Minnesota, xviii, 496; in Alabama, xx, 9. For alloys, processes, etc., see under Metallurgy in the several volumes.
- Iron and Steel, ii, 401; microscopical analysis, vii, 532; tax on, viii, 213; industry in 1886, xi, 446; xiv, 538; xv, 525; xvi, 506; xvii, 439.
- Iron Hall, the, xvii, 353.
- Iron Manufacturers' Convention, vii, 455. See Metallurgy.
- Ironton, Ohio, xviii, 161.
- Iroquois, studies of the. See Morgan, L. H., and Smith, E. A.
- Irredenta, the, xiv, 469.
- Irrigation, xix, 359; xx, 720; congress, xix, 149; in Western States and Territories, iii, 72, 111; iv, 151; vii, 78; ix, 104; x, 633; xi, 576, 609; xii, 532; xix, 505, 557;



- in Australia, xii, 311; xiii, 38, 291, 601; xiv, 451; xv, 90; xvi, 28, 363; decision concerning, xiv, 102; xvii, 772; in Arizona, xviii, 20; xx, 29; in Idaho, xviii, 395; in New Mexico, 518; xix, 525; xx, 539; in South Dakota, xix, 721; in Texas, xix, 741.
- Irvine, Col., x, 125, 127.
- Irving, A., xii, 103.
- Irving, J. B., obit., ii, 582.
- Irving, L. T. II., obit., xvii, 553.
- Irving, Pierre M., obit., i, 619.
- Irving, Roland D., x, 404; sketch, xiii, 639.
- Irving, Theodore, obit., v, 593.
- Irwin, William, obit., xi, 635.
- Isaacs, Samuel M., obit., iii, 640.
- Isabella, ex-queen of Spain, her return, i, 731.
- Isabella Marie, Princess, of Portugal, obit., i, 636.
- Isabey, Eugène, obit., xi, 718.
- Ischia, earthquake in, viii, 285, 454.
- Ishak Khan, in Afghanistan, xiii, 6.
- Isidor, Archbishop, obit., xvii, 595.
- Islam, the future of, vi, 440; sects of, *ibid.*
- Islands, Pacific, claims on, viii, 31; explorations in, xi, 381, 382.
- Ismail Pasha, i, 2; sketch, ii, 405; iii, 263; abdication, iv, 332; vii, 232; financial operations of, vii, 234; ix, 296; xi, 311; obit., xx, 611.
- Ismaïlia, on the Suez Canal, illustration, ii, 270.
- Isomerism, ix, 809.
- Istomin, C. I., obit., i, 636.
- Israel, lost tribes of. See Afghanistan, ii, 4.
- Italia Irredenta, or Irredentist party, v, 408, 409; vi, 50; vii, 54, 437; crime of Overdank, vii, 438; viii, 452.
- Italian annexations, xiv, 2.
- Italians, conspiracy against, xv, 2; massacred, xvi, 833.
- Italians in Africa, xi, 1, 455; xii, 2.
- Italy, statistics, government, legislative proceedings, etc., in every volume; map of Rome, ii, 408; views in, i, 418, 419, 421, 422; ii, 409-411; resignation of the Minghetti and formation of the Depretis ministry, i, 417; the new cabinet and its programme, 418; purchase of railroads, 418, 419; establishment of freo ports, 419; election victory of the progressive party, 420; the king's address on the opening of Parliament, i, 420; committee on abolition of the death-penalty, 421; its abolition, ii, 410; attitude on the Eastern question, i, 420, 421; Garibaldi, 421; measures toward the church; 422; foreigners exempt from taxation, 422; church congress at Bologna, 422; conviction and sentence of the forger of the king's name, Montegazza, 422; capture of Sajera, the Sicilian brigand, 422; capture of Foster Rose by brigands, 423; death of the Duke de Galliera, 423; penalties on priests attacking the government, ii, 408; the Eastern question, 409; clerical abuse bill rejected, 410; change of policy in France, 410; change of ministry, 411; discovery of coins, 411; anniversary celebrations, 411; death of Victor Emmanuel and accession of Humbert, iii, 456; the king's speech, 456; proposed reforms, 456; Cairoli ministry, 456; railways, 457; attempt to assassinate the king, 458; speech of Minghetti on the closing of Barsanti clubs, 458; agitation on the action of the Berlin congress, 458; demonstration at the residence of the Austrian consul in Venice, 458; question of repeal of the grist-tax, iv, 524, 525; civil marriage act, 526; foreign relations, state railroads, 526; measures against Republicans, 526; expressions of Garibaldi, 527; excitement over Baron Haymerle's pamphlet, "Italcæ Res," 527; eruption of Mount Etna, 527; "Italia Irredenta," or Irredentist agitation, v, 408, 410; viii, 452; dissolution of parliament and ministry sustained in elections, v, 409; Tunis question, 409; vi, 449; resignation of Garibaldi, 410; decline of the merchant navy, 410; Mentana monument unveiled, 410; foreign policy, conditions of, vi, 447, 448; electoral reform, taxation, 449; Marseilles riot, 450; anti-clerical ferment, and disturbances at the burial of Pius IX, 450; the papal guarantees, 451; royal meeting at Vienna, 451; the newspaper press, its growth, 451; earthquake at Casamicciola, 451; extradition of a bandit, 452; the people and the church, vii, 434; confiscated church property, 434; relations with other powers, 437; African schemes, 438; commercial treaties, 438; death of Garibaldi, 438; anniversary of Sicilian vespers, 438; the Austrian envoy attacked, 438; inundations, 438; resumption of specie payments, viii, 451; cabinet crisis, 453; reclamation of the Campagna, 454; interpretation of the guarantee law, 454; the Ischia earthquake, 454; geodetic conference, 454; the Red Sea Expedition, ix, 413; x, 504; the German steamers, ix, 414; silk-manufacture, 415; cholera, 415; cyclone, 416; Turin exhibition, 416; commercial failures, 416; occupation of Massowah, in Africa, x, 505; xii, 397; the madonna of Corano, 506; sanitary conference, 506; equalization of land-tax, xi, 453; parliamentary conflict, 453; dissolution, 454; conflict between church and state, 455; quarrel with Colombia, 455; colonics, 455; xii, 396; Massowah disaster causes a ministerial crisis, 397; the Crispi ministry, 398; the Pope claims the sovereignty of Rome, 399; commercial treaty with Austria and new triple alliance, 399; difficulty with the United States, xvii, 362; bank scandals, xviii, 418.
- Itasea Lake Park, xix, 489.
- Itata, the, xvi, 133.
- Ithaca, N. Y., xiii, 608; xv, 130.
- Itzel, Adam, Jr., obit., xviii, 557.
- Iuka, battle of, x, 424.
- Ivens, R., explorations by, iv, 405; v, 293; x, 394.
- Ives, J. C., x, 401.
- Iverson, Henry, obit., ix, 608.
- Ivory, Artificial, iii, 458; monopoly of, in Soudan, x, 316.
- Ivory-nuts, xi, 305; xiii, 287.
- Iwakura, T., obit., viii, 600.
- Iwasaki Yataro, obit., x, 662.
- Izard, J. A. S., obit., iv, 693.
- Iztacihuatl, ascent of, xiii, 550.
- Jablochkoff, inventions by, i, 520; ii, 497; iii, 273, 307; obit., xix, 615.
- Jack, Alexander B., obit., xi, 685.
- Jack, R. L., x, 576.
- Jackson, Mich., xv, 131.
- Jackson, Miss., capture of, x, 425.
- Jackson, A. R., obit., xvii, 553.
- Jackson, Bishop, x, 20.
- Jackson, C. T., sketch, v, 410; x, 402.
- Jackson, Helen, obit., x, 650.
- Jackson, Howell E., obit., xx, 577.
- Jackson, I. W., obit., ii, 582.
- Jackson, R. H., obit., xvii, 553.
- Jackson, Tenn., xviii, 161.
- Jackson, Thomas, obit., xi, 718.
- Jackson, Thomas P., obit., i, 619.
- Jackson, Timothy I., obit., vi, 684.
- Jackson Monument Funds, i, 802; xviii, 464.
- Jacksonville, Fla., xiii, 165.
- Jacksonville, Ill., xv, 131.
- Jacob, B., v, 714.
- Jacobini, Cardinal L., obit., xii, 630.
- Jacobs, J. A. M., obit., v, 600.
- Jacoby, J., obit., ii, 603.
- Jacque, C. E., obit., xix, 616.
- Jacquel, P., invention by, vi, 250.
- Jacques, D. H., obit., ii, 582.
- Jade, xviii, 646.
- Jaguary, i, 78.
- Jahn, Dr., x, 138.
- Jalapa, Mexico, view of, iii, 554.
- Jamaica, viii, 820; ix, 801; xiii, 839; xiv, 403; xvi, 863; xvii, 792; political excitement in, 802; sugar-trade of, 802; x, 781; xii, 801; xx, 761.
- Jamba, the god, x, 396.
- James City dispute, xviii, 534.
- Janes, Daniel, obit., i, 619.
- Janes, Sir H., obit., ii, 604.
- James, Henry, sketch, vii, 438.
- James, Mr., xii, 310.
- Jameson, J. A., obit., xv, 651.
- Jameson, Major, xiii, 296.
- Jameson oven, the, x, 580.
- Jameson, Senar E., obit., xi, 685.
- Jamestown, N. Y., xv, 132.
- James-Watt dock, the, x, 332.
- Jamieson, Prof., ix, 477.
- Jamin, Jules Celestin, inventions by, vi, 258; obit., xi, 718.
- Jaminet, observations, vi, 753.
- Jamshidi tribe, the, x, 7, 8.
- James, Bishop E. S., sketch, i, 423.
- Janet, Henri A., x, 363.
- Janin, theory of, vi, 240.
- Janja, Peru, battle of, x, 687.
- Jan Mayen, Austrian Expedition to, vii, 335.
- Jannay, experiments by, viii, 111.
- Janney, A. M., obit., ii, 582.
- Jannsen, M., ix, 54; xi, 54.

- Janson, Paul, ix, 78.  
 Janssen, J., obit., xvi, 675.  
 Japan, in each volume; views, i, 425, 427, 429; ii, 413, 414; ix, 418, 419 exchange of Saghalien for the Kurile Islands, i, 423; embassy to Spain and Portugal, 425; settlement with and embassy to Corea, 425, 426; insurrection incited by nobles, 428; the Mikado's journey in northern provinces, 428; Buddhist temple in Mondschi restored, 428; Sunday made a holiday, 428; commercial disturbance, 429; Protestant missions, 429, 430; the Russian church, 430; reactionary insurrection, ii, 413, 414; government success, 414; national exhibition, 414; effects of the revolution, iii, 461; political assassination, 462; singular disturbance in Yokohama, 462; discontent of the Samurai, 462; exhibits at Paris, 463; native editions of the Bible, 463; silk culture and exportation, iv, 529; viii, 457; annexation of Loochoo Islands, iv, 529, 530; defiance of quarantine regulations, by the British minister, 530; education, v, 412; vii, 441; x, 508; xi, 459; industrial enterprises, v, 413; settlements in Fusan, Corea, Gensan, 413; discussion of Korean treaty, 413; social and political changes, vi, 453; the Daimios and Samurais, 453; Shintoism, 453; Tokio University, 453; telegraphy system, 454; marbles, 456; volcanoes and earthquakes, vii, 440; geology, climate, flora, 441; Fukusawa, 441; dissatisfaction with English commercial treaty, 441, 442; case of O'Neil, 442; treaty with Corea, viii, 455; Prussian administration, 456; merchant marine, 456; cabinet woods, 456; stagnation in trade, ix, 417; riots, 417; dissolution of Liberal party, 417; fighting in Corea, 418; perfect religious toleration, 419; death of the last Tycoon, 419; improvements in the condition of the people, x, 507, 508; art industries, 509; treaty with China, 510; three thousand laborers go to Hawaii, 510; money-order convention with United States, 511; purchase of iron-clads, 511; reception of United States minister, 511; cholera, 511; xi, 458; extradition treaty with United States, xi, 456; fashion and industries, 457; representative government, 457; literature and religion, 459; the navy and commercial marine, 458; xii, 402; feast of new rice, xi, 459; foreign trade, xi, 457; morals, education, and religion, xvi, 393; salt-making in, xviii, 417; organized charity, 417.  
 Japanese, social and political changes of, vi, 452; tools used by, ix, 418, 419; bath, illustration, i, 425; bronzes, illustration, 427.  
 Jar, found at L'Argar, xii, 23.  
 Jardine, David, obit., xvii, 553.  
 Jardine, Edward, obit., xviii, 557.  
 Jarves, James J., sketch, xiii, 640.  
 Jarvis, T. J., sketch, iv, 690; v, 586.  
 Jasper, invention by, vi, 258.  
 Jaumont, Gen., x, 31.  
 Jauner-Kuffler, frauds, x, 72.  
 Jaureguiberry, Admiral, iv, 386; obit., xii, 630.  
 Jaures, Constant, sketch, xiv, 663.  
 Java, eruption in, viii, 286; insurrection in, xi, 608; xiii, 589.  
 Jay, John, obit. and port., xix, 582.  
 Jay, John C., obit., xvi, 631.  
 Jeannette, the, voyage of, iv, 417; v, 288; vi, 322; vii, 331; map showing the route, 332.  
 Jeannette Island, vii, 331.  
 Jebu, xvii, 328.  
 Jeddo tunnel, xx, 251.  
 Jeffcoats, skate, ix, 735.  
 Jeffers, W. N., obit., viii, 590.  
 Jefferson City, xv, 132.  
 Jeffreys, John G., obit., x, 662.  
 Jeffries, Dr. John, obit., i, 619.  
 Jeffries, Richard, obit., xii, 630.  
 Jejeebhoy, Jamsetjee, obit., ii, 604.  
 Jelenek, Prof., xi, 49.  
 Jeliaboff, trial of, vi, 796, 797.  
 Jelinek, Karl, obit., i, 636.  
 Jellett, John H., sketch, xiii, 664.  
 Jemshidis, the, x, 4.  
 Jenekes, Thomas A., ix, 690.  
 Jenkin, Fleeming, invention, viii, 679; ix, 729; obit., x, 662.  
 Jenkins, George, invention, ii, 497.  
 Jenkins, Thornton A., obit. and port., xviii, 557.  
 Jenkins, Timothy, obit., i, 619.  
 Jenks, F. H., sketch, xiii, 640.  
 Jennings, L. J., obit., xviii, 581.  
 Jennings, Russell, sketch, xiii, 640.  
 Jenson, explorations by, iii, 358; ix, 348.  
 Jequirity, ix, 271.  
 Jerome, David H., v, 523.  
 Jerome, L. R., obit., xiii, 640.  
 Jerome, L. W., obit., xvi, 632.  
 Jerrold, W. B., obit., ix, 617.  
 Jersey City, N. J., xi, 171; water, xix, 776.  
 Jerusalem, Aqueduct at, xi, 26; walls of, xiii, 31.  
 Jervis, Sir W. F. D., ix, 60.  
 Jessel, Sir George, obit., 600.  
 Jessen, investigations, viii, 636.  
 Jesuits in Peru, xi, 750; cause of their expulsion from Germany, x, 712; incorporation of, in Quebec, xii, 708; estates settlement, xiii, 710; xiv, 725, 723.  
 Jeter, J. B., sketch, v, 413.  
 Jetty System, the, v, 533.  
 Jevons, W. S., sketch, vii, 442.  
 Jewell, James S., obit., xii, 592.  
 Jewell, Marshall, sketch, i, 204; viii, 457.  
 Jewett, Col. Ezekell, obit., ii, 582.  
 Jew-fish, xii, 756.  
 Jewitt, Llewellyn, obit., 718.  
 Jews, i, 430; iv, 530; xii, 403; xiii, 455; xiv, 475; xv, 464; xvi, 393; xvii, 367; xviii, 418; xix, 390; xx, 377; restrictions on, in Servia, ii, 691; in Roumania, iii, 740; vii, 729; ix, 703; x, 714; persecution in Morocco, v, 546, 644; anti-Semite movement in Prussia, v, 640; agitation against, in Hungary, vi, 403; viii, 48; numbers of, and persecutions in Germany and Russia, vi, 456; vii, 735; ix, 711; in Austria, viii, 47; relief measures, vii, 35; increase of, in Austria, vii, 51; ritual murder case, viii, 47; outrages against, viii, 709; disabilities, ix, 703; x, 511; convention of reformed, x, 511; relief for persecuted, 606; colonies of, in United States, xi, 459; Rabbinical Seminary at Rome, 460; immigration to Spain, 460; literature, educational institutions of, xii, 403, 404; exhibition in London, 404; edict against, xvi, 783; colony, xviii, 16.  
 Jiddah, outrage at, xx, 726.  
 Joachim III, Patriarch of Constantinople, ix, 278.  
 Joachimsen, Priscilla J., obit., xviii, 558.  
 Joachimsen, P. J., obit., xv, 651.  
 Jobbins, E. H., ix, 477, 478.  
 Johann, Archduke, obit., xv, 681.  
 Johannis, Negus of Abyssinia, sketch, xiv, 663.  
 Johannsen, E., island discovered by, iii, 354.  
 John, Franz, sketch, i, 434.  
 John, King of Abyssinia, i, 2, 3; ii, 2; iv, 2; v, 236; ix, 276; xi, 1; xii, 1.  
 John Gilpin, the, catamaran, illustration, ix, 117.  
 Johnite, x, 343.  
 Johns, John, obit., i, 619.  
 Johns Hopkins University, administration of, vii, 508.  
 Johnson, A. L., obit., xv, 651.  
 Johnson, Abram, sketch, vi, 461.  
 Johnson, A. S., obit., iii, 640.  
 Johnson, Alice, observations by, viii, 437.  
 Johnson, Alvin J., obit., ix, 608.  
 Johnson, Andrew, Southern policy of, x, 431, 432.  
 Johnson, B., obit., v, 593.  
 Johnson, Barton W., obit., xix, 583.  
 Johnson, Bradish, obit., xvii, 553.  
 Johnson, E. A., obit., xvi, 632.  
 Johnson, Sir F. G., obit., xix, 616.  
 Johnson, H. V., sketch, v, 414.  
 Johnson, J. C., nominated, xiii, 764.  
 Johnson, Oliver, sketch, xiv, 636.  
 Johnson, Reverdy, sketch, i, 434.  
 Johnson, Rowland, obit., xi, 685.  
 Johnson, S. W., investigations by, v, 92; ix, 122.  
 Johnson, W., obit., xv, 651.  
 Johnston, A., sketch, xiv, 636.  
 Johnston, A. Keith, African journey of, iii, 362; iv, 402; obit., iv, 700.  
 Johnston, Albert Sidney, x, 424.  
 Johnston, Amos R., obit., iv, 693.  
 Johnston, Archibald, obit., xii, 592.  
 Johnston, H. H., ix, 347, 544.  
 Johnston, J. T., obit., xviii, 558.  
 Johnston, Joseph E., x, 426, 427, 431; sketch and port., xvi, 395.  
 Johnston, J. W., sketch, xiv, 636.  
 Johnston flood, xiv, 476.  
 Johnstown, N. Y., xx, 545.  
 Jonhonnot, James, sketch, xiii, 640.  
 Joint Rules of Senate and House, i, 153-158.  
 Joint-stock companies, new Connecticut law on, v, 195; law in Germanv, ix, 358.  
 Joliet, xv, 132.



- Jolly, P., experiments by, vii, 35; obit., x, 663.
- Jonas, Carl, x, 72.
- Jones, Charles C. obit., xviii, 558.
- Jones, E. Lloyd, observations by, v, 36; xii, 673.
- Jones, Evan, nominated, xiii, 766.
- Jones, Francis C., prize to, x, 367.
- Jones, George, obit., xvi, 632.
- Jones, John B., sketch, vi, 461.
- Jones, John Glancy, obit., iii, 640.
- Jones, Joseph, discoveries by, iii, 320.
- Jones, Joseph S., obit., ii, 582.
- Jones, Justin, sketch, xiv, 636.
- Jones, Owen, obit., iii, 640.
- Jones, Rogers, sketch, xiv, 636.
- Jones, Samuel, obit., xvii, 553.
- Jones, Thomas R., obit., v, 600.
- Jones, W. A., x, 402.
- Jones, W. M., nominated, xiii, 609.
- Jones, William R., ix, 472.
- Jonker Afrikander, x, 138.
- Joplin, Miss., xvi, 157.
- Jordan, Rowland, ix, 474.
- Jordan, Thomas, obit., xx, 577.
- Jordan, T. J., obit., xx, 577.
- Jordan valley, proposal to flood, viii, 307.
- Joseph, Chief, ii, 40.
- Josephine, ex-Queen of Sweden, obit., i, 636.
- Josh Billings. See Shaw, H. W.
- Josstown, Africa, x, 121, 122.
- Joubert, Piet, President of the Boer republic, ix, 114.
- Joule, James P., sketch, xiv, 663.
- Journalism, improvements in, xi, 633.
- Journalists, expulsion of foreign, from France, xviii, 321.
- Journey of Death, the, x, 633.
- Jovanovich, Gen., vii, 57, 58; obit., x, 662, 730.
- Jovellary, Soler, obit., xvii, 595.
- Jowett, Benjamin, obit., xviii, 581.
- Joy, Charles A., obit., xvi, 632.
- Joy, E. L., obit., xvii, 553.
- Joyce case, the, ix, 377.
- Jubilee Exhibition, Berlin, xi, 345.
- Juborn, Mount, ix, 544.
- Judd, D. W., sketch, xiii, 641.
- Judd, J. W., x, 47; xi, 45.
- Judd, Orange, obit., xvii, 554.
- Judd, Orin B., obit., xvii, 554.
- Judges, investiture, tenure, and removal of; salaries of, xvi, 214. See Criminal Jurisdiction, vii, 179.
- Judicature, reform of, French, viii, 370.
- Judiciary celebration, xv, 630.
- Judson, Ed. Z. C., obit., xi, 685.
- Juengling, F., sketch, xiv, 637.
- Juggernaut, temple of, illustration, ii, 392.
- Jühlke, Dr., x, 796; xi, 370.
- Julian Year, the, vii, 372.
- Julien, Alexis A., ix, 45.
- Julio, E. D. B., sketch, iv, 532.
- Junel trial, the, ix, 627.
- Jumpers, the, ix, 554.
- Junction City, Kan., xiv, 151.
- Juneau, S., statue, xii, 280.
- Jung, M. E., observations by, viii, 526.
- Jung, Sir Salar, in England, i, 366; obit., viii, 600; xii, 382.
- Jungfleisch, experiments by, viii, 118; x, 157.
- Junior Carlton Club-House, explosion at, ix, 377.
- Junker, Dr., explosions by, ii, 330; iii, 362; x, 394; xi, 371; xii, 251.
- Junker, W., obit., xvii, 595.
- Jupiter, xiii, 54; xv, 40; satellites of, ii, 44; xviii, 42; xx, 54; physical condition of, xviii, 42; spots on, iv, 51; v, 34; vi, 38; viii, 22; x, 50; period and light, v, 34; its resemblance to the sun, ix, 50; red spot upon, x, 50; fifth satellite of, xvii, 38, and xix, 50.
- Jupiter Olympius, temple, xii, 21.
- Jurgan, Jeanno, obit., iv, 774.
- Juries, grand, iii, 447; Indiana law, vi, 425; negroes in, see Negroes.
- Jurisdiction, disputed, of Greer County, Texas, xii, 760.
- Jurisprudence, recent works on. See Literature, in every volume.
- Juste, Theodore, sketch, xiii, 664.
- Justice boxes, in Persia, i, 660.
- Jute, vi, 462; cultivation of, iii, 682; v, 64; vii, 485; ix, 787; machine for, vii, 485; illustration, vi, 462.
- Jute and Jute-Butts, viii, 458.
- Juvenile reformatories, xvii, 761.
- Kabru, Mount, ix, 544.
- Kabyles, insurrection of, iv, 15; campaign against, xiv, 574.
- Kaehyens, operations against, xiv, 431.
- Kadesh, ix, 28.
- Kadesh-Barnea, ix, 27.
- Kaffir revolt, see Caffre.
- Kahnweiler, invention by, vi, 266.
- Kailas, Mount, iv, 400.
- Kaine, J. S., obit., xix, 583.
- Kairene, ix, 271.
- Kaiserfeld, M., vii, 49.
- Kakar Tribes, the, ix, 7.
- Kalakaua, reign of, xii, 351; death of, xv, 415; obit., xvi, 675.
- Kalamazoo, xv, 133.
- Kalisch, Isidor, obit., xi, 685.
- Kalish, Marcus M., obit., x, 663.
- Kalloch, I. S., impeachment of, v, 77; obit., xii, 592.
- Kalnoky, Count, sketch, vi, 463; x, 111.
- Kanakas, labor of the, x, 62, 63; xvii, 45.
- Kangaroo, the great, illustration, ii, 52.
- Kanawha River, improvement of, iii, 827.
- Kane, Sir R., obit., xv, 681.
- Kanitz, F., ix, 23.
- Kankakee, Ill., xviii, 162.
- Kankakee river, xix, 371.
- Kankakee Survey, the, vii, 421.
- Kansas, in each volume; view, i, 416; Osage land, i, 437; lead discovered, ii, 416; election of Senator Plumb, 416; libel case decision, 417; invasion of Cheyennes, iii, 463; suit of bondholders, 466; iv, 537; patrol guard on the Indian frontier, v, 416, 417; removal of colored people from Mississippi to, 417; droughts, cattle disease, and chinch-bugs, v, 417; vi, 463, 467; x, 514; Oklahoma raid, v, 417; telegraph war, 417, 418; drive-well dispute, 418; validity of registry-law, 418; title to seat in legislature, iii, 466; re-election of Senator Ingalls, iv, 532; v, 419; bribery charges, 532; question of obligation of telegraph companies to produce messages in court, 533, 534; prohibition amendment ratified, v, 420; coal-production, vi, 468; sketch of G. W. Glick, vii, 447; Senator Plumb re-elected, viii, 460; sorghum sugar industry, ix, 422; growth and development, x, 514; population, xv, 467; xvi, 401; mortgage debts, xvi, 403; prohibition in, xviii, 423; natural gas, xx, 380.
- Kansas City, Kan., xvii, 112.
- Kansas City, Mo., xi, 171; water, xix, 776.
- Kaolin, discovery of, viii, 641, 642.
- Kaposi, Prof., ix, 272.
- Kappes, Alfred, ix, 346; xii, 278; obit., xix, 583.
- Karategrin, state of, x, 2.
- Karavaleff ministry, the, in Bulgaria, ix, 102; x, 102, 111.
- Karennee expedition, xiv, 431.
- Kargé, Joseph, obit., xvii, 554.
- Karnak, musical rocks at, x, 608.
- Karond, massacres in, vii, 415.
- Karr, A., obit., xv, 681.
- Karraek, island of, x, 1.
- Kars, surrender of, ii, 743.
- Kartseff, Gen. A. P., i, 323.
- Kashgaria, war of, with China, i, 109, 776; ii, 417; iii, 96; iv, 145. See also Turkistan.
- Kassai, Prince. See John, King of Abyssinia.
- Kassai River, the, x, 392.
- Kassala, ix, 296; xv, 459; siege of, x, 315; taking of, xix, i; view of, xix, 2.
- Kassatkine, N., v, 348.
- Kasyapa, the Buddha, x, 89.
- Katanga, xvii, 169; expeditions, xviii, 189.
- Katkov, Michel Nikiphorovich, obit., xii, 630.
- Kauffmann, C., obit., vii, 646.
- Kauffmann, Ulrich, ix, 543, 545.
- Kaulbars, Gen., xi, 106, 110.
- Kautz, A. V., obit. and port., xx, 578.
- Kava-kava, xi, 291.
- Kavanagh, Julia, obit., ii, 604.
- Kavvadias, Prof., observations by, ii, 32.
- Kay, Sidney de, obit., xv, 651.
- Kaye, Sir John W., sketch, i, 438.
- Kayser, Dr., experiments by, x, 583; xi, 389.
- Kearney, Dennis, trial of, v, 77.
- Kearney, Neb., xviii, 163.
- Keating W. V., obit., xix, 583.
- Keatinge, Richard, obit., i, 636.
- Kedes (Kadesh), ix, 28.
- Kedzie, experiments by, vi, 352.
- Keegan, W., obit., xv, 651.
- Keely, George W., obit., iii, 640.
- Keeley, John Worrall, xii, 407.
- Keeley motor, the, xii, 407; illustrations, 408, 409.
- Keene, xv, 133.
- Keene, C. S., obit., xvi, 675.
- Keet, H., use of title, i, 25.
- Keewatin, xviii, 473; xix, 457; xx, 439.
- Keifer, experiments by, viii, 121.
- Keil, Ernst, obit., iii, 656.
- Keil, Prof. M., ix, 475.

- Kelley, A. M., appointment of, to Italy and Austria, x, 70.  
 Keim, Theodor, obit., iii, 656.  
 Kekulé, theory of, vi, 92.  
 Keller, Father, xii, 339.  
 Keller, Ferdinand, obit., vi, 694.  
 Keller, George, xi, 347.  
 Kelley, B. F., obit., xvi, 632.  
 Kelley, Henry B., obit., xix, 583.  
 Kelley, W. D., obit., xv, 652.  
 Kelline, xi, 291.  
 Kellogg, Albert, obit., xii, 593.  
 Kellogg, Ensign H., obit., vii, 639.  
 Kellogg, Stephen W., i, 204.  
 Kellogg, William P., impeachment, i, 482; protest, v, 479.  
 Kelly, Eugene, obit., x, 583.  
 Kelly, John, obit., xi, 686.  
 Kelly, William, sketch, xiii, 641.  
 Kelso, James J., sketch, xiii, 641.  
 Kelso, Thomas, obit., iii, 640.  
 Kelton, J. C., obit., xviii, 558.  
 Kelung, capture of, ix, 139-143.  
 Kemble, Frances A., obit. and port., xviii, 581.  
 Kemble, W. H., v, 621.  
 Kemen, Mary J., obit., xii, 593.  
 Kemp, invention by, vi, 265.  
 Kemper, I. de B., obit., i, 636.  
 Kemper, J. L., obit., xx, 578.  
 Kendall, Henry, obit., xvii, 554.  
 Kendrick, A. C., obit. and port., xx, 578.  
 Kendrick, H. L., obit., xvi, 632.  
 Kendrick, J. R., obit., xiv, 637.  
 Kenia, Mount, ix, 347.  
 Kenly, John R., obit., xvi, 633.  
 Kenna, John E., obit., xviii, 558.  
 Kennaway, Sir John, xiii, 13.  
 Kennedy, Anthony, obit., xvii, 554.  
 Kennedy, B. H., sketch, xiv, 664.  
 Kennedy, Hugh, sketch, xiii, 641.  
 Kennedy, James, obit., xi, 719.  
 Kennedy, J. C. G., obit., xii, 593.  
 Kennedy, R. W., invention by, xi, 537.  
 Kennedy, W. H., obit., xix, 584.  
 Kennon, John W., obit., xi, 686.  
 Kenosha, Wisconsin, xix, 139.  
 Kent, Edward, obit., ii, 583.  
 Kentucky, in each volume; views in, i, 439, 440; ii, 420, 421; viii, 463; Louisville registration act vetoed, i, 438; resources, geological surveys, ii, 420; iii, 470; navigation of the Kentucky River, ii, 421; strike and riots, 421; iii, 473; election of senator, ii, 422; six per cent. rate of interest adopted, iii, 468; bill for re-establishment of the whipping-post, 469; monument to J. C. Breckinridge, 470; act on concealed weapons, 470; crop of chufas, 472; extradition case in court, 473, 475; the State prison, iv, 539; contract system, vi, 470; Buford trial, iv, 541; agricultural college founded, v, 422; exclusion of negro jurors, 424; negro voters, vii, 451; prosecution of lottery advertisers, v, 425; regulators, 425; lynching attempt, vii, 453; southern exposition, viii, 464; coal-mining, x, 516; school, xi, 467; tobacco and liquors, 467; atrocities in Rowan County, xii, 410, 411; population, xv, 472; xvi, 404; constitutional convention, xv, 474; xvi, 405; the new constitution, xvii, 373; local option, xviii, 424.  
 Keogh, W., obit., iii, 656.  
 Keokuk, xv, 133.  
 Kep, or Lang Kep, battle at, x, 24, 25; attacked by Chinese, 27.  
 Kephir, fermented milk, ix, 121.  
 Keppler, Joseph, obit., xix, 584.  
 Keren, xi, 1; xii, 1.  
 Keridec, Count de, obit., iii, 656.  
 Kerkapoly, K., obit., xvii, 596.  
 Kerki, Russian occupation, xii, 7.  
 Kermadec islands, annexation of, by Great Britain, xi, 60.  
 Kernan, Francis, obit., xvii, 554.  
 Kerner, Dr., death of, xii, 217.  
 Kerosene, improved test for dangerous, viii, 464; illustrations, 464, 465.  
 Kerr, Col. James K., obit., i, 619.  
 Kerr, Dr., experiments by, vi, 239.  
 Kerr, John B., obit., iii, 640.  
 Kerr, Michael C., sketch, i, 441.  
 Kershaw, J. B., obit., xix, 584.  
 Kesem, x, 36.  
 Keteltas, Eugene, obit., i, 619.  
 Ketteler, W. E., obit., ii, 604.  
 Key, Sir A. C., sketch, xiii, 664.  
 Key, David M., sketch, ii, 422.  
 Keyes, E. D., obit., xx, 579.  
 Key West, illustration, i, 300.  
 Keyhole, luminous, xvi, 706.  
 Keyser, Ephraim, xi, 347.  
 Keyt, Dr. A. T., ix, 656.  
 Kbafrā, pyramid of, ix, 21.  
 Khalifah-ben-Said, obit., xv, 681.  
 Kbame, Chief, x, 88.  
 Khan of Khelat, deposed, xviii, 404.  
 Khartoum, x, 309, 318; fall of, ix, 299-304; x, 319; xi, 310; views of, viii, 299; ix, 289.  
 Khedive, private debt of the, i, 245; decree on commission of inquiry, iii, 264.  
 Khemmis necropolis, the, ix, 22.  
 Kheta, the, or Hittites, ix, 28.  
 Kliiva, Russian protectorate, x, 2.  
 Khoja-Saleb, x, 4.  
 Khokan, annexed to Russia, i, 44 775, 776; discoveries, ii, 325.  
 Khorassan, people of, in favor of annexation to Russia, x, 10.  
 Khotan River, exploration of the, xii, 309.  
 Khuenaten, palace of, xvii, 13.  
 Kidd, J., invention by, iii, 88.  
 Kidder, D. P., obit., xvi, 633.  
 Kiddle, H., obit., xvi, 633.  
 Kiel, naval station at, ii, 279.  
 Kiel, Friedrich, obit., x, 663.  
 Kierulf, impeachment of, ix, 751.  
 Kiessling, K. I., observations by, x, 581, 582; xi, 54.  
 Kiev, disturbance at the University of, ix, 711.  
 Kilauca, Mount, eruption, ix, 389.  
 Kilimandjaro, Mount, ix, 347, 544; x, 796; station on, xviii, 337.  
 Kilpatrick, Gen. See Peru, Chili, etc., vi, 738.  
 Ki-Lua, battle at, x, 26.  
 Kimball, C. P., obit., xvi, 633.  
 Kimball, Eugene, obit., vii, 639.  
 Kimball, H. I., obit., xx, 579.  
 Kimball, Moses, obit., xx, 579.  
 Kimball, R. B., obit. and port., xvii, 555.  
 Kimberley, Earl of, sketch, v, 426.  
 Kimberley, South Africa, x, 135.  
 Kina-balu Lake, xii, 312.  
 Kindergartens, xii, 232; free, and workingman's school, New York, 234.  
 Kindler, Albert, sketch, i, 441.  
 King, Alice, obit., xix, 616.  
 King, Clarence, explorations by, v, 297; x, 402, 403.  
 King, E. A., inventions by, iii, 275; iv, 339.  
 King, Francis T., obit., xvi, 633.  
 King, John H., sketch, xiii, 642.  
 King, John P., sketch, xiii, 642.  
 King, Louisa W., obit., iii, 641.  
 King, R. H., obit., xv, 652.  
 King, Richard, i, 323; obit., 636.  
 King, Rufus, obit., i, 619.  
 King Karl Land, x, 398.  
 King of Prussia, power of, manifestations, vii, 354.  
 King William's Land, x, 59.  
 Kingdom, J. M., obit., i, 620.  
 Kinglake, A. W., obit., xvi, 675.  
 Kingsbury, Benj., obit., xi, 687.  
 King's Daughters, xiii, 464.  
 Kingsland, A. C., obit., iii, 641.  
 Kingsley, Henry, sketch, i, 441.  
 Kingsley, W. C., viii, 311; obit., x, 650.  
 King's Sons, the, xiii, 464.  
 Kingston, Canada, view of, i, 234; xv, 134.  
 Kingston, N. Y., xii, 123.  
 Kinipple, W. R., x, 332.  
 Kinloch, Eliza, obit., xii, 593.  
 Kinloch, R. A., obit., xvi, 633.  
 Kinney, Elizabeth C., obit., xiv, 637.  
 Kinney, explorations by, iv, 400.  
 Kinney, W. B., obit., v, 593.  
 Kinny, Mary C., obit., ii, 583.  
 Kinsella, T., obit., ix, 608.  
 Kip, W. I., obit., xviii, 558.  
 Kirby, Timothy, obit., i, 620.  
 Kirchhoff, Gustav Robert, spectroscopic observations, vi, 242; sketch and portrait, xii, 412.  
 Kirkbride, T. S., obit., viii, 590.  
 Kirkham, R. W., obit., xviii, 559.  
 Kirkland, Joseph, obit., xix, 584.  
 Kirkland, scheme of, ix, 632.  
 Kirkwood, Daniel, obit., xx, 579.  
 Kirkwood, S. J., sketch, i, 412; obit., xix, 584.  
 Kirsner, L., obit., i, 636.  
 Kirwan, D. J., obit., i, 620.  
 Kissam, Agnes A., obit., xiii, 642.  
 Kitchen refuse, disposal of, xx, 639.  
 Kitchen, W. K., obit., i, 620.  
 Kitchener, Lieut., survey of Palestine, ii, 325; x, 319, 320; xiii, 293.  
 Kitson, H., xi, 346.  
 Kjeldahl, x, 156.  
 Klappa, Georg, obit., xvii, 596.  
 Klebs, experiments, iv, 414.  
 Klein, Dr., investigations, iv, 442.  
 Klein, Julius L., sketch, i, 441.  
 Klein, Tobias, xii, 326.  
 Kleiner, Dr., invention by, iii, 482.  
 Kleist-Retzow, obit., xvii, 596.  
 Klenze, H. von, obit., xvii, 596.  
 Klinkerfuss, W., obit., ix, 617.  
 Klossofsky, M., xi, 545.  
 Klutshak, H. W., obit., xv, 652.  
 Knapp, M. M., obit., xvii, 555.  
 Knaus, Ludwig, x, 367; xi, 347.  
 Knebel, Baron, obit., xv, 681.  
 Kneeland, J. C., obit., xx, 579.  
 Knickerbocker, D. B., obit., xix, 585.  
 Knight, C. F., obit., xvi, 634.  
 Knight, E. C., obit., xvii, 555.



- Knights of Industry, xvii, 374.  
 Knights of Labor, x, 516; xii, 524.  
 Knights of Pythias, x, 518.  
 Knit cloths, viii, 466; illustrations, 466, 467.  
 Knoodt, F. P., sketch, xiv, 664.  
 Knorr, Admiral, x, 122.  
 Knorr, Ludwig, x, 298.  
 Knorre, discoveries, i, 46; v, 34.  
 Knowles, Kaye, collection of, xii, 278.  
 Knox, J. J., obit., xvii, 555.  
 Knox, John J., obit., i, 620.  
 Knox, Samuel R., obit., viii, 591.  
 Knoxville, Tenn., xii, 123.  
 Knudsen, C. W., obit., xix, 585.  
 Knutsen, K., x, 398; xi, 373.  
 Koch, C. J., obit., xix, 585.  
 Koch, Dr. Robert, experiments by, iii, 388; iv, 442; vii, 799; ix, 93, 143, 495, 497, 663; x, 800; sketch and port., xv, 474.  
 Koch, H. A., obit., i, 636.  
 Köchly, Hermann, sketch, i, 442.  
 Kohat Pass, opened, ii, 5.  
 Kohl, Friedrich, obit., i, 636.  
 Kohl, Johann G., obit., iii, 656.  
 Kohn, invention by, iii, 275.  
 Kokomo, Ind., xvi, 157.  
 Kola-nut, caffeine in the, viii, 118.  
 Kolbe, A. W. H., ix, 424.  
 Kollmann, experiments by, x, 691.  
 Komaroff, Gen., x, 5, 6, 8, 9.  
 Kompert, Leopold, obit., xi, 719.  
 König, F., experiments by, vi, 670.  
 König, G. A., discovery by, vi, 98.  
 König, Herbert, obit., i, 637.  
 Königgratz, battle of, x, 382.  
 Königsmark-Plaue, obit., i, 637.  
 Konn, invention by, ix, 339.  
 Kononoff, M., xii, 103.  
 Köppen, Prof., xii, 489.  
 Koppnagel, C., obit., xvi, 634.  
 Korb-Weidenheim, Baron, iv, 60.  
 Korea. See *Corea*.  
 Kossel, experiments by, viii, 119; xii, 671.  
 Kossuth, Louis, sketch and port., xix, 490.  
 Kostenko, Col., explorations in Khokan, ii, 325.  
 Kostomarov, N. L., obit., x, 663.  
 Kovalensky, D. E., i, 323.  
 Krabbe, N. C., obit., i, 637.  
 Kraieffski, A., sketch, xiv, 664.  
 Krakatoa, eruption of, viii, 526; connection with the red light, 526; ix, 53; x, 48, 401, 582.  
 Krapotchkin, assassination, iv, 683.  
 Krapotkine, Prince, imprisonment of, vii, 326; trial, viii, 368.  
 Krasczewski, Joseph Ignatius, trial of, for high treason, ix, 358; obit., xii, 632.  
 Kraton, capture of, x, 625.  
 Kratschner, experiments, vi, 75.  
 Krauel, Dr., x, 420.  
 Krause, G. A., explorations by, viii, 386; xii, 305.  
 Krehbiel, Helen O., obit., xix, 585.  
 Krekel, Arnold, sketch, xiii, 64.  
 Kreling, August, sketch, i, 442.  
 Kremlin, the, illustration, ii, 687.  
 Kremser, Dr., x, 582.  
 Kremser, Moravia, meeting of two emperors at, x, 69; reason for absence of the third, x, 70.  
 Krestowsky, M., obit., xx, 612.  
 Kriegk, G. L., obit., iii, 656.  
 Kries, experiments, vi, 748.  
 Krikor, Odian E., obit., xii, 632.  
 Kronecker, H., ix, 654.  
 Krüdener, Baron, sketch, ii, 422; obit., xvi, 675.  
 Krueger, Dr., ix, 52.  
 Krueger, S. J. P., ix, 113.  
 Krug, Anna C., obit., ii, 604.  
 Krüger, K. W., obit., i, 637.  
 Krupp, Alfred, obit., xii, 632.  
 Krüss, G., xii, 101, 111.  
 Kruzof Island, volcano on, xi, 381.  
 Krzyzanowski, W., obit., xii, 594.  
 Kuang-Tri, massacre at, x, 31.  
 Kubuchu, Prof., ix, 45.  
 Kuechler, ix, 358.  
 Kuenen, A., obit., xvi, 675.  
 Kufeit, battle at, x, 319.  
 Kuh, Emil, obit., i, 637.  
 Kühne, observations, viii, 635.  
 Kühner, R., obit., iii, 657.  
 Kukenam, Mount, ix, 539.  
 Ku-klux, law, vii, 457; cases, viii, 474.  
 Kula, engagement at, x, 728.  
 Kuligan, Fort, taken, x, 117.  
 Kulja, restoration of, to China, iv, 144; v, 101; vi, 107, 800; revolt in, x, 173.  
 Kumunduros, i, 367, 368.  
 Kuntz, Dr., xii, 674.  
 Kuo-Tung-tao, recalled, iv, 145.  
 Kurds, insurrection of, v, 623; vi, 731; rescue of Obeidullah by, vii, 805.  
 Kurile Islands, exchanged for Saghalien, i, 427.  
 Kuro-Siwo, the. See *Gulf Stream, Pacific*.  
 Kurupatkin, Capt., explorations of, ii, 326.  
 Kusaie Island, ruins in, x, 139, 140.  
 Kushan, destroyed by earthquake, picture of, xviii, 614.  
 Kutschker, Cardinal, obit., vi, 695.  
 Kwangsi, revolt in, iii, 101; iv, 143.  
 Kwangsu, Emperor, ix, 136. See *under China*.  
 Labastida, P. A., obit., xvi, 676.  
 Labels, x, 683.  
 Labiche, E. M., sketch, xiii, 664.  
 Labor, Chinese. See *Chinese*.  
 Labor, Church, xviii, 426.  
 Labor Day, xiii, 509.  
 Laborers' Lien Act, iv, 845.  
 Labor Legislation, in France, viii, 369; in Germany, vii, 354, 356; in England, 411; in the United States, xi, 260; xii, 85, 444; in Belgium, xii, 66; limit of working-day, ix, 59, 68.  
 Labor, movements and agitations of, iii, 73; v, 77; vii, 453; x, 72; xi, 83, 173, 260, 359, 389, 405; xv, 54, 396, 786; foreign contract, x, 231; for the unemployed, x, 147; black, in the Southern Pacific, x, 62; wages of, in Japan, 507; Convention, xiv, 791; xvi, 89; of Colorado, xviii, 178; disturbances, xvi, 389; Exchange, the, xviii, 324; interests in Missouri, xviii, 499; riot in Illinois, xviii, 398; in Louisiana, xix, 443.  
 Labor Statistics, Missouri, Bureau of, iv, 641; New York, viii, 570; Michigan, vii, 540; national, ix, 192; xiii, 509.  
 Labor Strikes, i, 649; ii, 421, 423, 530, 636, 750; iii, 407; iv, 714, 717; v, 119; vi, 516; vii, 506, 614; x, 672; xi, 432, 455; xii, 66, 376, 742 *et seq.* See also *Labor*, vii, 453.  
 Labor troubles, xiii, 747; xiv, 419, 471; xvii, 514; xix, 380; in Spain, xvi, 805; in Austria-Hungary, xviii, 65; in Alabama, xix, 4; in Colorado, xix, 147; in New York, xviii, 522; in Oregon, xviii, 598; in Pennsylvania, 610; in Tennessee, 710.  
 Labor, United States Department of, established, xiii, 234.  
 Laboring-men, idle, in San Francisco, iii, 69.  
 Labor-traffic in the Pacific, x, 62.  
 Laboulaye, E. R. L., obit., viii, 600.  
 Labrador, xiii, 464; map of, 465; Grand Falls of, xvi, 570.  
 Labre, Alexander, obit., xvii, 556.  
 Labuan, xiv, 399; xv, 404; xvi, 343; xvii, 326.  
 Labye, L., invention by, vi, 258.  
 Lacc, iron-casting upon, xii, 486.  
 Lachat, Eugène, obit., xi, 719.  
 Lachner, F., obit., xv, 682.  
 Lacoste, M., obit., x, 663.  
 Lacouperie, J. de, obit., xix, 616.  
 La Cour, telephone, i, 740.  
 Laeressonnière, obit., xviii, 582.  
 Lacrosse, x, 518; illustrations, 519.  
 La Crosse, Wis., xvi, 158.  
 Lacroix, P., obit., ix, 617.  
 Lactate of quinine, x, 299.  
 Lactic acid, xii, 678.  
 Ladd, William S., obit., xviii, 559.  
 Ladoue, T. C. F. de, obit., ii, 604.  
 Ladreyt, Cassimer, obit., ii, 588.  
 Ladrone Islands, xii, 313.  
 Laessoe, F., observations, x, 38.  
 La Farge, John, ix, 242, 243.  
 La Fayette, Ind., xvi, 158.  
 Lafayette, Oscar de, obit., vi, 695.  
 La Flesche, Frank, ix, 45.  
 Laffin, Luther, obit., i, 620.  
 Lager, M., x, 5.  
 La Hitte, Vicomte, obit., iii, 657.  
 La Horie, Gen., x, 480.  
 Lahrbush, Capt. F., obit., ii, 583.  
 Laing, Maj., murder of, vi, 328.  
 Laidley, T. T. S., obit., xi, 687.  
 Lighton, Albert, obit., xii, 594.  
 Laird, James, sketch, xiv, 638.  
 Lajoux, H., x, 156.  
 Lake Chad, the race for, xviii, 331.  
 Lake Crater, xi, 381.  
 Lake dwellings near Maracaibo, xx, 745.  
 Lake Suai, outlet, xii, 304.  
 Lake villages, xx, 21.  
 Lalla Rookh, Queen of Tasmania, i, 53.  
 Lalo, Edouard, obit., xvii, 596.  
 Lama, the, x, 396.  
 Lamar, L. Q. C., sketch, x, 757; portrait, 764; obit. and port., xviii, 559.  
 Lamarmora, Marchese di, obit., iii, 657.  
 Lamater, De, John, obit., ii, 583.  
 Lamb, Martha J., obit., xviii, 559.  
 Lamberton, R. A., obit., xviii, 559.  
 Lambert, Sir J., obit., xvii, 596.  
 Lambeth Conference, xiii, 16.  
 Lambkin, J. R., sketch, xiv, 638.  
 Lambros, M., x, 37.  
 Lamington, Baron, obit., xv, 682.  
 Lamont, Daniel S., sketch and port., xviii, 735.

- Lamont, George D., obit., i, 620.  
 Lamont, Ward H., obit., xviii, 559.  
 La Motte, C. E., obit., xii, 594.  
 Lamperti, F., obit., xvii, 596.  
 Lamport, W. H., obit., xvi, 634.  
 Lamps, electric, ix, 304, 305. See also Electric Lighting.  
 Lamson, W. S., invention, xii, 94.  
 Lamu question, the, xiv, 832.  
 Lamy, John B., sketch, xiii, 642.  
 Lancaster, Pa., growth of, xi, 171.  
 Lanciani, Rodolfo, xi, 35.  
 Land Bill, in California, v, 71.  
 Landerer, F. X., obit., x, 663.  
 Land Grant Forfeitures, x, 244; xi, 263; xv, 236.  
 Land Grant Railroads, xii, 202.  
 Land-Grants, in Oregon, v, 612; old, in New Mexico, viii, 565; to railroads, ix, 214; xii, 202; revoked, ix, 214; xii, 777. See Land Grant Railroads.  
 Land, Harvey B., sketch, xiii, 642.  
 Landholt, xii, 103.  
 Landing stage, a novel, xiv, 292.  
 Land Laws, in Denmark, vi, 211; in India, vi, 422; viii, 441; in New South Wales, viii, 35; in Roumania, viii, 698; in Russia, viii, 706; in Great Britain, x, 521; in Ireland, 525; in Scotland, 527; in Australia, ix, 58, 59; in Bengal, x, 8, 495, 527; in Bosnia, ix, 64, 65; in United States, x, 528; xi, 577. See Land Tenure.  
 Land League, arrest of leaders, vi, 367, 368; clergy on, vi, 367; viii, 413; Ladies', vii, 368.  
 Landlord and Tenant, English law of, x, 526.  
 Land-owner ministry, the, in Denmark, x, 290.  
 Land-purchase act, xiii, 398.  
 Land Reform, in Great Britain, x, 456-458.  
 Landsborough, W., obit., xi, 719.  
 Landseer, C., obit., iv, 700.  
 Landseer, Sir Edwin, xi, 345.  
 Landseer, Thomas, obit., v, 600.  
 Lands, laws on mineral, vi, 76; public, i, 84; iv, 830; v, 25, 271; vi, 300, 597; xiii, 466; xvii, 746; in Mexico, x, 590; alleged title frauds in West Virginia, vii, 835; unlawful occupancy of public, x, 241; allotment of, to Indians, xii, 205; measures to restrict the ownership of, in the territories, to American citizens, xii, 206.  
 Land system, Torrens, x, 674.  
 Land-tax, equalization of the, in Italy, xi, 453.  
 Land Tenure in Europe, vi, 472.  
 Land titles in Arizona, xix, 29.  
 Land-transfer, system of, x, 674.  
 Landwehr, the, in Austria, ix, 63.  
 Lane, Charles, xiii, 11.  
 Lane, Edward W., sketch, i, 442.  
 Lane, Henry S., obit., vi, 684.  
 Lane, James C., sketch, xiii, 642.  
 Lane, Joseph, sketch, vi, 475.  
 Lane-Fox Electric Lamp, vii, 275.  
 Lanfrey, P., obit., ii, 604.  
 Lang, Heinrich, obit., i, 637.  
 Lang, Louis, obit., xviii, 560.  
 Langdon, C. C., sketch, xiv, 638.  
 Langdon, W. C., obit., xx, 579.  
 Langenbeck, B., obit., xii, 632.  
 Langer, Karl, obit., xii, 632.  
 Laniewicz, Marian, obit., xii, 632.  
 Lang Kep, battle at, x, 24, 25.  
 Langley, J. N., experiments by, vi, 749, 750.  
 Langley, J. W., x, 149; xi, 44.  
 Langley, S. P., observations by, iii, 35; vii, 33; viii, 526; ix, 48, 539; xi, 49, 55, 57; xii, 31, 45; address, xiii, 44.  
 Langlois, M., ix, 344.  
 Langson, battle at, x, 25, 26.  
 Langstroth, L. L., obit., xx, 580.  
 Language question, the, xiii, 86.  
 Language-war in Austria-Hungary, xii, 52.  
 Lanier, Sidney, obit., vi, 685.  
 Lanigan, George T., obit., xi, 687.  
 Lanman, Charles, obit. and port., xx, 580.  
 Lanoline, xi, 291; xii, 105, 670.  
 Lansdowne, Marquis of, viii, 83; sketch, with portrait, viii, 468; xii, 338.  
 Lansing, Mich., capitol at, illustration, i, 552; xvii, 112.  
 Lantaine, xi, 291.  
 Lanza, Gen., xiii, 3.  
 Lanza, Signor, obit., vii, 646.  
 La Perouse, ix, 275.  
 Lapham, Elbridge G., sketch, vi, 648; obit., xv, 652.  
 Lapham, W. B., obit., xix, 585.  
 Lapps, the, proposal to remove, to Greenland, ix, 348.  
 Larabit, M. D., obit., i, 637.  
 Laramie City, xiv, 152; Penitentiary, xix, 792.  
 Larcom, Lucy, obit. and port., xviii, 560.  
 L'Argar, discoveries at, xii, 23.  
 Largeau, explorations, i, 332.  
 Larivière, P. C., sketch, i, 442.  
 Larkin, observations, vii, 34.  
 La Rochette, E. de, obit., i, 637.  
 Larremore, R. L., obit., xviii, 560.  
 Larsen, experiments, viii, 118.  
 L'Artigue's single railway, illustration, xi, 320.  
 Larynx, intubation of, ix, 748; x, 743.  
 Lasagni, Cardinal, death of, x, 713.  
 La Salle, Illinois, xix, 139.  
 Lasgird, ix, 5; illustration, 5.  
 Lasker, Eduard, retirement of, viii, 395; sketch, viii, 468; incident in Congress, ix, 225, 359.  
 Lassalle, Charles, sketch, xiii, 642.  
 Lassen, Christian, sketch, i, 442.  
 Lasteyrie, Marquis, obit., viii, 601.  
 Las Vegas, xv, 134.  
 Latch, gravity, ill., xii, 653.  
 Latham, R. G., sketch, xiii, 664.  
 Latitude, variation of, xvii, 39.  
 Latrobe, B. H., obit., iii, 641.  
 Latrobe, J. H. B., obit., xvi, 634.  
 Latour, Isidore, obit., ii, 604.  
 Latto, Thomas C., obit., xix, 585.  
 Laube, H., obit., ix, 617.  
 Lauderdale, Earl of, obit., iii, 657.  
 Launay, Count, obit., xvii, 596.  
 Launches, electric, xviii, 282.  
 Laurens, J. P., x, 359; xi, 343.  
 Laurent, Francis, obit., xii, 633.  
 Laurentie, P. S., sketch, i, 443.  
 Laurie, A. P., xii, 110.  
 Lauth, F. J., obit., xx, 612.  
 Lauzanne, de Vaux-Roussel, Chevalier de, obit., ii, 604.  
 Laval, University of, difficulty concerning, viii, 695.  
 Laveleye, E. L., obit., xvi, 676.  
 Laveau, Marie, obit., vi, 685.  
 Lavigerie, C. A., obit., xvii, 596.  
 Laviesium, new metal, ii, 502.  
 Law and Order League, xii, 418.  
 Law, Constitutional, International Arbitration, viii, 469; Weil and La Abra cases, *ibid.*; Legal-Tender Acts, 471; power of Congress in elections, 474; recent progress, vi, 475; vii, 457; ix, 425; constitutional, xi, 467.  
 Law, recent books on. See Literature, in every volume.  
 Lawes, explorations of, i, 330.  
 Lawrence, Albert Gallatin, obit., xii, 594.  
 Lawrence, Effingham, obit., iii, 641.  
 Lawrence, Eugene, obit., xix, 585.  
 Lawrence, George A., obit., i, 637.  
 Lawrence, J. L. M., Baron, sketch, iv, 543.  
 Lawrence, Kansas, xi, 172.  
 Lawrence, Mass., xi, 172.  
 Lawrence, W. B., sketch, vi, 483.  
 Laws against Foreigners in Russia, xii, 724.  
 Laws, Charles A., obit., xii, 595.  
 Laws of War, and Red Cross Societies, vii, 715.  
 Laws, State, codification of New York, iii, 615; revision of Vermont, v, 708; compilation of Michigan, vi, 575.  
 Lawson, D. T., experiments of, vi, 259; theory of boiler explosions, vii, 296.  
 Lawson, James A., obit., xii, 633.  
 Lawson, Sir Wilfrid, ix, 372.  
 Lawsuits against United States, vii, 460.  
 Lay, Henry C., obit., x, 650.  
 Lay, Mr., invention by, ii, 719.  
 Lay, O. I., obit., xv, 652.  
 Layard, Sir A. II., x, 140, 143; obit. and port., xix, 616.  
 Laycock, Thomas, obit., i, 637.  
 Laymen's League, xi, 21.  
 Layton, Caleb R., obit., xii, 595.  
 Lazarus, Emma, obit., xii, 414.  
 Lazarus, J. H., obit., xvi, 634.  
 Lazeano, Admiral F., x, 138.  
 Lea, Albert, obit., xvi, 635.  
 Lea, Carey, x, 153; xii, 105.  
 Lea, Isaac, obit., xi, 687.  
 Leach, Stephen W., obit., xx, 580.  
 Lead and silver process, viii, 531.  
 Lead-poisoning, iv, 4; viii, 116; x, 161.  
 Lead, use of, in prehistoric times, ix, 23; market, 481; xviii, 484. See also under Metallurgy.  
 Leadville, growth of, iv, 161; mines, vi, 118; xv, 135.  
 League of the emperors, xi, 391.  
 League of Patriots, xiv, 335.  
 Leake, Martin, ix, 25.  
 Leaming, J. R., obit., xvii, 556.  
 Leander McCormick Observatory, vii, 41.  
 Learned, A. F., obit., xvi, 635.  
 Lease, Mrs., and Governor of Kansas, xix, 392.  
 Leather-board, iv, 662.  
 Leavenworth, xi, 172.  
 Leavenworth, Eliza Warner, obit., xii, 595.  
 Lebanon, Pa., xviii, 163.  
 Lebel, N., obit., xvi, 676.  
 Leblanc, Louis, obit., xi, 719.  
 Leblond, Désiré Médéric, obit., xi, 720.



- Lebœuf, Edmond, sketch and portrait, xiii, 472.  
 Lebombo, annexation of, xx, 111.  
 Le Bon, experiments, viii, 116.  
 Lebranc's process for carbonate of soda, xii, 108.  
 Lebreton, E. C., obit., i, 637.  
 Le Caron, Henri, obit., xix, 616.  
 Lecense, J. N. A., obit., iii, 657.  
 Lechesne, xii, 483.  
 Leclercq, Charles, obit., xx, 580.  
 Leclercq, M., sketch, xiv, 664.  
 Lecompte, S. D., sketch, xiii, 642.  
 Leconte de Lislé, C. M. R., obit., xix, 617.  
 Le Conte, John, obit. and port., xvi, 635.  
 Le Conte, John L., obit., viii, 591.  
 Le Conte, Joseph, port., xvii, 20.  
 Lecoq, discovery by, vi, 93.  
 Ledebur, observations of, xi, 534.  
 Lederer, Joachim, obit., i, 637.  
 Ledochowski, Cardinal, ix, 356.  
 Ledochowski, M., sketch, xiv, 664.  
 Lee, Alfred, obit., xii, 595.  
 Lee, Charles T., x, 156.  
 Lee, Henry, sketch, xiii, 664.  
 Lee, John D., obit., ii, 583.  
 Lee, Mary W., obit., xviii, 560.  
 Lee, Robert E., estate of, vii, 460; monument to, i, 802; x, 427, 429; indictment, 431.  
 Lee, Samuel J., obit., xx, 580.  
 Lee, S. S., obit., xvii, 556.  
 Lee, W. H. F., obit., xvi, 635.  
 Lee, William R., obit., xvi, 636.  
 Leeds, experiments, viii, 111.  
 Leeward Islands, the, xii, 801; xiv, 403; xvi, 863; xvii, 793; xx, 762.  
 Le Faure, A., obit., vi, 695.  
 Lefebvre, Jules, x, 358; xii, 276.  
 Lefebvre-Durufé, obit., ii, 605.  
 Lefferts, Col. Marshall, obit., i, 620.  
 Le Flô, A. E. C., obit., xii, 633.  
 Lefranc, experiments by, viii, 118.  
 Lefranc, P. J., obit., ii, 605.  
 Lefroy, E. C., obit., xvi, 676.  
 Legagneur, H. M. F., obit., i, 638.  
 Legal Tender, United States notes as, iv, 367; legality of their issue, iv, 335; during the rebellion, vii, 399; acts on, viii, 471.  
 Le Gendre, Léonce, obit., xviii, 582.  
 Leger, M., ix, 473.  
 Leggett, Francis A., obit., i, 620.  
 Legislative Assemblies, Creation and Disciplinary Power of. See Disciplinary Power, vii, 194.  
 Legislative authority, contempt of, x, 261.  
 Legislative, Executive, and Judicial Appropriation Bill, iv, 234-249; in extra session, 274-288; President's veto, iv, 289; amended bill, 291, 292; judicial appropriation bill, 292; vetoed, 294.  
 Lehmann Pasha, obit., ii, 605.  
 Leidy, J., obit. and port., xvi, 636.  
 Leigh, Egerton, obit., 638.  
 Leighton, Sir Frederick, x, 309; xi, 344, 345; xii, 276.  
 Leinster, Gerald Fitzgerald, Duke of, obit., xviii, 582.  
 Leitrim, Earl of, murder of, iii, 406.  
 Leland, Henry, obit., ii, 583.  
 Leland, George S., obit., vii, 639.  
 Leleiohoku, W. P., obit., ii, 605.  
 Lemaire, Philippe, obit., v, 600.  
 Lemaire, Pierre A., obit., xii, 633.  
 Lemaitre, Frédéric, sketch, i, 443.  
 Lemnos, inscriptions in, xi, 34.  
 Lemoine, J., obit., xvii, 597.  
 Lemon-juice, antipyretic, ix, 271.  
 Lena Delta, the, ix, 348.  
 Lendenfeld, Dr. von, ix, 545.  
 Lennox, Lord, obit., ii, 605.  
 Lenormant, F., obit., viii, 601.  
 Lenox, James, sketch, v, 426.  
 Lenox, Samuel, obit., i, 620.  
 Lenox Library, v, 427.  
 Lenström, experiments, viii, 29.  
 Lent, Lewis B., obit., xii, 596.  
 Lenz, Oscar, explorations by, v, 293; vi, 327; viii, 386; classification of tribes by, ii, 334; ix, 395.  
 Leo XIII, elected, iii, 732; encyclicals, iii, 733; vii, 723; correspondence with German Emperor, vii, 723; arbitration by, x, 144. See also Pecci and Papacy; sketch and port., xiv, 488.  
 Leo, Heinrich, obit., iii, 657.  
 Leonard, J. E., obit., iii, 641.  
 Leonard, W. H., obit., xvi, 637.  
 Leopold I, statue of, v, 55.  
 Leopold II, African expeditions due to, v, 295; ix, 80, 166, 167; x, 192, 392; silver wedding of, iii, 56; iv, 76.  
 Leopold, Prince, marriage of, vii, 369; obit., ix, 618.  
 Lepage, Bastien, obit., ix, 618; sale of works of, x, 364.  
 Lepanto, the, illustration, vii, 574.  
 Lepère, E. C. P., sketch, iv, 386.  
 Lepers, mission to, xiv, 250; care of, xx, 427.  
 Le Plongeon, Augustus, explorations of, v, 298; xi, 24.  
 Leprosy, in Colombia, xii, 140.  
 Lepsius, K. R., obit., ix, 618; his theory of the pyramids, ix, 21; x, 35, 36.  
 Lequesne, E. L., obit., xii, 633.  
 Leray, F. X., obit., xii, 596.  
 Lerdo, President, defeated, ii, 512.  
 Lerothodi, chief, x, 85.  
 Le Roy, W. E., sketch, xiii, 643.  
 Le Royer, M., x, 376.  
 Leschjanin, Gen., x, 728, 729.  
 Lesley, J. P., ix, 44; x, 45.  
 Leslie, Frank, sketch, v, 427.  
 Leslie, T. E. C., obit., vii, 646.  
 Lesquereux, Leo, sketch and port., xiv, 493.  
 Lessar, M., x, 5, 7, 16, 17.  
 Lesseps, F. de, vi, 714; viii, 307, 308; x, 178; sketch and port., xix, 402; residence of, xix, 403.  
 Lessing, Karl F., obit., v, 600.  
 Lester, C. E., obit., xv, 652.  
 Lester, George, sketch, xiv, 638.  
 Letcher, John, obit., ix, 608.  
 Letellier de St. Just, L., sketch, vi, 485.  
 Letellier-Valazé, sketch, i, 444.  
 Letheby, H., obit., i, 638.  
 Letrange, zinc process of, vii, 532.  
 Letsie, chief, vi, 85; x, 84.  
 Letters, opening of, decision concerning, iii, 809; immediate delivery, x, 251; postage on, 252.  
 Leuchtenberg, Duke, obit., ii, 605.  
 Levee Convention, a, viii, 495.  
 Levees, xiii, 500; xiv, 512; xv, 509.  
 Levee System, the, v, 532.  
 Leven, Earl of, obit., i, 638.  
 Leverich, C. P., obit., i, 620.  
 Leveridge, John, obit., xi, 688.  
 Leverrier, U. J. J., obit., ii, 605; xi, 539.  
 Le Vert, Octavia W., obit., ii, 583.  
 Levi, Leone, sketch, xiii, 664.  
 Levy, Calmann, obit., xvi, 676.  
 Levy, Joseph M., sketch, xiii, 664.  
 Lewal, General, x, 25.  
 Lewald, Fanny, sketch, xiv, 664.  
 Lewes, George H., obit., iii, 658.  
 Lewin, invention by, x, 345.  
 Lewis, Dio, obit., xi, 688.  
 Lewis, Estela A., sketch, v, 429.  
 Lewis, E. P. C., obit., xvii, 556.  
 Lewis, Edward, sketch, xiv, 638.  
 Lewis, Harriet, obit., iii, 641.  
 Lewis, H. C., researches of, vi, 19; sketch, xiii, 643.  
 Lewis, Ida, v, 455.  
 Lewis, John Francis, obit., xx, 580.  
 Lewis, John Frederick, sketch, i, 444.  
 Lewis, J. L., will case, xiii, 375.  
 Lewis, Tayler, sketch, ii, 432.  
 Lewis, Winslow, lantern, v, 444.  
 Lewiston, Idaho, xvi, 158.  
 Lewiston, Me., xiv, 152.  
 Lewthwaite, J., invention, ix, 471.  
 Lexington, Ky., College of Arts at, illustration, ii, 421; xiv, 152.  
 Lexington, Mass., monument at, illustration, ii, 487.  
 Lexington, Va., Washington and Lee University at, illustration, ii, 761.  
 Lexow Committee, xix, 537; xx, 549.  
 Ley, W. Clement, xi, 543.  
 L'Hôte, x, 154.  
 Libbey, Artemas, obit., xix, 585.  
 Libbey, Prof., xi, 381.  
 Liberation Society, xi, 17; xiv, 12; xv, 12; xvi, 10; xvii, 8; xviii, 12; xix, 10.  
 Liberia, i, 9; v, 429; viii, 387; xix, 404; schools in, xii, 416; slavery and polygamy in, 417; colonization, 417; inducements to emigration, 417; coffee-culture in, 417; xvii, 374.  
 Liberty, statue of, xi, 323, 649.  
 Librarians, convention of, xi, 475.  
 Libraries, the vice-regal, in Egypt, i, 247; the Corvina, ii, 379; discovered at Sippara, vii, 262; free circulating, xi, 649; township, in Wis., xviii, 758.  
 Library Economy and Statistics, xi, 474; catalogues, classification, selection of books, buildings, 476; legislation concerning, in the various States and territories, xii, 418; incorporation of company, 418; progress of, xviii, 426.  
 Library index, a new, xx, 639.  
 Libyan Desert, journey in the, xii, 304.  
 License question, the, viii, 663. See also Temperance.  
 Licensing system, Gothenburg, xv, 790.  
 Liebens, iii, 476; ix, 94.  
 Lichtenfels, T. P., obit., ii, 605.  
 Lick, James, sketch, i, 444.  
 Lick Observatory, v, 36; viii, 28; ix, 46; x, 54; xi, 57; xii, 39; xiii, 47, 48, 51.  
 Licona River, discovery of, iv, 401.  
 Liddon, H. P., obit., xv, 682.  
 Lidgwidgi Tancannini. See Lalla Rookh.  
 Lidy, C. M., experiments, iv, 136.

- Liebermann, invention, viii, 465.  
 Liebig, F., ix, 273, 808; xii, 101.  
 Liebknecht, Herr, imprisonment of, x, 418.  
 Liebreich, Prof., xii, 670.  
 Liebschutz, Morton, x, 154.  
 Liep-Bril, J. J., obit., xi, 720.  
 Lifeboats, steam, xx, 636.  
 Life-Saving Service, United States iii, 749; illustrations, 759-766; i, 592-594.  
 Light, xx, 649; sound produced by, apparatus showing, illustration, vi, 788; xiv, 694; xvi, 729; xviii, 618; comparisons, xviii, 45; xix, 563.  
 Lightfoot, J. B., sketch, xiv, 664.  
 Light-house establishment, the United States, v, 430; illustrations, 438-446.  
 Light-houses, Tillamook, illustration, v, 443; Fowey Rocks, illustration, 439; screw-pile, in Hampton Roads, 438; Paris Island and St. Augustine, illustration, 440; Spectacle Reef, 442; Eddystone; see Eddystone; in Chili, xi, 151; in Cojuto, Nicaragua, 653.  
 Light-house, steam-tender, illustration, v, 453.  
 Lightning, effects of, on species of trees, i, 250; Arago's classification, xii, 492; lightning-balls, 492; globular, 494; extent of flash, 494; conditions of danger from, 494; statistics of damage from, 494; lightning-rods, xvi, 733.  
 Light-ship, illustration, v, 450.  
 Ligne, Prince de, obit., v, 601.  
 Li-Hung-Chang, x, 29, 174; xviii, 145.  
 Likwa, or Hikwa, Lake, v, 297.  
 Lilienberg, N., x, 580.  
 Lima, earthquake at, ix, 649.  
 Lima, Ohio, xvi, 159.  
 Limairac, J. de, obit., i, 638.  
 Limbag, xv, 404.  
 Limnædter de Nieuwenhove, Baron, obit., xvii, 597.  
 Limouzin, Madame, xii, 294.  
 Lincoln, Abraham, statue of, xii, 280; obit., xv, 652; homestead and monument, xx, 356.  
 Lincoln, Mary T., obit., vii, 639.  
 Lincoln, Neb., xiii, 166; water, xix, 776.  
 Lincoln, Robert T., sketch and portrait, vii, 808.  
 Lincoln, Roman relies at, ix, 22.  
 Lincoln, T. B., sketch, xiii, 643.  
 Lind, Bertha, ix, 365.  
 Lind, Jenny, sketch, xii, 420.  
 Lindblad, A. F., obit., iii, 658.  
 Linderman, H. R., sketch, iv, 543.  
 Lindsay, David, exploration by, in Australia, xii, 311.  
 Lindsay, J. W. S., obit., ii, 605.  
 Lindsay, Thomas N., obit., ii, 584.  
 Lindstrom, Gustav, ix, 636.  
 Line guide, fishing rod, xvi, 710.  
 Linen, George, sketch, xiii, 643.  
 Linsly, Jared, obit., xii, 596.  
 Lippe, Adolph, sketch, xiii, 643.  
 Lippincott, J. B., obit., xi, 688.  
 Lippitt, H., i, 700; obit., xvi, 637.  
 Lippinan, experiments, viii, 111.  
 Lipsey, A. B., invention by, viii, 381.  
 Liquefaction of Gases, ix, 434.  
 Liquidation law, in Egypt, ix, 285, 291.  
 Liquids, evaporation of, xi, 429; xiv, 692; xvi, 726; xviii, 617; capillarity, xx, 647.  
 Liquor laws, in Virginia, ii, 758; the Moffett Register, 759; in Ohio, xii, 643; in Sweden and Norway, xix, 734.  
 Liquor licenses, xix, 740.  
 Liquor question. See Temperance and Prohibition.  
 Lisbon, view of, illustration, i, 665.  
 Lisgar, Baron, sketch, i, 444.  
 Lista, Ramon, exploration by, xii, 315.  
 Lister, Dr., ix, 746.  
 Liszt, F., obit. and port., xi, 478.  
 Litchfield, E. B., sketch, xiv, 638.  
 Literary Congress, iii, 314; x, 746.  
 Literary Property, xii, 140.  
 Literature, American, British, and Continental, in every volume; Japanese, in 1894, xix, 440; Spanish-American, in 1893, xviii, 462; in 1894, xix, 441.  
 Lithium, discoveries of, iv, 419.  
 Lithofraeteur, x, 345.  
 Lithotripsy, viii, 752.  
 Litloff, H., obit., xvi, 676.  
 Little, E. T., x, 362.  
 Little, James L., obit., x, 651.  
 Little Falls, N. Y., xx, 545.  
 Littlefield, Alfred H., vi, 789; obit., xviii, 560.  
 Littlefield, D. M., obit., xvi, 637.  
 Littlejohn, DeW. C., obit., xvii, 556.  
 Little Popo, ix, 365.  
 Little Rock, view of capitol at, ii, 37; xv, 135.  
 Littrow, K. L. von, obit., ii, 605.  
 Liver, operations on, viii, 751; nerves in the, ix, 654.  
 Liversidge, A., investigation by, vi, 97, 98.  
 Livron, C., experiments, vi, 751.  
 Li-Yung-Choi, or Li-Yung-Tsai, revolt led by, iii, 101; iv, 143.  
 Llewellyn Park, N. J., xviii, 169.  
 Lloyd, C., ix, 283, 285, 286; x, 455.  
 Lloyd, D. D., sketch, xiv, 638.  
 Lloyd, E., obit., xv, 683.  
 Loan associations, xiii, 245.  
 Loa viaduct, xiv, 292.  
 Lobbying, in Georgia, iv, 421.  
 Local-government act, xiii, 389.  
 Local option. See articles on States.  
 Loeh, Sir H. B., ix, 57.  
 Lock Prisso, x, 121, 122.  
 Locke, David R., sketch, xiii, 643.  
 Locke, F. T., obit., xviii, 560.  
 Locke, J. H., obit., xvii, 556.  
 Locker, A. E., obit., xviii, 582.  
 Loeker-Lampson, F., obit., xx, 612.  
 Lockport, N. Y., xiv, 143.  
 Lockroy, M., xi, 354.  
 Lockwood, Cape, ix, 35.  
 Lockwood, discovery by, ii, 325.  
 Lockwood, F. F., obit., i, 620.  
 Lockwood, S., obit., xviii, 560.  
 Lockwood, Samuel, obit., xix, 586.  
 Lockyer, J. N., observations by, iii, 35; iv, 133; vi, 243; vii, 33, 37; viii, 526, 528.  
 Locomotive, first, built in America, see Cooper, i, 212; compressed-air, i, 478; illustrations, 478, 479; vi, 512; with duplex driving-wheels, vi, 511; Fontaine, illustration, vi, 511; engineers' licenses, xiii, 9; electric, xviii, 281.  
 Lodge, at North Easton, illustration, xii, 363.  
 Lodge, J. O., ix, 46.  
 Lodyguine, invention by, iii, 275.  
 Loew, discovery by, vi, 99.  
 Loew, Charles E., obit., xi, 688.  
 Loewe, Ludwig, obit., xi, 720.  
 Loewy, Dr., xii, 35, 375.  
 Loftus, Lord, iv, 55; ix, 58.  
 Logan, G. W., sketch, xiv, 638.  
 Logan, John Alexander, sketch, v, 477; obit. and steel plate portrait, xi, 504.  
 Logan, Stephen J., obit., v, 593.  
 Logansport, xv, 136.  
 Log-rolling, iv, 718.  
 Lohé, Emil, obit., i, 638.  
 Lomakin, Gen., iv, 776.  
 Loménie, L. L. de, obit., iii, 658.  
 London and its environs, map of, ii, 360; illustrations: Trafalgar Square, 361; St. Paul's, 362; Westminster Abbey, 363; the Tower, 364; Buckingham palace, 366; Albert memorial, 367.  
 London, Canada, xv, 136.  
 Long and Rook islands, x, 681.  
 Long, A. L., obit., xvi, 637.  
 Long, Charles C., sketch, iii, 493.  
 Long, Edwin, x, 360; xi, 345; obit., xvi, 676.  
 Long, John D., sketch, v, 501.  
 Longevity, ix, 568.  
 Longfellow, Henry Wadsworth, sketch, vii, 478; portrait, vi, 485.  
 Longfellow, S., obit., xvii, 557.  
 Longman, William, obit., ii, 606.  
 Lonlay, Dick de, obit., xviii, 528.  
 Lonsdale, Earl of, sketch, i, 480; collection of pictures of, xii, 278.  
 Loochoo Islands, claimed by China and Japan, iv, 147, 529; v, 413.  
 Look Tin Sing, case of, ix, 427.  
 Loom, positive-motion, vii, 479.  
 Loomis, A. L., obit., xx, 580.  
 Loomis, Elias, sketch, xiv, 638.  
 Looms, carpet, viii, 94.  
 Loon Lake, engagement at, x, 129.  
 Loop, H. A., obit., xx, 581.  
 Lopez, A., Marquis of Comillas, obit., viii, 601.  
 Lopez, P. M., obit., ii, 584.  
 Lord, Jarvis, obit., xii, 596.  
 Lord, John, obit., xix, 586.  
 Lord, Rev. John C., obit., ii, 584.  
 Lord, Samuel, sketch, xiv, 639.  
 Lore, Charles B., sketch, vii, 189.  
 Lorencez, C. L., Comte de, obit., xvii, 597.  
 Lorillard, Pierre, x, 391.  
 Loring, E. G., sketch, xiii, 644.  
 Loring, G. B., obit., xvi, 637.  
 Loring Pasha, William Wing, i, 3; obit. and portrait, xi, 506.  
 Loris-Melikoff, Gen., sketch, ii, 455; attempt on life, v, 663; letter to, from Nihilists, 664.  
 Lorne, Marquis of, Governor-General of Canada, iii, 12, 246.  
 Lorquet, L. M. P., sketch, i, 480.  
 Lorson, King, ix, 365.  
 Los Angeles, Cal., xi, 172; xii, 123; water, xix, 776.  
 Lossing, B. J., obit., xvi, 637.  
 Lothrop, Daniel, obit., xvii, 557.  
 Lothrop, Samuel K., obit., xi, 689.  
 Lott, J. A., obit., iii, 641.  
 Lotteries in Kentucky, v, 425 xviii, 425; State and private, in



- Germany, x, 417; in Mexico, x, 589; in Brazil, xii, 71; xv, 238, 507; in Louisiana, xviii, 464.  
 Lottery amendment, xvi, 444.  
 Lottery traffic, suppression of, by Congress, xx, 196.  
 Lottimer, William, obit., i, 620.  
 Lot-vases, xiii, 26.  
 Lotze, H., obit., vi, 695.  
 Lough, J. G., sketch, i, 481.  
 Loughlin, John, obit., xvi, 638.  
 Loughridge, W., obit., xiv, 639.  
 Louis IV, of Hesse, ii, 352.  
 Louisiad Islands, x, 681.  
 Louisiana, in each volume; views, i, 483; constitutional amendments, i, 481; removal of Judge Hawkins, 481, 482; misappropriation, 482; question of impeachment of Gov. Kellogg, 482, 483, 484; asserted violence, intimidation, etc., 485, 486; address of Nicholls, 491; of clergymen, 491; rival legislatures, and governors, 493; Dubuquet confirmed, 493, 494; decision of electoral commission ii, 208; the two governments, ii, 455-465; Senator Spofford elected, 465; immigration, 467; case of J. C. Moncure, 467; constitutional convention, iii, 561; reorganization under the new constitution, v, 478; constitution of 1879, vii, 483; suit of State of New Hampshire, v, 479, 480; vi, 516; of New York, vi, 516; viii, 493; labor riots, and strikes, v, 482; xix, 443; vi, 516; colored university, v, 484; other schools, vii, 481, 482, 484, 485; financial embarrassment of New Orleans, vi, 517; culture of Perique tobacco abandoned, and new products introduced, 517, 518; jetties and railroads, 518; vii, 485, 486; overflows, vii, 480; ix, 453, 455; sugar, jute, rice, viii, 485, 496; canal improvement, ix, 455; State lands, viii, 495; levees, 495; cotton trade; ix, 456; Petite Anse or Salt Island, x, 549; iron discovered, 549; New Orleans committee of one hundred, 549; Tulane University, 549; Sunday law, xi, 509; ten-hour law, xii, 444; sugar-planters' association, 444; population, xv, 505; xvi, 443; State lottery, xv, 507; xvi, 444; xviii, 464; Constitutional commission, xviii, 465; changes in land level, xx, 427.  
 Louis Philippe, xi, 481.  
 Louisville, Ky., growth, xi, 172; illustrations, bridge at, i, 439; City Hall, ii, 420; exposition building, viii, 463; water, xix, 776.  
 Lourdes, basilica of, i, 705.  
 Lourenço Marques, xix, 107.  
 Loutin, M., invention by, iii, 271.  
 Louvain, reformatory, viii, 497.  
 Louvre, court of the, iii, 344.  
 Love, J. M., obit., xvi, 638.  
 Lovell, Mansfield, obit., ix, 608.  
 Loveu, Sven, obit., xx, 612.  
 Lovering, J., obit., xvii, 557.  
 Low, Abiel A., obit., xviii, 560.  
 Low, Frederick F., obit., xix, 586.  
 Low, John G., ix, 248.  
 Lowder, observations by, vii, 39.  
 Lowe, Viscount, obit., xvii, 597.  
 Lowe, water-gas process, viii, 274.  
 Lowell, Mass., growth of, xi, 173; xix, 776.  
 Lowell, James Russell, ii, 467; sketch and port., xvi, 446.  
 Lowell, R. T. S., obit., xvi, 638.  
 Lowenstein, S., sketch, xiv, 655.  
 Lower California, Americans in, xii, 503.  
 Lowry, Robert, vi, 600.  
 Loyal Legion, the, xii, 445; badge of, 329.  
 Loyola, Ignatius, anniversary, v, 673.  
 Lozère, xi, 379.  
 Lozier, Clemence Sophia, xiii, 501.  
 Lualaba River, the, ii, 331; iii, 363, 364.  
 Lubbock, Lady, obit., iv, 700.  
 Lübke, W. von, obit., xviii, 582.  
 Lucan, G. C. B., sketch, xiii, 664.  
 Lucas, C., obit., xv, 683.  
 Lucas, Louis A., i, 322.  
 Luce, A. S., obit., xvii, 598.  
 Luchsinger, Prof., ix, 658.  
 Lucius, R., sketch, iv, 740.  
 Ludeking, Charles, xii, 679.  
 Luder, M., invention by, ix, 737.  
 Lüderitz, F. A., ix, 362, 363; x, 137; xii, 306.  
 Ludington, H., xvi, 639.  
 Ludlow, N. M., obit., xi, 639.  
 Ludlow, W., expedition, x, 402.  
 Ludwig, Karl, obit., xx, 613.  
 Ludwig II, of Bavaria, sketch, xi, 511.  
 Ludwig III, Grand Duke of Hesse, obit., ii, 606.  
 Ludwig, IV, obit., xvii, 598.  
 Ludwig, Dr., experiments, x, 694.  
 Luh Vinh Phuoc, x, 27.  
 Luis I, sketch, xiv, 665.  
 Luitpold, Prince, xi, 392.  
 Luiz I, of Portugal, iii, 690.  
 Lukjanon, Dr., experiments by, xii, 674.  
 Lull, Edward P., obit., xii, 597.  
 Lumber-flumes, xv, 285.  
 Lumber, in Alabama, xviii, 7; in Arizona, 21; in British Columbia, 107; in Louisiana, 463; in Minn., 496; in Mo., 499; in Oregon, 597; in Washington, 755.  
 Lumby, J. R., obit., xx, 613.  
 Luminais, Evariste, x, 358.  
 Lunsden, Sir Peter, ix, 6; x, 4, 5, 6, 8, 16.  
 Luna, Juan, xi, 343.  
 Lunacy, the Lyman case, ix, 676.  
 Lunatic asylums, commitments to, in Illinois, iv, 479.  
 Lunge, G., experiments by, vi, 94.  
 Lung-Plague of Cattle, vii, 486.  
 Lungs, operations on the, ix, 748; x, 742.  
 Lunt, George, obit., x, 651.  
 Lupton Bey, discovery by, viii, 386; x, 394; death of, xiii, 293; sketch, 665.  
 Lupton, N. T., obit., xviii, 561.  
 Lushington, Sir S., obit., ii, 606.  
 Luther Quadricentennial, viii, 498; statue in Eisleben, 501.  
 Luther, Prof., discovery by, ii, 44.  
 Lutherans, in each volume; pulpit and altar fellowships, discussion of the "Galesburg rule," i, 471; ii, 496; iv, 574; vi, 521; Free Diet, i, 472; iii, 507; marriage with a deceased wife's sister, iii, 506; division on doctrine of predestination, vi, 521; movement for institution of bishops, viii, 505; church standards, ix, 458; order of service, x, 552; xi, 515; union in the south, x, 553; xi, 514; gifts to Philadelphia hospital, xii, 448; Muhlenberg centenary, xii, 450; xiii, 502; xiv, 519; xv, 509; xvi, 465; xvii, 425.  
 Lutz, Baron, obit., xv, 683.  
 Lutz, Dr. von., xi, 392.  
 Luxemburg, xiv, 582; xv, 587.  
 Luxor, temple of, x, 32.  
 Lyall, J., invention by, vii, 479.  
 Lycosura, sculptures at, xvi, 19.  
 Lyle, invention by, iii, 754, 762.  
 Lyman, C. S., obit., xv, 653.  
 Lyman, David B., obit., ix, 608.  
 Lyman, J., obit., xv, 653.  
 Lyman lunacy case, ix, 676.  
 Lyman, Samuel P., obit., i, 620.  
 Lyman, T. B., obit., xviii, 561.  
 Lynch, Patricio, obit., xi, 720.  
 Lynch, P., vi, 735, 739; viii, 64.  
 Lynch, P. W., sketch, vii, 491.  
 Lynchburg, growth of, xii, 124.  
 Lynching in Ohio, xx, 632.  
 Lyndon, P. F., obit., iii, 641.  
 Lynn, Mass., growth of, xi, 173.  
 Lynne, T. A., obit., xv, 653.  
 Lyons, illustration, iii, 346.  
 Lyons, Iowa, xvii, 114.  
 Lyons, Rev. J. J., obit., ii, 584.  
 Lyons, Lord, sketch and port., xii, 450.  
 Lynn, Mass., water, xix, 776.  
 Lyre-bird, illustration, ii, 52.  
 Lyttleton, Baron, sketch, i, 498.  
 Lytton, Lord, sketch, i, 406; Viceroy of India, i, 44, 402; attempt on the life of, iv, 494; v, 389; resignation of, v, 384; sketch and port., xvi, 470.  
 Maamtrasna murders, the, ix, 376; x, 451.  
 Mabery, C. F., experiments by, x, 578; xi, 535.  
 MacAdam's Fins, ill., xi, 471.  
 McAllister, Julian, obit., xii, 598.  
 McAllister, R., obit., xvi, 639.  
 McAllister, W. K., obit., xiii, 644.  
 McAlpin, Maj.-Gen. E. A., port., xx, 506.  
 McAlpine, W. J., obit., xv, 653.  
 Macao, claim on, by Chiua, v, 103; illustration, 103.  
 Macauley, Daniel, obit., xix, 586.  
 MacBain, Sir J., obit., xvii, 598.  
 McBryde, M. M., obit., xviii, 561.  
 MacCabe, Cardinal, obit., x, 663.  
 McCall, R. W., obit., xviii, 582.  
 McCance, observations, iii, 37.  
 McCandless, W., obit., vii, 640.  
 McCarroll, James, obit., xvii, 558.  
 McCarter, L., sketch, xiii, 644.  
 McCarthy, Patrick, obit., ii, 584.  
 McCauley, E. Y., obit., xix, 586.  
 McCaull, John A., obit., xix, 586.  
 McClay, W. B., obit., vii, 640.  
 McClellan, George B., sketch, ii, 492, 556; obit. and port., x, 553.  
 McClelland, Robert, sketch, v, 503.  
 McCloskey, John, Cardinal, sketch, ii, 493; obit. and steel plate portrait, x, 562.  
 McCloskey, John, obit., v, 594.  
 McCook, George W., obit., ii, 584.

- McCormick, C. H., obit., ix, 609.  
 McCormick Observatory, ix, 47.  
 McCosh, James, quoted, xiii, 7; obit. and port., xix, 587.  
 McCoskrey, S. A., Bishop, deposed, iii, 704.  
 McCoun, W. T., obit., iii, 641.  
 McCoy-Hatfield feud, xiii, 463.  
 McCoy, W. D., obit., xviii, 561.  
 McCrady, Edward, obit., xvii, 558.  
 McCrary, G. W., sketch, ii, 493; obit., xv, 653.  
 McCreery, T. C., obit., xv, 653.  
 McCue, A., sketch, xiv, 639.  
 McCulloch, Hugh, obit. and port., xx, 581.  
 McCullough, J. E., obit., x, 651.  
 McCurdy, C. J., obit., xvi, 639.  
 McDill, J. W., obit., xix, 587.  
 Macdonald, invention by, ii, 719.  
 Macdonald, A., obit., vi, 695.  
 Macdonald, J. A., v, 211; sketch and portrait, vii, 492.  
 MacDonald, J. C., obit., xiv, 665.  
 McDonald, Joseph E., ix, 396; obit. and port., xvi, 639.  
 MacDonald, J. M., obit., i, 620.  
 Macdonald, Sir John A., sketch, xvi, 474.  
 McDonald, W. J., obit., iii, 641.  
 Macdonnell, D. J., trial, i, 672.  
 McDougall, J. A., obit., xix, 587.  
 McDowell, Irvin, x, 557 *et seq.*; obit., x, 652.  
 McDowell, K. S., obit., ix, 609.  
 Macduff, J. R., obit., xx, 613.  
 Macedo Costa, obit., xvi, 676.  
 Macedo, Henrique de, xii, 683.  
 Macedo, M. B. de, obit., vi, 695.  
 Macedonia, x, 108, 109, 726, 727.  
 Macedonia, outrages in, ix, 764.  
 Macedonian agitation in Bulgaria, xx, 100.  
 Macedonian question, the, xiii, 404, 768.  
 McElrath, T., sketch, xiii, 644.  
 McElroy, John, ii, 584.  
 McElroy, Joseph, obit., i, 621.  
 McElroy, W. H., xi, 2.  
 McEnery, J., obit., xvi, 639.  
 McEntee, J., obit. and port., xvi, 640.  
 Macfarlane, Robert, obit., xviii, 591.  
 Macfarlane, S., explorations of, i, 330; ii, 335.  
 MacGahan, J. A., obit., iii, 658.  
 McGarrahan, William, obit., xix, 587.  
 McGee, W. J., x, 404.  
 McGill, A. T., sketch, xiv, 629.  
 McGlynn, Rev. Dr., excommunication of, xii, 716, 717; xiii, 20.  
 McGowan, J., obit., xvi, 640.  
 McGrath, H. P., obit., vi, 686.  
 McGraw, John, obit., ii, 584.  
 MacGregor, Sir Charles Metcalfe, obit., xii, 633.  
 MacGregor, discovery, ii, 325.  
 McHale, J., obit., vi, 695.  
 Machebeuf, J. P., sketch, xiv, 639.  
 McHenry, H. D., obit., xv, 653.  
 Machias, Me., xviii, 471.  
 McHugh, R. J., obit., xix, 588.  
 McIntosh, J. B., sketch, xiii, 644.  
 McIntosh, W. C., x, 47, 690.  
 Mackay, A. M., obit., xv, 683.  
 McKay, C. F., sketch, xiv, 639.  
 McKay, Henry K., obit., xi, 689.  
 Mackaye, J. S., obit., xix, 588.  
 McKee, G. C., obit., xv, 654.  
 McKennal, Alexander, xii, 152.  
 McKennan, W., obit., xviii, 561.  
 McKenney, Gerald, obit., xi, 689.  
 Mackenzie, A., obit., xvii, 598.  
 Mackenzie, D., xi, 374.  
 Mackenzie, G. H., obit., xvi, 640.  
 Mackenzie, Rev. J., in South Africa, ix, 112, 113; x, 86.  
 Mackenzie, Sir M., obit., xvii, 598.  
 Mackenzie, P. W., obit., xvi, 641.  
 Mackenzie, R. S., sketch, xiv, 639.  
 Mackenzie, R. Shelton, sketch, vi, 522.  
 McKeon, J., obit., xviii, 591.  
 Mackey, Consul Bedford, imprisoned, x, 104.  
 McKibbin, D. B., obit., xv, 654.  
 McKinley bill, the, xv, 205 *et seq.*  
 McKinley, D. A., obit., xvii, 558.  
 Mackonochie, Rev. A. H., viii, 6.  
 McLaren, A. A., obit., xvii, 598.  
 Maclay, M., sketch, xiii, 665.  
 Maclay, Nicholas de M., xii, 647.  
 McLean, Sir D., obit., ii, 607.  
 Maclean, G. M., obit., xi, 690.  
 McLean, James H., obit., xi, 690.  
 Maclean, John, obit., xi, 690.  
 McLean, W., obit., xv, 654.  
 McLean, William, x, 129.  
 McLenegan, S. B., x, 400.  
 McLin, S. B., i, 298; testimony of, iii, 718.  
 Macleod, J. F., obit., xix, 588.  
 McLoughlin, Louise, ix, 249.  
 McMahon, L. S., obit., xviii, 561.  
 MacMahon, Marie E. P. M., Comte de, sketch and port., xviii, 468.  
 MacMahon, President, on cabinets, ii, 308, 310; on prolonging his tenure of office, 310; opposition to, 311-318; resignation of, iii, 388; iv, 388.  
 McManus, J. T., obit., xv, 654.  
 MacMaster, James D., obit., xi, 790.  
 McMichael, W., obit., xviii, 561.  
 McMullen, J., obit., xviii, 591.  
 MacMunn, C. A., experiments by, ix, 658; x, 692.  
 McMurdo, Sir W. S., obit., xix, 617.  
 McNary, W. H., obit., xv, 654.  
 McNeil, J., obit., xvi, 641.  
 McNeil, trial of, ix, 638.  
 McNeill, observations by, viii, 21.  
 McNevin, John, obit., xix, 588.  
 McNierny, Francis, obit., xix, 588.  
 Macomb, Capt. J. N., x, 401.  
 Macomber, F. A., obit., xviii, 561.  
 Macon, Ga., ill., ii, 340; xviii, 164.  
 McPherson, E. H., obit., xi, 690.  
 McPherson, Edward, obit., xx, 581.  
 MacPherson, R. T., obit., xi, 721.  
 Macpherson, W., obit., xviii, 582.  
 McQuade, James, obit., x, 652.  
 McRae, J. E., obit., xvii, 558.  
 McTyeire, H. N., sketch, xiv, 640.  
 McViekar, W. A., obit., ii, 584.  
 MacWhorter, A., obit., v, 594.  
 Macy, Josiah, Jr., obit., i, 621.  
 Macy, R. H., obit., ii, 584.  
 Madagascar, vii, 492; xix, 448; map, vii, 493; viii, 505; xx, 431; explorations in, viii, 387; new tribes, *ibid.*; French in, ix, 458; xx, 432; the Hovas, x, 564; diplomatic negotiations with the French, 565; storming of Tarrat by Admiral Miot, 565; repulse of the French, 565; peace negotiations, 565; xi, 516; treaty of peace, xi, 517; secret convention, 518; fresh disputes, 518; xii, 452; French colonization, xi, 519; commerce, xii, 452; xv, 336; xvi, 314; xvii, 295; xviii, 332; forest village, xix, 451; Prime Minister's residence, xix, 450; Queen's residence, xix, 449.  
 Madden, E. M., obit., x, 652.  
 Maddox, R. L., ix, 651.  
 Maddox, Samuel T., obit., i, 621.  
 Madge, the yacht, x, 790.  
 Madier de Montjau, Alfred, obit., xvii, 598.  
 Madison, capitol at, illustration, i, 808; xvi, 159.  
 Madisonville, Indian relics at, ix, 15.  
 Maddler, Herr, xi, 585.  
 Madonna of Corano, the, x, 506.  
 Madou, J. B., obit., ii, 606.  
 Madras, new harbor at, iii, 287; breakwater, vi, 250; riots in, vii, 415.  
 Madrazo, Federico, xix, 617.  
 Madrid, palace at, illustration, ii, 679; revolt in, xi, 808.  
 Madrid, Marguerite, Princess, obit., xviii, 582.  
 Madrig, Jean N., obit., xi, 721.  
 Madura, xiii, 589.  
 Maeder, F. G., obit., xvi, 641.  
 Maeder, Gaspard, obit., xvii, 558.  
 Maffei, Andrea, obit., x, 668.  
 Magdala, view near, i, 4.  
 Magee, W. C., obit., xvi, 677.  
 Maggiora, Dr., experiments by, xii, 676.  
 Magliani, A., obit., xvi, 677.  
 Maguard, François, xix, 617.  
 Magne, Pierre, obit., iii, 658.  
 Magnesite, in furnaces, x, 581.  
 Magnesium, carbonate, xi, 139.  
 Magnetic apparatus, ill., vi, 405.  
 Magnetism, xiv, 702; xv, 719; xvi, 733; xix, 659; xx, 655. See Electricity.  
 Magnin, Joseph, sketch, iv, 386.  
 Magnus, Baron, v, 208.  
 Magoon, Elias L., obit., xi, 690.  
 Magoon, H. S., sketch, xiv, 640.  
 Magrath, A. G., obit., xviii, 561.  
 Magyars, the, v, 369, 370; demonstrations against, viii, 49.  
 Mahan, Asa, sketch, xiv, 640.  
 Maharero, Chief, x, 137, 138.  
 Mahdi, El, sketch, viii, 507; vi, 444; vii, 255; viii, 298, 299; first reverse, 300; capture of El Obeid, *ibid.*; victory over Gen. Hicks, viii, 301; ix, 301, 297 *et seq.*; nicknamed "the bridegroom," 301; x, 310, 313, 315; sketch of, 316. See also Hicks, xiv, 430.  
 Mahdists, invasion by, viii, 1.  
 Mahmoud, Sami Pasha, vi, 236.  
 Mahogany, xi, 423; forests, xiv, 413.  
 Mahon, J. P. O., obit., xvi, 677.  
 Mahone, W., obit., xx, 581.  
 Mahoney, P. P., sketch, xiv, 640.  
 Mahrattas, the, ix, 345.  
 Maief, explorations of, iii, 359.  
 Mailland, Albert, x, 363.  
 Maillardet, invention by, x, 613.  
 Mail-matter, distribution, etc. See Postal Facilities, xii, 684-690.  
 Maimene, district of, ix, 5; x, 48.  
 Maine, Sir Henry J. S., xiii, 685.  
 Maine, in each volume; views, i, 474; ii, 500; statue of Gov. King, i, 475; abolition of capital punishment, ii, 500; election of Sen-



- ator Blaine, ii, 501; tramp act, iii, 508; schools, 511; Penobscot Indians, iv, 576; vi, 524; operation of the liquor law, iv, 579, 580; xi, 520; election disputes, iv, 582-587; v, 486, 487, 488; constitutional amendments, v, 490; ix, 463; railroad taxation act, vi, 523; fish-culture, 525-526; railroad statistics, vii, 496; lumber industry, viii, 511; population, xv, 513; prohibition, 515; revision of laws, xviii, 472.
- Maipu, battery of, ix, 131.
- Maison de France, x, 32.
- Maitland, Capt., xi, 36.
- Maitre Ambrose opera, xii, 520.
- Majlath von Szekehely, obit., viii, 601.
- Major, John R., sketch, i, 501.
- Makart, Hans, sketch and portrait, ix, 464; xii, 279.
- Maklay, Dr. M., observations of, in Papua, ii, 335.
- Makoffsky, Konstantin, xii, 279.
- Maksut Ali Khan. See Alikhanoff.
- Malaga, view of, ii, 700.
- Malagasy race of Madagascar, the, x, 564, 565.
- Malagola, A., obit., xx, 613.
- Mala vita, the, xvi, 389.
- Malay Peninsula, troubles in, i, 404.
- Malcolm, W., obit., xv, 654.
- Malden, Henry, sketch, i, 501.
- Malden, Mass., xi, 173.
- Malet, Sir E., x, 120.
- Malietoa, King, deposed, xii, 731.
- Malleable castings, experiments with, xii, 48.
- Mallory, Garriek, obit., xix, 588.
- Mallet, J. W., researches by, vi, 92, 93; xi, 535.
- Mallet, Sir L., obit., xv, 683.
- Mallory, C. E., obit., xv, 654.
- Malmesbury, Earl, obit., xiv, 665.
- Malon ministry, the, ix, 78, 80.
- Malow, Jules, obit., xi, 721.
- Malta, xv, 403; xvi, 342.
- Mälzel, invention by, x, 613.
- Mamiani, Count, obit., x, 663.
- Mammoth Cave, fish of, i, 440.
- Manassas, evacuation of, x, 557.
- Manchester, N. H., xi, 174.
- Manchester, Art Exhibition, xii, 278; ship-canal, the, ix, 373, 376, 377; xv, 281.
- Manchester-by-the-Sea, house at, xii, 366.
- Manchester, Va., xvi, 160.
- Manchuria, the Japanese in, xx, 131.
- Mancini, P. S., sketch, xiii, 665.
- Mandalay, capture of, x, 115.
- Mandeville, J., death of, xiii, 397.
- Mandolin, xiv, 525.
- Manet, Edouard, obit., viii, 601.
- Manetho, vii, 257.
- Manganese, new compounds of, iii, 85; new mineral, vii, 87; bronze, vii, 529; viii, 525; ores in Chili, xi, 151; xii, 115; estimation of, ix, 123; xiv, 541; xviii, 484.
- Mangin projector, the, ix, 310; illustration, 309.
- Manhès, P., inventions by, x, 576, 577.
- Manica question, xv, 739.
- Manilius, quoted, ix, 600.
- Manistee, Mich., xvii, 114.
- Manisty, Sir H., obit., xv, 683.
- Manitoba, ministerial crisis in, iv, 319; new route for merchandise of, iv, 321; growth of, iv, 321; land laws, v, 217; boundaries, vi, 216, 222; history, etc., viii, 511; ix, 465; x, 567; exemption law in, x, 567; provincial claims, 568; mounds in, xi, 23; Mennonites in, xi, 532; railway charters in, xii, 455; flax-culture in, xi, 523, 532; xiii, 511; xvi, 478; xvii, 432; xviii, 473; xix, 455; xx, 438.
- Manitou, xii, 124.
- Mankato, xv, 136.
- Mankoroane, Chief, ix, 112; x, 85, 89.
- Manly, B., obit., xvii, 558.
- Manly, M. E., sketch, vi, 527.
- Mann, Dr. George, obit., i, 651.
- Mann, W. J., obit., xvii, 558.
- Manners, Lord John, x, 450.
- Manning, Amos R., sketch, v, 491.
- Manning, Daniel, sketch and portrait, x, 757; obit., xii, 597.
- Manning, Henry E., obit. and portrait, xvii, 599.
- Manning, T. C., obit., xii, 597.
- Mannsfeld, Count, obit., vi, 696.
- Manogue, P., obit., xx, 581.
- Mansfield, xv, 137.
- Mansfield, E. D., sketch, v, 491.
- Mansfield, W. R. See Sandhurst.
- Manstein, G. von, obit., ii, 606.
- Mantell, Dr., viii, 436, 437.
- Manteucci, P., explorations by, vi, 326; death of, vi, 327.
- Manteuffel, Baron, obit., x, 664.
- Mantineia, excavations at, xiii, 27.
- Manual training, xvi, 481; in colleges, xii, 235; in schools, 235; schools of St. Louis, Chicago, Toledo, Baltimore, Philadelphia, Montclair, and Cleveland, 236, 237, 238.
- Manucy, Bishop, death of, x, 713.
- Manufactures of the United States, vii, 498; xx, 440; in foreign markets, ii, 126; iv, 187; v, 512; vi, 854, 857; by cities, xix, 753; of States, see under names of States.
- Manufacturing industries, viii, 334; xvii, 275, 766; in 1894, xix, 273.
- Manuscripts, deciphering of Mexican, xii, 16.
- Maoris, the, difficulty with, iv, 57; decrease of, v, 37; vii, 45; peace with, viii, 37; ix, 60; x, 66; xi, 66.
- Mapleson, Laura S., obit., xix, 589.
- Maple sugar, xvi, 557.
- Maracaybo, Lake, survey, xii, 790.
- Marais, L. H., obit., xvi, 677.
- Marathon tumulus, ix, 24.
- Marble, large fields of, in California, xi, 129; xv, 520; xvi, 541.
- Mareano, experiments by, x, 154.
- Marc Dufrasse, obit., i, 638.
- Marcère, Emile, sketch, ii, 320.
- Marchal, J. J., obit., xvii, 599.
- Marchaud, Count, obit., i, 638.
- Marche, A., explorations by, ii, 333, 334; xii, 313.
- Marcke, Emile van, xi, 347; obit., xvi, 677.
- Mareus Aurelius, tablet, ix, 22.
- Marcy, Randolph Barnes, x, 401, 554; obit., xii, 597.
- Margarine act, xii, 344.
- Margarita Island captured, x, 776.
- Margary, H. J., obit., i, 638.
- Margary murder, the, i, 44, 103.
- Maria of Saxony, obit., ii, 606.
- Maria of Spain, obit., i, 638.
- Maria, Grand-Duchess of Russia, obit., i, 638.
- Maria Anna, Empress, obit., ix, 618.
- Maria Christina, regent of Spain, x, 656; sketch, 738.
- Marie Luise Alexandrine, Princess of Prussia, obit., ii, 606.
- Marie of Bavaria, obit., xiv, 665.
- Maricette, Auguste, researches of, vii, 256, 260; ix, 19, 22; obit., vi, 696.
- Marignac, discoveries by, iii, 87; iv, 137.
- Marigny, M., obit., xv, 654.
- Marilley, Bishop, sketch, xiv, 666.
- Marine Bank failure, ix, 329.
- Marine Conference, International, xiv, 525.
- Mario, G., sketch and port., viii, 514.
- Marion, xv, 137.
- Maritime Canal Company, xii, 563.
- Maritime Engineering, xii, 257; lumber raft abandoned, 257.
- Maritime exhibition, xiv, 528.
- Markevitch, B., obit., ix, 618.
- Markham, A. H., excursion of, iv, 417.
- Markham, C. R., quoted, vii, 682.
- Markland, A. H., obit., xiii, 645.
- Marks, A. S., sketch, iii, 784.
- Marlborough, Duke of, obit., xvii, 599.
- Marnaduke, J. S., obit., xii, 598.
- Marno, E., African journey of, iii, 362; obit., viii, 601.
- Marquardt, L., experiments by, viii, 113.
- Marquesas Islands, relics, ix, 275.
- Marquette, xv, 137.
- Marr, Carl, picture by, xi, 346.
- Marriage bill, civil, in Austria, xix, 67.
- Marriage, laws on, in Austria, i, 57; with a step-daughter, i, 510; with a sister-in-law, iv, 454; v, 111, 411; kinship in, iv, 690; between whites and negroes, ii, 714; iv, 845; vii, 459; x, 369; Catholics and Protestants in Chili, iii, 96; x, 164; of unfrocked priests in France, iii, 348; polygamous, iii, 813, 814; civil, in Italy, iv, 526, 773; in Denmark, vi, 209; in Hungary, ix, 69; in India, xii, 382; international, x, 26, 91; reform, xiii, 433; xv, 434.
- Marriages, Hindu, xvi, 371.
- Marriott, W., xii, 489.
- Mars, satellites of, ii, 43; iii, 35; ix, 49; inner satellites of, xx, 54; ellipticity of, v, 33; canals of, xi, 54; recent studies of, xiii, 53, 511; map, 512; xv, 40; opposition of, xvii, 39; xix, 49; atmosphere, xx, 54; polar regions, xx, 54.
- Marsegg, H. M., obit., xii, 634.
- Marsh, C. W., experiments by, viii, 118.
- Marsh, George P., sketch, vii, 504; on forests, viii, 356.
- Marsh, O. C., observations by, vi, 304; viii, 437; x, 404; port., xv, 578.
- Marsh, Sylvester, obit., ix, 609.
- Marshall, A. M., obit., xviii, 582.
- Marshall, O. H., obit., ix, 610.

- Marshall Islands, German protectorate over, x, 133, 415.  
 Marshall, W. C., obit., xix, 617.  
 Marshall, W. R., obit., xx, 582.  
 Marshals, U. S., proposed appropriation for compensation and expenses of, v, 152-167.  
 Marshes, drainage, in Italy, i, 255.  
 Marshman, Newman R., invention by, x, 617.  
 Marston, John, obit., x, 653.  
 Marston, W., obit., xv, 633.  
 Martel, L. J., obit., xvii, 599.  
 Martha, B. C., obit., xx, 613.  
 Marthon, J., obit., xvi, 641.  
 Martigny, G., death of, i, 659.  
 Martin, B. N., obit., viii, 592.  
 Martin, C. H., xii, 312.  
 Martin, Henri, obit., viii, 601.  
 Martin, John, nominated, xiii, 460.  
 Martin, John A., sketch, xiv, 640.  
 Martin, Joseph, journeys of, in Siberia, xii, 311.  
 Martin, J. B., ix, 45.  
 Martin, Konrad, obit., iv, 700.  
 Martin, M., nominated, xiii, 766.  
 Martin, Nicolas, obit., ii, 606.  
 Martin des Pallières, obit., i, 638.  
 Martine, R. B., obit., xx, 582.  
 Martineau, Harriet, sketch, i, 501; statue of, xi, 347.  
 Martinelli, T. M., sketch, xiii, 665.  
 Martinez, A., obit., xvi, 677.  
 Martinho, A. S. C., vii, 61.  
 Martinique, viii, 821; ix, 804; x, 783; xvii, 840; xiv, 824; xvi, 865; xiii, 794.  
 Martins, experiments by, viii, 632.  
 Martinucci, case of, vii, 724.  
 Martos, Christino, obit., xviii, 583.  
 Marvil, J. H., obit., xx, 582.  
 Marvin, Enoch M., obit., ii, 584.  
 Marvin, R. P., obit., xvii, 559.  
 Marvin, A. R., obit., i, 621.  
 Marx, Karl, obit., viii, 602.  
 Maryland, in each volume; views, i, 503, 505; ii, 479; arbitration of the North Carolina boundary, i, 502; establishment of Johns Hopkins University, 506; prison inspection, ii, 478; refusal of applications for admission to the bar, 481; election of Senator Broome, iii, 520; proposed canal to connect Baltimore with the ocean, 521; trial of judges of elections for disregard of U. S. marshals, 521; artificial propagation of the oyster, iv, 591; inauguration of Gov. W. T. Hamilton, v, 492; Senator Gorman elected, 492; anniversary of the founding of Baltimore, 494; coal-miners' strike, vii, 506; McDonough school of farming, 507; Johns Hopkins University, 508; Pratt Public Library, 509; gift of Mr. Wilson, 510; election of Governor McLane, viii, 516; claim of the State against the Chesapeake and Ohio Canal, xii, 456; population, xv, 516, and xvi, 493; boundary, xv, 520; Australian ballot in, xvi, 495; valuations, xvii, 432; constitutional amendment, xviii, 475; new seal of, xix, 457.  
 Masai, the tribe of, ix, 347.  
 Mashonaland, xiv, 108.  
 Masius, Hermann, obit., xviii, 583.  
 Masoch, Sacher, obit., xix, 617.  
 Mason, discovery by, iii, 362.  
 Mason, George C., obit., xix, 539.  
 Mason, Lowell, ix, 543.  
 Mason, Sir J., obit., vi, 696.  
 Mason, Sergeant, trial of, vi, 848.  
 Masonry dam, Austin, Tex., xvii, 252; in India, xvii, 254.  
 Masonry, emblems of, in the obelisk, ix, 595, 600.  
 Maspero, Prof., discoveries by, vi, 21; vii, 260; ix, 21, 22; x, 32; report, xi, 29-32; xii, 18.  
 Mass, Joseph, obit., xi, 720.  
 Massachusetts, in each volume; views, i, 510, 512, 513; ii, 483, 485, 486, 487, 490, 491; iii, 524, 526; bank legislation, i, 508; family-bank scheme of E. Wright, 509; eastern railroad relief, 509; election acts, 509; constitutional amendment relating to Harvard College instructors, proposed, 510; veto of act confirming a marriage of stepfather and daughter, 510; election of Governor Rice, 514; prohibitory law defeated, ii, 482; reform-school and hospital investigation, 482, 483; coroner system abolished, 483; opening of reformatory prison for women, 485; State charities report, 486; act for new board, iv, 596; meaning of "money-bill," iii, 523; Hoosac tunnel, 524; vi, 537; xi, 529; child-labor bill, iii, 524; proposed woman suffrage amendment, 525; statistics of color-blindness, 526; new charities, 528; vi, 537; election of Governor Talbot, iii, 537; constitutional amendment, iv, 597; worship in public institutions, 597; taxation, 597, 598; discussion of the place of women in public affairs, 598, 599; civil-damage bill, 599; contract-labor system, 600; v, 495; success of societies for prevention of cruelty to animals, iv, 601; railroad commissioners, 601; constant circuit rail system, 602; election of Governor Long, 605; sketch, v, 501; re-election, vi, 541; 250th anniversary of the founding of Boston, v, 501; divorce laws, vi, 535; viii, 519; screen-law, the, vi, 539; decision against admitting a woman to practice at the bar, 539; fish-culture, 540; railroad legislation, vii, 511; election of Governor Butler, 519; his recommendations on woman-suffrage and education, 516, 517; Tewksbury almshouse investigation, viii, 517; women in office, 519; election of Governor Robinson, ix, 471; re-election, x, 573; civil-service system, x, 572; xi, 529; Normal Art School, xi, 528; Sunday law, xii, 458; proposed division of the town of Beverly, 459; election of Governor Ames, 463; population, xv, 520; bribery investigation, 521; prize fighting, xx, 463; good roads, xx, 463; strikes, xx, 463.  
 Massai, Cardinal, sketch, xiv, 666.  
 Massari, explorations by, vi, 526.  
 Massowah, i, 3 *et seq.*; Italians at, ix, 296; x, 312, 505; xi, 1; xii, 1; xiii, 3, 4; xiv, 2; xv, 458.  
 Mastiff, the English, ix, 260.  
 Masupha, Chief, x, 54.  
 Matabele, the war with, xviii, 123; lady, xviii, 124; warrior, 125.  
 Matabele-land described, iv, 403; xiv, 106; xv, 95; conquest of, xix, 104.  
 Matagong Island seized, iv, 16.  
 Matamoros, cathedral of, illustration, ii, 512.  
 Matanzas, illustration, ii, 701.  
 Maté, exportation of, xii, 72.  
 Mather, R. H., obit., xv, 655.  
 Mathews, C., sketch, xiv, 640.  
 Mathews, J. N., sketch, xiii, 545.  
 Mathews, Col. T. R., port., xx, 512.  
 Mathushek, F., obit., xvi, 641.  
 Matière-noire, experiments with, vii, 93.  
 Matout, Louis, sketch, xiii, 665.  
 Matsell, George W., obit., ii, 584.  
 Matson, C. C., nominated, xiii, 441.  
 Matsudaira, obit., xv, 684.  
 Matta, M. A., obit., xvii, 599.  
 Matteson, O. B., sketch, xiv, 640.  
 Matthews, H. M., i, 803.  
 Matthews, Julia, obit., i, 621.  
 Matthews, M. R., invention, x, 617.  
 Matthews, Stanley, trials before, x, 268 *et seq.*; sketch and port., xiv, 640.  
 Matheieu, Henri, sketch, xiv, 641.  
 Matto Grosso, the, x, 104; revolt of, xvii, 66.  
 Mattoon, Stephen, sketch, xiv, 641.  
 Mattson, Hans, obit., xviii, 562.  
 Maturin, E. S., sketch, vi, 541.  
 Matzerath, J., obit., i, 639.  
 Mauch Chunk, ill., ii, 636.  
 Maudsley, A. P., xi, 24.  
 Maumené, discovery by, iii, 90.  
 Mauna Loa, ix, 389.  
 Maupassant, Guy de, obit. and port., xviii, 583.  
 Maurau, J. E., sketch, xiii, 645.  
 Maurice, Jules, obit., i, 639.  
 Mauritius, xiv, 400; xvi, 344; xvii, 327.  
 Maus, Henri, obit., xviii, 583.  
 Maverick, A., sketch, xiii, 645.  
 Maxey, S. B., obit., xx, 582.  
 Maxim, H. S., inventions by, v, 239; vi, 259; vii, 275; his electric lamp, ix, 305.  
 Maxwell, Lady, obit., ii, 606.  
 Maxwell, J. C., theory of electricity of, vi, 239.  
 May, Abby W., sketch, xiii, 645.  
 May, Mrs. G. M. C., obit., xx, 613.  
 May, Sir T. E., obit., xi, 721.  
 Maya, hieroglyphic inscriptions, xi, 24; inscriptions, xvii, 12.  
 Maya Indians, xx, 489.  
 Mayer, Joseph, obit., xi, 721.  
 Mayer, J. R. von, obit., iii, 658.  
 Mayer, Karl, sketch, xiv, 666.  
 Mayer, L., experiments by, v, 87.  
 Mayflower Society, xiv, 642.  
 Mayhew, Henry, obit., xii, 634.  
 May Laws, amended, xii, 325.  
 Maynard, E., obit., xvi, 642.  
 Maynard, Horace, obit., vii, 640.  
 Mayne, R. C., obit., xvii, 600.  
 Mayo, Lord, x, 2.  
 Mazade, Charles, obit., xviii, 583.  
 Mazatlan, illustration, i, 547.  
 Maze, H., obit., xvi, 677.  
 Mazzanovich, John, obit., xi, 691.  
 Mead, E. S., obit., xix, 589.



- Mead, Larkin G., x, 361.  
Mead, William C., obit., iv, 694.  
Meade, Edwin R., sketch, xiv, 641.  
Meade, George G., x, 428; statue of, xii, 280.  
Meadville, Pa., xvi, 160.  
Meany, Stephen Joseph, xiii, 645.  
Mears, Frederick, obit., xvii, 559.  
Meaux, Viscount de, ii, 319.  
Mechanic Arts, School of, xii, 233.  
Mechanical Engineering, progress of, vi, 541.  
Mechanical Improvements and Inventions, i, 515; ii, 494.  
Mechanics, xiv, 691; xvi, 725; xviii, 616; xx, 647.  
Meehi, J. J., obit., v, 601.  
Meeklenburg Declaration Celebration, vii, 634.  
Medal of Honor, the United States, xii, 463; illustration, 329; the naval, 473.  
Medals, astronomical, xiii, 58.  
Medical congress, xv, 382.  
Medical diplomas, sale of, v, 622.  
Medical Science and Practice: its Progress, vi, 549.  
Medicine, recent advances in, xviii, 701; recent works on. See Literature, in every volume.  
Medina, territory of, xii, 415.  
Medjidie Order, the, ix, 279.  
Medley, John, obit., xvii, 600.  
Medium, pyramid of, xvi, 20.  
Meendeleef, M., xi, 540.  
Megalopolis, ruins at, xvi, 18.  
Megaphone, the, iii, 537.  
Meheddin Buhran, obit., i, 639.  
Mehemet Ali Pasha, sketch, ii, 499; obit., iii, 659.  
Mehemet Ali Square, ill., i, 245.  
Meigs, Henry, obit., ii, 585; bridge built by, viii, 317.  
Meigs, Col., survey by, viii, 309.  
Meigs, M. C., obit. and port., xvii, 559.  
Meinicke, K. E., sketch, i, 521.  
Meissner, experiments by, iv, 26.  
Meissner, A., x, 664.  
Meissonier, J. L. E., collected works of, x, 359; the vidette, xi, 347; sketch and port., xvi, 500.  
Mejillones, territory of, x, 400.  
Mekarski, invention by, i, 516.  
Melbourne, Australia, exposition at, v, 39; post-office at, illustration, iv, 57.  
Melchers, Paul, obit., xx, 613.  
Melchisedek, Bishop, ix, 764.  
Meldola, B., xii, 670.  
Melgund, Lord, x, 126.  
Melikoff, Count Loris, xiii, 521.  
Melilla, seige of, xix, 500.  
Melin, Joseph, x, 363.  
Melines, F. J., viii, 367.  
Melinger, Gaston, xii, 276.  
Melinite, xi, 355; scandal, the, xvi, 311.  
Melkarth, temple at, ix, 28.  
Mell, Patrick H., sketch, xiii, 646.  
Melland, B., experiments x, 695.  
Mellin, Henrik, sketch, i, 521.  
Mellish, Sir G., obit., ii, 606.  
Melville, G. W., portrait, vii, 334.  
Melville, Herman, sketch and port., xvi, 503.  
Melville, Viscount, obit., i, 639.  
Memnon, statue of, x, 607.  
Memorial arch, xv, 620; xvii, 522.  
Memorial Day, xii, 475.  
Memphis, xi, 174; illustration, ii, 711; debt of, iv, 829; vi, 832; unsanitary condition of, iv, 380; yellow fever in, iv, 359, 829. See also Fever, Yellow.  
Memphis colossi, xiii, 30.  
Memphis, Tenn., water, xix, 776.  
Mendana, ix, 275.  
Mendelieff, invention by, iii, 545; classification of elements by, v, 87; law of atomic weights discovered vi, 40; ix, 118; xii, 100.  
Mendelssohn Centenary, xi, 459.  
Mendenhall, J. W., obit., xvii, 559.  
Mendenhall, John, obit., xvii, 559.  
Mendenhall, T. C., xi, 46, 47; port., xiv, 36.  
Mendes, A. P., obit., xviii, 562.  
Menelek, King of Shoa, ii, 2; iv, 2; viii, 386; xi, 1; xii, 2; proclaimed negus, xiv, 1.  
Menendez, Gen., x, 467.  
Mencphthah, King, ix, 20; x, 36.  
Menes, vii, 260.  
Menier, invention by, vi, 255.  
Mennonites, iii, 50; xi, 531; xv, 66, colony, the, xviii, 473; xx, 466.  
Menominee, Mich., xviii, 165.  
Mentana monument, v, 410.  
Menthol, ix, 272; influence of, xii, 673.  
Mercadier, experiments by, vi, 787.  
Mercantile Agencies, xiv, 537.  
Mercedes, Maria de las, Queen of Spain, obit., iii, 658; x, 656.  
Merchant Marine of the United States, vii, 520; ix, 198.  
Mercie, Antonin, xi, 343; xii, 276.  
Mercier, Honoré, obit., xix, 617.  
Mercur, Ulysses, sketch and portrait, xii, 478.  
Mercury, mass and density of, ii, 43; transit of, iii, 35; xvi, 50; xix, 55; xx, 52; brightness, xix, 55; spots, viii, 20; xv, 39; rotation of, xvii, 39; xx, 53.  
Meredith, Joseph H., obit., xi, 691.  
Meredith, Mrs. L. A. (Twamley), obit., xx, 613.  
Meriden, xiv, 154.  
Meridian, common prime, vii, 150; ix, 54.  
Meriten, A. C., experiments by, xi, 534.  
Mermillod, G., obit., xvii, 600.  
Meriwether, D., obit., xviii, 562.  
Merivale, Charles, obit., xviii, 583.  
Méritens, invention by, vii, 265.  
Merodach, ix, 18, 19.  
Merriam, A. C., obit., xx, 582.  
Merriam, George, obit., v, 594.  
Merrick, Frederick, obit., xix, 589.  
Merrick, P. B., sketch, xiii, 646.  
Merrick, Richard T., obit., x, 653.  
Merrick, W. M., sketch, xiv, 641.  
Merrill, M. M., obit., xviii, 562.  
Merrill, S., explorations of, i, 328; ii, 324.  
Merrill, W. E., obit., xvi, 642.  
Merriman, C. S., invention by, iii, 752, 766.  
Merriman, T. A., obit., xvii, 560.  
Merrimon, A. S., obit., xvii, 560.  
Merry, Francisco, sketch, i, 521.  
Mersey Tunnel, viii, 311; x, 331.  
Merson, Luc Olivier, x, 362.  
Merv. decay of, i, 7; importance of, iv, 775; x, 7; Russian annexation, viii, 706; ix, 6; x, 2; chief of, x, 19.  
Merv Turkomans, the, submission of, to Russia, x, 4.  
Merwede Canal, the, xvii, 488.  
Meshed, ix, 648; x, 14.  
Meskovich, Gen., x, 731.  
Message, President's, in article CONGRESS.  
Messersmith, J. S., obit., xvi, 642.  
Messiah, prediction of the Moham-medan, vi, 444; vii, 804; viii, 507. See also Mahdi, El.  
Messner, Joseph, obit., xi, 722.  
Metallic sodium, xii, 107.  
Metallurgy, vii, 528; viii, 520; ix, 471; x, 574; xi, 533; xii, 479; xiii, 522; xiv, 538; xv, 525; xvi, 505; xvii, 439; xviii, 479; xix, 464; xx, 466.  
Metals, i, 522; ii, 499; new, ii, 90, 502; vi, 93; detection of alloys, iv, 502; new compound, v, 93; annealing, vi, 542; melting-points, ii, 501; viii, 91; production of the precious, ii, 240; specific gravity, ix, 120; electric conductivity of, xi, 538; market in 1884, ix, 479.  
Metemnah, taken, ix, 301.  
Meteoric Showers, vii, 39; x, 56; in 1893, xviii, 46.  
Meteorograph, the, vi, 258.  
Meteorology, international observations, i, 525; iii, 537; viii, 525; stations for observations, iii, 538; vii, 335; map showing annual rainfall, viii, 527; x, 581; xi, 539; congress and stations, xi, 545-547; xii, 487; popular errors in, xii, 487; xiii, 531; xiv, 546; xv, 532; xvii, 447; xx, 475.  
Meteors. See Astronomical Progress, in every volume.  
Methodist Ecumenical Congress, vi, 557.  
Methodists, in each volume; proposed union with Colored Church, i, 533; question of lay representation in Wesleyan conference, 535; embarrassment of publishing-house of M. E. Church South, iii, 547; new denomination of, iv, 608; ecumenical council, v, 509; vi, 557; lay representation in Canadian conference, vii, 538; union of Canadian, ix, 268; question of extension of ministerial term, ix, 483; doctrine concerning bishops, 483 secession in Tonga from Wesleyans, x, 588; resolution on divorce, 483; xi, 549; endowment of King's College University at Toronto, 549.  
Methyl alcohol, etc., v, 89.  
Metis, rebellion of the, in Canada, ix, 124; x, 711.  
Metric Congress, xx, 307.  
Metronome, electric, with illustration, xi, 740.  
Metropolitan Bank, ix, 329.  
Metropolitan Museum. See under Fine Arts.  
Metternich, Prince R., obit., xx, 613.  
Metz, illustration, ii, 352.  
Meuse, fortification of, xii, 64.  
Mexican manuscript, xii, 16.  
Mexican War, the, see Santa Anna, i, 715; bill for pensions to veterans of, debated, viii, 248.  
Mexico, City of, illustration, i, 543, 545; incident of its capture, x, 421, 533.

- Mexico, views, i, 543, 545, 547; ii, 511, 512, 514; iii, 554; silver, i, 542; industrial development, 542, 543; revolution, 544; Escobedo's expedition to suppress disturbances in Michoacan, 545; revolutionary plan of Tuxtepec—constitution of 1857, 545; Diaz head of provisional government, 545; uprising in Oajaca, 546; re-election of Lerdo, 546; sketch of Diaz, 547; the only railroad, ii, 511; end of military operations, 512; suppression of raids, 513; manufacturers' association, iii, 553; need of means of communication, 555; United States recognition of Diaz government, 555; condition of the republic, 555; new Episcopal church, iv, 611; deputation to promote commerce, 614; Tehuantepec ship-railway, 614; vi, 569; election of Gonzalez, v, 510; new steamship lines, vi, 569; submarine cable, 569; telegraphs, 569; new railways, 569; xii, 502; geography, vii, 540; relations with United States, viii, 535; discovery of tin, 537; of gold and silver, x, 591; mines of Sonora, viii, 537; resources of Michoacan, 537; tunneling a volcano, 537; petroleum, 537; grape and banana culture, 537; the toloachi-plant, 538; immense estates, 538; American goods in, ix, 492; orchilla-weed, zapote-wood, 493; need of paper-mills, 493; pearl-fisheries, 493; mission work, 494; lottery of divine providence and others, x, 589; reaction in favor of ecclesiasticism, 589; opposition to Mormons, 589; Indian hostilities, 590; natural phenomena, 590; xi, 557; interference with Central America, x, 465, 590; riot of students, 590; unemployed capital and taxes, xi, 554; cotton and silk, 555; volcanic eruptions, 557; sulphur-mines, 556; steamer lines, xii, 502; objections to Jewish colonists, 503; Protestantism in, 503; immigration and American enterprise, 503; relations with Guatemala, 503; drainage of the valley, 504; iridescent stone-ware, 504; earthquakes, 504; the French in, x, 431; attempt to send Gen. Grant to, 432; pyramid discovered, viii, 536; the Aztec calendar-stone, viii, 536; Aztec remains found in, ix, 17; church work in, 709; population, xv, 548; relations with the United States, xvi, 524; insurrections, xvi, 524 and xviii, 492; article, xx, 488.
- Meydoun, pyramid, vii, 262.
- Meyer, H., observations vi, 303.
- Meyer, H. A., sketch, xiv, 666.
- Meyer, Hans W., obit., xx, 614.
- Meyer, J. G., obit., xi, 722.
- Meyer, Julius L. von, obit., xx, 614.
- Meyer, L., table by, vi, 41; observations, ix, 18.
- Meyer, Lothar, x, 148; xii, 100.
- Meyer, Lucas, x, 136, 137.
- Meyer, M. W., researches, vii, 33.
- Meyer, V., observations by, xviii, 111; invention by, viii, 465; ix, 119, 120; xii, 100, 104.
- Meyer, W., observations, viii, 23.
- Meyrowitz, A., obit., xii, 598.
- Mezzacapo, L., obit., x, 664.
- Miall, E., obit., vi, 696.
- Mica powder, x, 345.
- Michael, Grand Duke, sketch, ii, 514.
- Michaelovsk-Askabad railroad, x, 7.
- Michel, F. X., obit., xii, 634.
- Michel, Louise, trial of, viii, 369; xii, 29.
- Michelis, Friedrich, obit., xi, 722.
- Michell, Dr., obit., ii, 607.
- Michel-Levy A., experiments by, x, 156.
- Michelson, A. A., ix, 49.
- Michigan, in each volume; views in, i, 552; ii, 519, 520; State reform school, i, 549; election of Gov. Croswell, 553; re-election, iii, 562; fish-culture, ii, 519; State public school, iii, 557; communication with the upper peninsula, 559; proposed constitutional amendments, iv, 616; vi, 574; vii, 557; ix, 495; election of Senator Chandler, 616; election of Gov. Jerome, v, 523; re-election, vii, 557; revision of laws, vi, 574-576; railroad lands, 576; public lands, 579; University report, 582; election of Senator Conger, 576; tax and assessment act, vii, 547; charitable institutions, 553; election of Senator Palmer, viii, 540; State census, ix, 494; of 1895, xx, 490; election of Gov. Alger, 495; population of cities, x, 593; election of Gov. Luce, xi, 560; election of Senator Stockbridge, xii, 504; salt manufacture, 506; local-option law in operation, 506; fires, vi, 586; population, xv, 550; judicial decisions, 552, and xvi, 527; farm mortgages, xv, 552, and xvi, 527; electoral law, xvii, 464; State lands, xviii, 494; constitutional amendments, 495.
- Michigan City, Ind., xvi, 160.
- Microcoeli, ix, 496.
- Micrometer-telescope, i, 554.
- Micro-organisms, ix, 495; x, 149, 160.
- Micro-polariscope, ix, 516.
- Microphone, the, iii, 562.
- Microscopical Society, American, xviii, 31.
- Microscopy, ix, 499; in botany, ix, 90; in chemical analysis, x, 155.
- Microtasimeter, the, iii, 563; illustration, 563.
- Middendorf, A. Tron., obit., xix, 618.
- Middleton, Gen., x, 125 *et seq.*; knighted, 129.
- Middleton, J. C., sketch, xiii, 664.
- Middletown incorporated, xiii, 608.
- Midhat Pasha, sketch, i, 774; trial of, vi, 841; obit., ix, 618.
- Midian, the land of, theory concerning, iii, 361.
- Midwinter Exposition in California, xviii, 120; xix, 91; plan of, xix, 93; xx, 105.
- Mieroslavski, L., obit., iii, 659.
- Miers, J., obit., iv, 700.
- Mignet, F., obit., ix, 619.
- Mignonette case, ix, 522.
- Mihlinovich, Col., x, 729.
- Miklosich, F., obit., xvi, 677.
- Miklucho-Maclay, journey in New Guinea, iii, 364.
- Milan IV of Servia, sketch of, ii, 520; vii, 738; x, 109, 112, 727; divorced, xiii, 739; abdicates, xiv, 760.
- Miles, H. A., obit., xx, 582.
- Miles, M., experiments x, 690.
- Miles, Marcus H., obit., ii, 585.
- Miles, W. R., obit., xv, 655.
- Milford Haven, docks, vii, 279.
- Milford, N. H., Centennial, xix, 518.
- Milhau, J. J., obit., xvi, 642.
- Milne, xi, 140.
- Military defenses, of Denmark, v, 207; of Austria, vii, 51.
- Military interference at elections, bill on, iv, 835.
- Military Order, of America, xv, 553; of the United States, xix, 644.
- Militia, bill on, in Georgia, iv, 421; in Illinois, report, iv, 485; v, 380; improvements in New Jersey, iv, 668; needed in Nebraska, v, 552; laws in Canada, viii, 83; State laws, xi, 471.
- Milk, impure, ix, 2.
- Mill, Mr., observations by, xi, 540.
- Millais, Sir John, x, 359, 364; xi, 345; xii, 277.
- Millard, H. B., obit., xviii, 562.
- Millard, Harrison, obit., xx, 582.
- Millard, Albert, obit., xvii, 600.
- Miller, Emmanuel, obit., xi, 722.
- Miller, George J., obit., i, 639.
- Miller, John, obit., xi, 691.
- Miller, Rev. John, obit., xx, 583.
- Miller, John L., sketch, xiv, 641.
- Miller, J. Warren, obit., i, 621.
- Miller, Robert, obit., i, 639.
- Miller, Samuel F., obit., xvii, 560.
- Miller, S. F., obit. and port., xv, 655.
- Miller, W., nominated, xiii, 609.
- Miller, Warner, sketch, vi, 648.
- Miller, William, preaching of, xi, 2.
- Miller, William H. H., sketch and port., xiv, 803.
- Miller, W. R., i, 39, 40; iv, 38.
- Millet, Aimé, obit., xvi, 678.
- Millet, Frank D., xi, 346.
- Millet, J. F., xi, 347.
- Mills bill, the, xiii, 206.
- Mills, Clark, obit., viii, 592.
- Mills, J. E., xi, 136.
- Mills, R., ix, 798; sketch, xiii, 646.
- Mills, T. W., investigations by, viii, 636.
- Mills, Zophar, obit., xii, 598.
- Milman, Robert, sketch, i, 554.
- Milmore, Joseph, obit., xi, 691.
- Milmore, Martin, obit., viii, 592.
- Milns, William, sketch, xiv, 641.
- Milow, P. S., obit., xii, 599.
- Milroy, J. B., nominated, xiii, 443.
- Miltzin, Mount, vi, 327.
- Milwaukee, view of, i, 807; growth of, xi, 174; water, xix, 776.
- Min River, fighting on the, ix, 139, 141; illustrations, 139, 141.
- Minchin, J. B., survey in South America by, ii, 336.
- Mindeleff, Dmetri, obit., xvii, 566.
- Mindoon, xi, 114.
- Mind-reading, xii, 506. See Telepathy.



- Miner, A. A., obit., xx, 588.
- Mineral exhibition in Peru, xi, 752; land convention, xiii, 569; mineral wool, xvi, 528.
- Minerals, in Tennessee, i, 742; new vi, 98, 401; x, 153; xi, 139; in Florida, xii, 287; obtained artificially, x, 156; in Texas, xix, 741.
- Mineral waters, x, 593.
- Miners, convention of, vii, 77; congress, xv, 71; xvi, 311; xx, 307; international, xix, 321; congress of, in Belgium, xviii, 78; Federation of, xix, 762.
- Mines, J. F., obit., xvi, 642.
- Mines, of Mexico, i, 542; v, 18; viii, 537; side-lines of, iii, 112; v, 119; draining of, iii, 280; Sutro Tunnel, iii, 288; in Peru, iii, 291, 688; in Arabia, iii, 361; gold, in Georgia, iii, 371; iv, 428; *débris* from, iv, 119; v, 71, 73; vi, 78; vii, 75; of Colombia, iv, 149; of Nevada, iv, 658; in Arkansas, vi, 33; in Alabama, vi, 8; of Colorado, vi, 118; viii, 143; xii, 142; new, v, 119; xvii, 16; coal, in Kentucky, v, 425; decreased value of Nevada, vi, 628; laws on claims to, vi, 628; United States, vi, 853, 856; iron, in Minnesota, vii, 560; in Tennessee, vii, 789; in South Carolina, vi, 814; of Chili, viii, 124; of Honduras, viii, 432; of Montana, viii, 547; xii, 519; tin, in Dakota, viii, 523; xii, 219; quicksilver, of Siena, viii, 523; gold, of Russia, viii, 700; Chinese superstition concerning, vii, 101; Bureau of, in California, v, 71; inspector of, in Indiana, iv, 501; in Bolivia, xii, 69; in Idaho, xii, 273; nickel, in New Caledonia, xii, 485; antimony, in Portugal, xii, 485; ruby, in Burnah, xii, 84; salt, in New York, xii, 725; laws of, in Australia, ix, 58. See articles on the States.
- Minghetti, Mario, xi, 453; obit., xi, 722.
- Mining, Poetsch method of, xi, 320; congress, xvii, 475; law, xiii, 552; statistics, xvi, 846; towns, new, xvii, 126; in Arizona, xviii, 20; in Colorado, 176; in Utah, 744.
- Minneapolis, Minn., growth of, xi, 175; its mills, vi, 588; water, xix, 777.
- Minnesota, in each volume; views in, ii, 522, 524; act passed allowing women to vote at school elections, i, 555; limited divorce act, 556; constitutional amendments, 557; vi, 595; viii, 542; xi, 564; xviii, 495; railroad bonds, 558; ii, 521; iii, 564; v, 524; their history, vi, 590; sketch of Governor Pillsbury, i, 558; his re-election, iv, 632; grass-hopper plague, i, 558; proposed amendment, ii, 525; vi, 595; re-election of Senator Windom, ii, 526; re-election, vi, 592; tax-law, iii, 564; school text-books, 565; office of Public Examiner created, 565; his report, iv, 624; sugar-cane industry, iii, 568; commercial convention, 569; seven per cent. the legal rate of interest, iv, 623; inspection of wheat, 623; swamp-lands, 625; vi, 596; homestead laws, iv, 627; analysis of waters, 628; effect of severe cold, 628; mildness of climate in the extreme northwest, 628; second centenary of the discovery of the Falls of St. Anthony, v, 527; forests, vi, 592; election of Governor Hubbard, 595; re-election, viii, 543; iron-ore in the Vermilion Lake region, vii, 560; prohibitory amendment rejected, viii, 542; cyclone at Rochester, viii, 543; fish-culture, ix, 527; gold discoveries, 527; railroad commission, x, 601; repeal, xii, 510; census, 602; xx, 490; election of Governor McGill, xi, 563; Senator C. K. Davis elected, xii, 510; convict-labor, 510; garnishment law, 511; high license, 512; iron-mines, 512; population, xv, 554; judicial decisions, 555; railroad and warehouse commission, xvi, 531; grain inspection, xvii, 468; mortgage indebtedness, xviii, 496.
- Minor, J. B., obit., xx, 583.
- Minor Planets. See Astronomical Progress, in every volume.
- Minor, W. T., sketch, xiv, 641.
- Mint, United States, statistics of, vii, 484.
- Minto, William, obit., xviii, 583.
- Minton tiles, ix, 248.
- Minzaing, Prince, xii, 81; campaign against, 82.
- Miot, Admiral, x, 565.
- Mirage, xi, 565; illustrations, 566, 568, 569.
- Miranzai expedition, xvi, 376.
- Miribel, M. F., obit., xviii, 583.
- Mirsky, Leon, iv, 777.
- Miryachit, ix, 554.
- Mirza Ataulla Khan, x, 12.
- Missionaries, civil relations of, vi, 566, 768; case of Rev. G. Brown, *ibid.*; starved to death, viii, 695; in the Soudan, 695; in China, x, 169; massacre of French, in Tonquin, x, 31; expelled from the Caroline Islands, xii, 741; massacre of, in Egypt, xi, 312; doctrinal tests for, xii, 148; outrage on, xvii, 744.
- Missiones dispute, xx, 95.
- Missions, Foreign, i, 559; in Denmark, iv, 312; xiv, 520, 521; American Board of, xiv, 180; London Society, xiv, 181; International Conference of, xiii, 560. See also the articles on the Religious denominations. See under titles of Churches.
- Mississippi, in each volume; view, i, 562; proposed impeachment of Gov. Ames, and his resignation, i, 561; constitutional amendments, i, 561; ii, 527; iii, 571; iv, 637; improvement in finances, i, 562; election of Governor Stoue, ii, 527; murder of J. W. Gully, and mob attack on Judge Chisolm, 528; organization for suppression of lawlessness, 528; free-school system, iii, 569; xi, 571; health precautions, iii, 570; cause of disturbances in the southwest, 570; Confederate archives, 571; Vicksburg Landing threatened by sand-bars, 571; railroads, 572; v, 527; x, 603; convention of fruit-growers and railroad men, iii, 573; natural features of the State, 574; prevalence of yellow fever, 575; need of a constitutional convention, iv, 632; v, 528; cotton-industry, iv, 633; negro-exodus, 634; xi, 571; protection from inundation, iv, 635; insurance laws, 636; acts regarding rights of women, 636; the faculty of the University on spelling reform, 637; invention for converting seed-cotton into yarn, 638; revised code, v, 527; census returns, 529; vi, 599; public lands, vi, 597; xii, 514; election of Governor Lowry, vi, 600; re-election, x, 604; education, vii, 561; ix, 529; xii, 514; manufactures, vii, 563; viii, 545; re-election of Senator Lamar, vii, 564; disputed congressional election, 564; re-election of Senators George and Walthall, xi, 570; local-option act, 570; levees, xii, 514; population, xv, 557, and xvi, 532; constitutional convention, xv, 559; the new constitution, xvii, 471.
- Mississippi River, celebration of La Salle's discovery, vii, 486; source of, x, 399; map, xix, 303.
- Mississippi River Improvement, i, 684; ii, 279; iii, 502; iv, 344, 635; v, 530; vi, 600, 610; deepening of the mouth of, xii, 229.
- Missouri, statistics, State government, legislative proceedings, elections, etc., in each volume; view in, i, 567; election of Governor Phelps, i, 567; bonds declared void, 568; census, ii, 528; strike, 530; alleged irregularities in State Treasurer's office, iii, 575; iv, 641; v, 538; proposed constitutional amendment, iii, 579; iv, 639, 643; viii, 546; x, 604; xi, 576; railroads, iii, 579; rat-bounty law, iv, 639; bill to establish the whipping-post, 639; tiff, or baryta, used for paint, 639; inadequacy of State revenues, 640; immigration bureau, 641; v, 539; insurance law, iv, 642; fish-bill, 642; temperance movement, 642; ix, 532; defaulting counties, cities, and towns, iv, 643; Cottey-tax law, 644; liability for railroad subsidy bonds, v, 540; election of Governor Crittenden, 241; improvement of rivers, vi, 610; local indebtedness, vii, 564; State claims, 565; notorious band of robbers, 567; election of Governor Marma-duke, ix, 532; re-election of Senator Vest, x, 604; high-license, xi, 573; re-election of Senator Cockrell, xii, 515; the Bald-Knobbors, 516; local option, 516; population, xv, 562; geological survey, xvi, 535; government lands, xviii, 499; sale of vagrants in, 499; defense of ballot, xx, 499.
- Missouri, in every volume.
- Missouri River, convention on improvement of, vi, 610; xvi, 801.

- Mistassini Lake, ix, 349, 350; x, 399.
- Misti Arcuipa, volcano of, illustration, i, 661.
- Mitchell, A., obit., xii, 599.
- Mitchell, C. L. M., obit., xv, 655.
- Mitchell, C. W., x, 365.
- Mitchell, L. M., sketch, xiii, 646.
- Mitchell, Maria, sketch and port., xiv, 641.
- Mitchell, S. Weir, xii, 679.
- Mitchell, Sir W., obit., iii, 659.
- Mitchell, William, obit., xi, 692.
- Mitchelstown, riot at, xii, 341.
- Mivart, St. George, quoted, xiii, 7.
- Mizner, L. B., xv, 412, 414.
- Mizon, exploration of, vii, 336.
- Mlongo, King, portrait, ix, 170.
- Moab, survey of, ix, 27.
- Moak, N. C., obit., xvii, 560.
- Moberly, Dr., Bishop of Salisbury, death of, x, 21.
- Mobile, Ala., charter repealed, iv, 20; debt of, v, 12; in the war of the Rebellion, x, 431; xiii, 167.
- Möbius, Prof., observations of, vi, 712, 714.
- Mobs, crimes by, in Kentucky, iii, 473; in Louisiana, iii, 501; in Mississippi, iii, 570; in Alabama, xviii, 7.
- Model village, in Egypt, xix, 256; of Koobeh, view of, xix, 256.
- Modigliani, E., explorations of, xi, 382.
- Modulator, illustration, ix, 549.
- Moeller, Louis, x, 361.
- Moen, P. L., obit., xvi, 642.
- Møris Lake, xvii, 14; monuments, xiii, 29.
- Moewe, Wilhelm, obit., xi, 722.
- Moffat, J. C., obit., xv, 655.
- Moffat, Robert, obit., xviii, 602.
- Mohammed Sultan Pasha, obit., ix, 619.
- Mohammed Taha, xviii, 299.
- Mohammed Tewfik, proclaimed Khedive, iv, 333; sketch, 335; vii, 233.
- Mohammedan revolt, xx, 141.
- Mohammedanism, iii, 581; iv, 647; v, 541; reported danger to, ii, 5; institutions of, x, 316. See also Islam, vi, 440.
- Mohammedans, races of, in Turkey, i, 571; supposed movement to excite discontent among, v, 689; excitement of, in Turkey, vii, 804; treatment of, in China, x, 174; xiii, 567.
- Mohl, Julius von, sketch, i, 568.
- Mohr, Eduard, explorations of, i, 331; death of, ii, 330.
- Moigno, Abbé, obit., ix, 619.
- Moissan, H., experiments xii, 107.
- Moknaweweo, ix, 389.
- Molbech, C. K. F., obit., xiii, 665.
- Moleschott, Jacob, obit., xviii, 584.
- Molesworth, W. N., obit., ii, 607.
- Molesworth, W. N., obit., xv, 684.
- Moleva, E., researches of, xviii, 536.
- Molière, Dr., ix, 747.
- Moline, xv, 137.
- Molino del Rey, battle of, x, 421.
- Molisch, Dr. Hans, xii, 110.
- Mollenda, experiments, xvii, 112.
- Mollendorf, Herr, x, 174, 266.
- Möller, Axel, medal to, vi, 40.
- Moltke, Helmuth K. B., on war, vii, 716; obit. and port., xvi, 535.
- Momotombo, volcano of, eruption, xi, 653.
- Monaco, Prince, sketch, xiv, 666.
- Monahan, J. H., obit., iii, 659.
- Monal, Mount, ix, 544.
- Monastery, first, in Scotland since the Reformation, i, 706.
- Monastic Association Bill, in Austria, i, 57.
- Monastic Order, in the Anglican Church, ii, 22.
- Moncasi, Juan Oliva v., iv, 822.
- Moncrieff, Lord J. W., obit., xx, 614.
- Moncrieff, Scott, x, 307, 319.
- Moneton, xiv, 154.
- Monell, C. L., obit., i, 621.
- Monetary Congress, International, iii, 314; conferences, vi, 60.
- Monetary Union, Latin, x, 379.
- Monetite, vii, 88.
- Money, xvii, 275.
- Money of Yap Islands, the, x, 139.
- Money-Bills, definition of, iii, 523.
- Money-Market, the. See Finances and Financial Review.
- Money-Orders, xii, 687; international, xiv, 230.
- Mongolia, exploration in, xi, 377; disturbances in, xvii, 93.
- Mongredien, A., obit., xiii, 605.
- Monite, vii, 88.
- Monitor, the original, xiv, 298.
- Monmouth Monument, x, 362.
- Monnier, H., obit., ii, 607.
- Monolith of Salawan-Kuppam, xix, 26.
- Monoliths, perforated, xiii, 28.
- Monrad, Ditlev G., obit., xii, 634.
- Monro, H. A. J., obit., x, 665.
- Monroe Doctrine, vii, 813; x, 431, 436. See also Panama Canal; in Africa, a, ix, 363.
- Monroe, J. A., obit., xvi, 643.
- Monselet, Charles, sketch, xiii, 666.
- Montague, C. H., sketch, xiv, 642.
- Montague, Henry J., obit., iii, 641.
- Montana, statistics, etc., ii, 531; viii, 547; ix, 533; x, 604; xi, 576; xii, 517; xx, 500; Mormons in, viii, 548; Indians, viii, 548; ix, 533; xi, 577; constitutional convention, ix, 534; tax-exemption, 536; land-surveys, xi, 577; drought, 576; gag-laws, xii, 517; admitted as a State, xiv, 569; constitutional convention, 569; population, xv, 565; mineral lands and railroads, xvi, 540; State lands, xviii, 502; State Capitol, xix, 497.
- Montano, Dr., explorations by, vi, 330.
- Mont Cenis railway, ill., i, 422.
- Mont de Piété, proposal concerning, ix, 344.
- Montefiore, Sir Moses Haim, obit. and portrait, x, 606.
- Monteith, J., obit., xv, 655.
- Montenegro, ii, 532; iii, 586; iv, 468; v, 542; viii, 548; revolts in, viii, 549; map, i, 754; articles on, in the Berlin Treaty, iii, 257; ix, 536; forts built in, ix, 537; frontier of, 764; boundary, xii, 774; xiii, 569; xiv, 572.
- Monterey, battle of, x, 421.
- Montero, Gen., vi, 738; viii, 64.
- Montevideo Breakwater, x, 772.
- Montgomery, capitol at, illustration, ii, 12; xiii, 167.
- Montgomery, H. C., obit., iii, 659.
- Montpelier, xiii, 168; xvii, 114; chartered, xx, 753.
- Montpensier, Due de, obit., xv, 684.
- Montreal, carnival and ice-palace at, ix, 676; growth of, xii, 124; art exhibition at, 280; illustrations, iii, 248; xii, 131; charter remodeled, xiv, 723.
- Monts, Count, sketch, xiv, 666.
- Montsoia, ix, 112, 113, 114; x, 85, 87.
- Montzambert, Col., x, 125 *et seq.*
- Monuments, xix, 281; battle, xix, 233; in North Carolina, xix, 552; xx, 555; preservation, xiii, 24; in New York city, xviii, 527; xix, 541; xx, 550; in Virginia, xix, 769; in Pennsylvania, xx, 642.
- Moody, Granville, obit., xii, 599.
- Moon, the crater Plato, viii, 21; diameter of, viii, 21; heat of, xi, 55; recent observation and study of, 578; illustrations, 579, 581, 584, 586, 587, 588; influence of, on weather, xii, 487; xvii, 26; xviii, 42.
- Moore, Albert, obit., xviii, 584.
- Moore, B. F., obit., iii, 641.
- Moore, D. D. T., obit., xvii, 560.
- Moore, G. E., obit., xx, 583.
- Moore, George, obit., i, 639.
- Moore, G. H., obit., xvii, 560.
- Moore, Henry, obit., xx, 614.
- Moore, James S., obit., xvii, 560.
- Moore, Joseph G., obit., i, 621.
- Moore, Orren C., obit., xviii, 562.
- Moore, S. P., sketch, xiv, 642.
- Moore, T., invention by, vi, 95.
- Moore, Tredwell, obit., i, 621.
- Moore-Greenhow Case, the, x, 272.
- Mora, M., ix, 246.
- Mora indemnity, the, xx, 224.
- Moraine, terminal, of the second glacial epoch, x, 404.
- Moran, Archbishop, x, 455.
- Moran, Benjamin, obit., xi, 692.
- Moran, Percy, xi, 346.
- Moravia, Socialist riot in, x, 72.
- Moravians, i, 569; ii, 532; iii, 587; iv, 649; vi, 611; ix, 537; xiii, 570; xiv, 572; xix, 498; xx, 503; house of the sisterhood, xix, 573.
- Morazan, harbor of, xiv, 409.
- Mordecai, B., obit., xviii, 562.
- Morehouse, A. P., obit., xvi, 643.
- Morelli, Giovanni, obit., xvi, 678.
- Moreno, in Patagonia, ii, 335.
- Moreno, J. I., obit., ix, 620.
- Moresby, Sir F., obit., ii, 607.
- Moresnelt, partition of, xv, 70.
- Morey, F., obit., xv, 656.
- Morey Letter, the, v, 576.
- Morford, J. C., sketch, xiii, 646.
- Morgan, Campbell de, obit., i, 639.
- Morgan, D. H., statue of, vi, 815.
- Morgan, E. D., sketch, viii, 552.
- Morgan, G. D., obit., xvi, 643.
- Morgan, G. W., obit., xviii, 562.
- Morgan, G. W., obit., xvii, 561.
- Morgan, J., nominated, xiii, 847.
- Morgan, J. S., obit., xv, 656.
- Morgan, Lewis H., sketch, vi, 613.
- Morgan, Maria, obit., xvii, 561.
- Morgan, Mary J., art collection of, xi, 347.
- Morgan, M. S., obit., xv, 656.
- Morgan, W. F., sketch, xiii, 646.
- Moriarty, Bishop D., obit., ii, 607.
- Moriarty, Dr., obit., xii, 718.



- Morier, D., obit., ii, 607.  
 Morison, J. C., sketch, xiii, 666.  
 Morisot, Berthe, obit., xx, 614.  
 Morley, Edward Williams, port., xx, 32.  
 Morley, E. W., xii, 488.  
 Morley, Henry, obit., xix, 618.  
 Morley, Samuel, obit., x, 723.  
 Morley, Thomas, obit., xii, 599.  
 Mormonism, xiv, 415, 817; xv, 21, 263, 424; church property, xvi, 853; xvii, 773.  
 Mormon suit, decision of a, xix, 495.  
 Mormons, the, emigration of, iv, 837; President Hayes on, v, 642; missions of, vi, 859; monogamic, vi, 860; viii, 548; in Mexico, x, 590; in Arizona, ix, 41; x, 42, 43; in Idaho, ix, 400; xii, 373; xviii, 396, 536; amnesty to, xix, 761. See Polygamy.  
 Mormon temple, the first, xviii, 745; the new, 746.  
 Morocco, i, 569; v, 545; persecution of Jews in, 546; trade of, viii, 386; ix, 339; xiii, 571; xiv, 574; xv, 567; xvi, 541; xvii, 477; sultan of, xix, 499.  
 Morocco, city of, illustration, i, 570.  
 Moroko, S., Chief, ix, 115; x, 84.  
 Morot, Aimé, x, 363.  
 Morphine, lactate of, xi, 291.  
 Morphy, Paul, obit., ix, 610.  
 Morrill, Anson P., obit., xii, 599.  
 Morrill, Lot M., sketches, i, 571; viii, 553.  
 Morris, Charles D., obit., xi, 692.  
 Morris, E., obit., xvi, 643.  
 Morris, J., experiments, viii, 524.  
 Morris, John Gottlieb, obit., xx, 583.  
 Morris, L. B., nominated, xiii, 240; obit., xx, 584.  
 Morris, Philip R., x, 365.  
 Morris, Richard, obit., xix, 618.  
 Morris, W., designs of, viii, 616.  
 Morrison, John I., obit., vii, 640.  
 Morrison, M. J., observations by, xi, 540.  
 Morrison, Piteairn, obit., xii, 600.  
 Morrison, Robert F., obit., xii, 600.  
 Morrison, W. R., tariff bill, ix, 203.  
 Morrissey, John, obit., iii, 641.  
 Morrow, H. A., obit., xvi, 643.  
 Morse, Charles W., obit., xii, 600.  
 Morse, E. S., discovery by, vi, 453.  
 Morse, Judge, opinion by, x, 325.  
 Morse, J., invention, x, 614, 615.  
 Morse, Nathan B., obit., xi, 692.  
 Mortara, E., abduction, x, 606.  
 Mortemart, René de Rochechouart, Duc de, obit., xviii, 584.  
 Mortgages, farm, xv, 552; in Texas, 740.  
 Morton, Prof., observations, iii, 34.  
 Morton, John P., sketch, xiv, 642.  
 Morton, Levi Parsons, sketch and port., xiii, 576.  
 Morton, Louis M., obit., xviii, 563.  
 Morton, M., obit., xvi, 643.  
 Morton, Oliver P., sketch, ii, 533.  
 Mosaics, Athenian, xi, 34.  
 Moscow, illustrations, ii, 687.  
 Moseow, Idaho, xvi, 161.  
 Moseley, Henry N., obit., xvi, 678.  
 Mosenthal, S. H., obit., ii, 607.  
 Moser, H., xi, 376.  
 Moser, J., experiments, vi, 257.  
 Moses, monuments of the time of, vii, 258.  
 Moses, Chief Justice, obit., ii, 585.  
 Moshetto, Chief, i, 89.  
 Mosler, Henry, prize to, x, 367.  
 Mosques, illustrations of; of Mehmet Ali, i, 247; ruined, 247; grand, of Ispahan, 660.  
 Mosquito territory, the, xiv, 610.  
 Moss, J. C., obit., xvii, 561.  
 Moss, L., observations, iv, 53.  
 Mosso, Dr., experiments, xii, 676.  
 Motors, experiments in, i, 515, 516.  
 Mott, A. B., sketch, xiv, 642.  
 Mott, A. J., observations, viii, 26.  
 Mott, H. A., experiments by, iii, 86; vii, 663.  
 Mott, Lucretia, sketch, v, 547.  
 Mott, J. P., obit., xix, 589.  
 Motte, Henry Paul, xi, 343.  
 Motte, Janvier de la, v, 285.  
 Mouchot, solar boiler of, iii, 722; experiments by, vi, 251.  
 Moufang, C., obit., xv, 684.  
 Mougél Bey, obit., xv, 684.  
 Mould, Jacob W., obit., xi, 692.  
 Moule, Rev. Mr., ix, 722.  
 Moulton, C. W., sketch, xiii, 646.  
 Mound-builders, funeral rites of certain, xii, 16; works, xiii, 22, 23; xiv, 17; xvi, 12; civilization of, xvii, 11; identity of, xx, 20.  
 Mound of the statue, the, x, 35.  
 Mounds, exploration of. See Archaeology, illustration, ix, 15.  
 Mountain, moving, xix, 635.  
 Mountain railways—Mts. Washington, Rigi, Pilatus, xii, 258; illustration, view of Mont Cenis, i, 422; xiv, 295.  
 Mountains, formation of, illustrations, iv, 380, 381, 382.  
 Mountains, of Central Asia, ii, 325, 326; iii, 359, 360; iv, 399, 400; in Africa, ii, 328; in Alaska, xx, 10; altitude of high, vi, 332; exploration, ix, 538; highest, vi, 322; ix, 349, 543; formation of, see Formation of Mountains.  
 Mountain sickness, ix, 541, 542, 543, 544.  
 Mount Brace, highest point in Connecticut, ii, 227.  
 Mount Chester A. Arthur, ix, 34.  
 Mount Hood, xvii, 613.  
 Mount Nanda Devi, ix, 543.  
 Mount Owen Stanley, xii, 312.  
 Mountpleasant, C. obit., xvii, 561.  
 Mount Ptoum, temple at, x, 37.  
 Mount Schoda, xii, 313.  
 Mount-Temple, W. F. Cowper-Temple, sketch, xiii, 666.  
 Mount Vernon, illustration, ii, 759.  
 Mount Vernon, N. Y., xvii, 115.  
 Mount Wollaston, lost whaler, vi, 323.  
 Mount Yule, xii, 312.  
 Moustier, explorations by, v, 290.  
 Mowbray, invention by, x, 345.  
 Mowbray, G. W., obit., xvi, 644.  
 Mowett, James A., obit., i, 621.  
 Moya, Gen. C. N. de, xii, 733.  
 Moyano, Lieut. C., xii, 315.  
 Moynahan, C., obit., iv, 694.  
 Mozaffer-ed-Din, Amcer of Bokhara, x, 98; obit., x, 665.  
 Mozley, J. B., obit., iii, 659.  
 Mozley, Thomas, obit., xviii, 584.  
 Msiri, Chief, x, 393, 394.  
 Mtesa, Emperor of Uganda, obit., viii, 602; his conversion through Stanley and his death, x, 316.  
 Muhlenberg, Rev. W. A., sketch, ii, 535.  
 Muhlenberg centenary, the, xii, 450; taxes, xviii, 425.  
 Muir, Pattison, on the nature of the elements, iii, 91.  
 Muirhead, J., obit., x, 665.  
 Mukanes, "high places," ix, 27.  
 Mukhtar Pasha, sketch, ii, 535; iv, 649.  
 Mulet law, the, xix, 379; xx, 368.  
 Mulder, G. J., obit., v, 601.  
 Muley Hassan, obit., xix, 618.  
 Mulford, Elisha, obit., x, 653.  
 Mulford, J. L., sketch, xiii, 647.  
 Mulford, P., obit., xvi, 644.  
 Mullaney, P. J., obit., xviii, 563.  
 Mullany, J. R. M., obit., xii, 600.  
 Mulledy, Joseph, death of, v, 659.  
 Müller, C. L., obit., xvii, 600.  
 Müller, J., obit., iii, 659.  
 Müller, John F., obit., xi, 723.  
 Müller, Karl Ottfried, xii, 22.  
 Müller, R., xii, 492.  
 Mulready, Mr., xi, 345.  
 Mumford, Thomas J., obit., ii, 585.  
 Mummies, xi, 29; discovery of, vii, 261; xi, 32.  
 Muncie, xiii, 168.  
 Mundy, Baron Jaromir, obit., xix, 618.  
 Munger, G. G., obit., xx, 584.  
 Municipalities, indebtedness of, iii, 680, 685, 772; vi, 832; liability of, for damages in riots, iv, 769; New Jersey laws on, v, 562; Florida act on dissolution of, vi, 297.  
 Munipore, Chunder Kirtee Sing, obit., xi, 723.  
 Munk, experiments by, ix, 653.  
 Munkacsy, Mihail, x, 359, 367; xi, 344; xii, 279.  
 Munro, Norman L., obit., xix, 589.  
 Munster, Count, x, 419.  
 Munster, bank of, failure, x, 455.  
 Munster, William F., obit., ii, 607.  
 Muntz, M. A., experiments by, iii, 83; vii, 88; viii, 120; x, 154.  
 Munzinger Bey, i, 3; ii, 2.  
 Murad V, attempt to bar from succession, i, 2; sketch, i, 774.  
 Murat, Prince, obit., iii, 659.  
 Murat, Princess, obit., iv, 701.  
 Murchison, C., sketch, iv, 650.  
 Murchison letter, the, xiii, 269.  
 Murdock, J. E., obit., xviii, 563.  
 Murdock, S. K., obit., xvi, 644.  
 Murghab River, view on, x, 17; cave-dwellings on, 38.  
 Murillo, sale of pictures by, x, 361.  
 Murphy, Lady B., obit., vi, 794.  
 Murphy, Col., x, 424.  
 Murphy, J. F., x, 367; xii, 279.  
 Murphy, John K., obit., i, 621.  
 Murray, A., obit., x, 665.  
 Murray, Sir C. A., obit., xx, 614.  
 Murray, John, obit., xvii, 600.  
 Murska, Ilma di, sketch, xiv, 666.  
 Muscat, revolt in, xx, 728.  
 Muscatine, Iowa, xviii, 165.  
 Muscles, observations on, vi, 753; xi, 761; muscular sense, xii, 672; muscular system, x, 695.  
 Muscular system, the, xiii, 694; xiv, 708; xv, 726; xvi, 741; xviii, 634; xx, 661.  
 Musgrave, Sir A., ix, 60; obit., xiii, 666.  
 Mushketof, explorations, iii, 359.  
 Mushrooms and Toadstools, xi, 590; illustrations, 590, 592, 593; bibliography of, 595.

- Music, i, 571; Tonie Sol-fa, ix, 545; recent progress in, xi, 596; xii, 519; in 1888, xiii, 578; in 1889, xiv, 575; in 1890, xv, 568; instrumental, in churches, ix, 669. See Churches.
- Music-boxes, x, 608; illustrations, 608, 609, 610.
- Musical bed, a, x, 618.
- Musical Instruments, automatic, x, 607; illustrations, 608, 609, 610, 612, 615, 616, 617, 619, 620, 621.
- Musical sand, ix, 45; x, 608.
- Musical telephone, iii, 588.
- Musicians, eminent, xi, 596-602; lists of recent works of, 597-602; xii, 519-523.
- Muskegon, Mich., xviii, 166.
- Musk-ox, illustration, iii, 353.
- Muspratt, James, obit., xi, 723.
- Musset, Paul de, obit., v, 601.
- Mussey, R. D., obit., xvii, 562.
- Mutiny, Japanese, iii, 462.
- Mutkuroff, Sara, obit., xvi, 678.
- Muts-Hito, Mikado, iii, 460.
- Muybridge, electro-photograph of, iii, 723.
- Muzaffer-ed-Din, Prince of Persia, x, 686.
- Muzzey, A. B., obit., xvii, 562.
- Mycenæ, Schliemann's explorations in, i, 28; tombs at, xiii, 27.
- Myer, Albert J., sketch, v, 548.
- Myers, A. C., sketch, xiv, 642.
- Myrtol, xi, 291.
- Myopia. See Eye-sight, vi, 271.
- Mysore, native rule in, vi, 422.
- Nabonidus, cylinder of, ix, 18.
- Nachtigal, G., ix, 364, 365; x, 119, 120, 122; his death, 395; obit., x, 665.
- Naganab, obit., xix, 589.
- Nagas, of India, revolt of, iv, 494; v, 388.
- Nagasaki, illustration, ii, 413.
- Nageli, experiments by, iv, 36; x, 695.
- Nagle, Henry Morris, obit., xi, 692.
- Naib Salar, x, 9.
- Nain Sing, explorations of, i, 329.
- Nairne, C. M., obit., vii, 641.
- Nakamura, Masanao, obit., xvi, 678.
- Names of Places, xi, 382.
- Nampa, image found at, xiv, 18.
- Nance, Albinus, iii, 594.
- Nanda Devi, Mt., ix, 543.
- Naphtha, in Russia, viii, 701; xii, 367.
- Naphtha motors, xii, 524.
- Naphthalin, ix, 272.
- Napier, Lord, obit., xv, 685.
- Napier, Maj., x, 4.
- Napoleon III, xi, 482.
- Napoleon, Jerome, portrait, vii, 321; obit. and port., xvi, 679.
- Naransin, ix, 18.
- Nares, Sir G., voyage of, iii, 352.
- Narragansett, loss of the, v, 580.
- Narragansett Indians, tribal relations abolished, v, 654.
- Narrey, Charles, obit., xvii, 600.
- Nashua, N. H., xvi, 161.
- Nashville, Tenn., xi, 175; battle, x, 428; illustration, i, 744; centennial of admission, xix, 737; water, xix, 777.
- Nasmyth, J., observations, iii, 35; obit., xv, 685.
- Nason, H. B., obit., xx, 584.
- Natal, colony of, v, 80; vii, 84; ix, 111; xii, 122; xiv, 104; xv, 93; xvi, 103; xvii, 75; xviii, 122; xix, 102; xx, 110.
- Natalie, expulsion of, xvi, 790.
- Natches, Miss., xvii, 115.
- Natchez-on-the-Hill, ill., ii, 526.
- National Academy of Design. See under Fine Arts.
- National Academy of Sciences, xv, 572; xvi, 543; xvii, 480; xviii, 502; xix, 502; xx, 503.
- National Bank taxation, x, 621.
- National Banks, xii, 783.
- National Guard, xx, 504.
- National League for Protection of American Institutions, xv, 579.
- National league, proclamation of the, xii, 341.
- National party, the, iii, 806.
- National Quarantine, xvii, 217.
- Nationalities, conflicts of, in Austria, v, 45, 46, 369; vi, 48.
- Nations, intervention among. See Non-Intervention, vii, 618.
- Natler, Heinrich, obit., xvii, 600.
- Natural gas, in Kentucky, xviii, 425. See Gas.
- Natural history, ill., vi, 409.
- Natural selection, xii, 668.
- Naturalization in Brazil, viii, 68.
- Naturalization in United States, its validity, vi, 613; cases of Buzzi and others, vi, 613 *et seq.*; when fraudulent, vi, 615; President Grant on, i, 683; case of the Bersseliers, iv, 837.
- Naturalized Americans, in Germany, iii, 245; rights of, x, 303.
- Naucratis, x, 33; illustration, 34; xi, 27.
- Nautilus, canoe, ill., ix, 108.
- Navajos, the, xii, 545.
- Naval apparatus, new, xv, 580.
- Naval catastrophe in Samoa, xiv, 758.
- Naval observatory, the, ix, 47.
- Naval Ram, the, xviii, 283.
- Naval station, new, xvi, 863.
- Navarre, dissatisfaction in, i, 730.
- Navassa, island of, ix, 394.
- Navies—of Europe, vii, 568; German, viii, 392; Italian, viii, 449; English and French, ix, 370; illustrations, vii, 568, 569, 574, 579, 580; of United States, i, 574; ii, 536; iii, 589; vi, 619; vii, 582; President Arthur on, vi, 781; viii, 162; ix, 212.
- Navigation, steering indicator for, i, 518; sounding instruments, i, 518; iii, 725; bathometer, i, 519; acts on, in Chili, iii, 95; in Germany, v, 319; the Narragansett and Seawanhaka disasters, v, 580; fees to Spanish consuls, viii, 157; unseaworthy vessels, 418; bureau of, ix, 203; signals, life-saving appliances, etc., see Collisions, viii, 136; of the United States, xvii, 158; xviii, 779; amphibious, xx, 250. See also Commerce and Navigation, viii, 145; xi, 195.
- Navigators' Islands. See Samoa.
- Naville, Edouard, ix, 19; x, 35, 36.
- Navy of Colombia, v, 114.
- Navy of the United States, xiii, 787; xiv, 805, 809; xvi, 543; xvii, 481.
- Navy-Yards, vii, 583.
- Nazarenes, xiii, 584.
- Neafie, A. J., obit., xvii, 562.
- Neal, John, sketch, i, 574.
- Neal, John R., sketch, xiv, 642.
- Neale, S. A., obit., v, 594.
- Neaves, Lord C., obit., i, 639.
- Nebirah (Naucratis), x, 33.
- Nebo, height of the ridge of, ix, 28.
- Nebo of Borsippa, god of learning, ix, 18.
- Nebobaladan, ix, 18.
- Nebraska, in each volume; growth shown by census returns, i, 575; election of Gov. Garber, 578; railroad lands, 578; election of Senator Saunders, ii, 537; geological character, 538; soil and climate, 538, 539; election of Gov. Nance, iii, 594; re-election, v, 552; grasshoppers, iv, 653; case of removal of the Ponca Indians, 653, 654; need of militia, v, 552; vi, 622; fish-culture, v, 552; vii, 586; election of Senator Van Wick, vi, 621; growth of population, 621; x, 623; election of Gov. Dawes, vii, 587; proposed constitutional amendment, 588; election of Senator Manderson, viii, 554; railroads, new counties, ix, 553; vi, 603; new capitol, xi, 603; election of Governor Thayer, xi, 604; election of Senator Paddock, xii, 526; population, xv, 582; contest over State officers, xvi, 559; impeachment of State officers, xviii, 504; depository law, 505.
- Nebraska City, xvii, 115; bridge at, xiii, 298.
- Nebuchadnezzar, inscriptions, ix, 18, 19.
- Nebula in Orion, xiv, 50; in Andromeda, xiv, 51; xv, 42.
- Nebule, i, 50; xx, 60; star changed to, ii, 48; origin of, iii, 38; discovery of planetary, vii, 41; new, x, 53; xi, 56; xvi, 53; photographic, xix, 53.
- Nebular line, xvi, 51.
- Neby Mendeh, mound of, ix, 28.
- Necker Island, xix, 347.
- Necropolis, at Carmona, xii, 23.
- Needham, E. P., invention by, x, 617; sketch, ix, 642.
- Negrete, Gen., iv, 615.
- Négrier, Gen., x, 24 *et seq.*
- Negrees, American, colonization of, xx, 489.
- Negro exodus, Georgia, xx, 313.
- Negro persecution, xix, 4.
- Negroes, admitted to the bar in California, iii, 71; trial of, iii, 825; intimidation in Arkansas, iv, 40; intellectual status of, iv, 41; as jurors, iv, 845, 847; v, 424, 703; condition in Louisiana, v, 481; university for, v, 484; progress of, v, 595; taxes and schools of, in Georgia, viii, 389; conventions of, iv, 45; vii, 448, 721; viii, 489; votes of, in presbytery, vii, 702; civil rights of, vii, 459; viii, 129; marriage with whites, see Marriage; exodus of, see Exodus, iv, 354; civil rights of, in New Jersey, ix, 571; property of, at the South, x, 411; education of, in Virginia, x, 778; emigrations of, xi, 571.
- Negus, the, xi, 1; xii, 1.
- Negus, Johannis, killed, xiv, 1.



- Neher, Michael, sketch, 1, 579.  
 Neill, Edward D., obit., xviii, 563.  
 Neilson, Joseph, sketch, xiii, 647.  
 Nelson, Dr., xii, 101.  
 Nelson, H. A., obit., xvi, 644.  
 Nelson Mound in North Carolina, illustration, ix, 15.  
 Nepaul, Chinese influence in, iv, 143; conspiracy in, vii, 415; insurrection in, x, 497.  
 Nepokoitchitzky, A. A., sketch, ii, 539.  
 Neptune, xiv, 46; diameter of, xx, 56. And see the article on Astronomy in each volume.  
 Neraz, John Claudius, obit., xix, 589.  
 Neruda, Johann, obit., xvi, 680.  
 Nerve-force, transmission of, x, 689; theories of, xii, 671.  
 Nerves, degeneration of, xii, 671; action of alcohol on, 672.  
 Nervous diseases, ix, 554.  
 Nervous system, the, viii, 634; ix, 653, 749; x, 689; xi, 754; xii, 670; xiii, 689; xiv, 703; xv, 720; xvi, 738; xvii, 648.  
 Neolithic polishing stones, at Nemours, xii, 24.  
 Nepal, insurrection at, x, 497; xii, 583.  
 Nephrotomy, viii, 751.  
 Neptune, the, x, 134.  
 Nerses, ix, 764; sketch, 280; obit., ix, 620.  
 Nervous system, xviii, 632.  
 Nesselrode, Count, x, 1.  
 Nessler, Victor, xii, 521.  
 Nesterowsky, M., ix, 654.  
 Netanebo II, x, 36.  
 Netherlands, in every volume; views, i, 583; ii, 542; contest on military bills, i, 581, 582; cabinet crisis, 581, 582; adjustment of difference with Venezuela, 582; appointment of Beyen as war minister, 582; electoral laws, 582, 583; vi, 626; vii, 557; elementary education and religious instruction, i, 583; ii, 542; iii, 597; vii, 590; opening of the North Sea ship-canal to Amsterdam, i, 583; abolition of the annual kirmess or fair, 584; six hundredth anniversary of Amsterdam, 584; dissatisfaction with the Crown Prince, 584; the war in Acheen, see Acheen, War in; new cabinet, M. Kappeyne, chief, ii, 542; new cabinet, iv, 657; marriage of the King, 657; new penal code, v, 555; vi, 627; statue of Spinoza unveiled, v, 555; increase of revenues, vi, 625 conference for regulation of fisheries, 625; honors to Gen. van der Heyden for success in Acheen, 625; consequences of the silver crisis, 626; ix, 560; sympathy with the Transvaal rebellion, vi, 626; claims in Bornco, 626; resignation of Minister Vissering and other ministers, 626; new army law, 627; canal improvement, 627; vii, 557; question of exacting oaths from free-thinkers, vi, 627; serfdom in Java, vii, 589; cabinet crisis, viii, 557; new loan and fishery treaty, 557; question of revision of the constitution, 557; the colonies, ix, 556; affair of the crew of the English ship Nisero, held captive in Acheen, 558; x, 626; death of the Crown Prince, Alexander, ix, 559, 614; the succession to the throne, 559; new loan, bill to reorganize the State lottery, 559, 560; socialist demonstrations, x, 625; riots in Amsterdam, xi, 607; xii, 529; dissolution of the chamber and new states-general, xi, 606; crisis in the East Indian colonies, 608; extension of the franchise, xii, 529; claims to New Guinea, x, 678, 679; taxation reforms, xvii, 487.  
 Nettleship, Henry, obit., xviii, 584.  
 Nettleship, Richard Lewis, obit., xvii, 601.  
 Net-making, ix, 560.  
 Neumann, G. A., obit., xi, 693.  
 Neumoegen, B., obit., xx, 584.  
 Neuralgia, remedy for, x, 300.  
 Neuville, Alphonse de, obit., x, 665; pictures by, xi, 344; xii, 279.  
 Nevada, in every volume; fish commissioner, iii, 601; railroad extortion, 601; iv, 657; disastrous flood, iii, 601; completion of the Sutro Tunnel, iv, 658; the nut-pine, 658; Nevada Central Railroad opened, v, 556; Bodie Railroad, vi, 629; depreciation of property, vi, 627; mica deposits, 629; constitutional amendments, ix, 563; xi, 609; xii, 531; agriculture and grazing, 564; x, 627; xi, 611; xii, 532; Indians, x, 627; irrigation, xi, 609; xii, 532; railroads, xii, 531; State lands, 532; Comstock, Consolidated California, and other mines, 531; population, xv, 591; State lands, xvi, 566; constitutional amendments, xviii, 508.  
 Nevin, A., obit., xv, 656.  
 Nevin, John W., obit., xi, 693.  
 Nevin, W. M., obit., xvii, 562.  
 New, John H., obit., iv, 694.  
 New Albany, Ind., xix, 140.  
 Newark, N. J., growth of, xi, 176; water, xix, 777.  
 Newark, O., xv, 138.  
 New Bedford, growth of, xi, 176; view of, iii, 524.  
 Newberry, John Stoughton, ix, 46; obit., xii, 601.  
 Newberry, J. S., xi, 538; obit. and port., xvii, 562.  
 Newberry, Spencer B., ix, 476.  
 New Britain, xiv, 154.  
 Newbrough, John B., writes Oahspe, xvi, 602.  
 New Brunswick, viii, 559; xi, 612; xii, 532; xiii, 592; xiv, 586; xv, 592; xvi, 566; xvii, 491; xviii, 509; xx, 528; liquor-license law, xii, 532.  
 New Brunswick, N. J., xix, 140.  
 Newburg, celebration at, viii, 577.  
 Newburgh, xiv, 155.  
 Newburyport, view of, ii, 491; growth of, xvi, 161.  
 New Caledonia, convicts, ix, 342, 343; crime, 57; xv, 335.  
 New Church, the, vii, 630, x, 627. See New Jerusalem Church.  
 Newcomb, S., ix, 49; xi, 48.  
 Newcomb, W. W., obit., ii, 585.  
 Newcomb, Wesley, obit., xvii, 563.  
 Newdegate, Charles Newdegate, obit., xii, 634.  
 Newell, M. A., obit., xviii, 563.  
 Newfoundland, vii, 218; x, 628; xix, 513; xx, 529; black Monday in, xx, 529; financial crisis in, xix, 514; religious troubles in, x, 629; xi, 613; fisheries, 614; French shore question, 406, 614, 615; xii, 533; aid for the unemployed in, xi, 613; xv, 593; xviii, 510; map of, xv, 594; xvi, 567; xvii, 493; xviii, 510.  
 New Glasgow, N. S., xv, 138.  
 New Guinea, British, xx, 70.  
 New Guinea, explorations in, ii, 335; iii, 364, 365; iv, 408; xi, 381; xii, 311, 312; claims to, viii, 31; annexation of southern, x, 58; German and English claims in, ix, 365; xii, 647; massacre by natives, 48; xiv, 57. See also Papua.  
 Newhall, James R., obit., xviii, 563.  
 New Hampshire, in every volume; views in, i, 589, 591; constitutional amendments, i, 590, 591; raised map at the State House, ii, 548; financial embarrassment at Dartmouth College, iii, 605; geological survey, 606; bill to abolish capital punishment, iv, 659; leather-board manufacture, 662; railroads, v, 560, 561; vi, 634; viii, 560; xi, 618; fish-culture, v, 561; xi, 621; xii, 536; question of senatorial election, vi, 631, 632; increase of divorces, viii, 562; longevity, statistics, ix, 568; boundary between Massachusetts and, xi, 622; granite, soapstone, mica, gold, silver, and copper, xi, 622; Constitutional Convention, xii, 534; population, xv, 597; election dispute, 600; State library, xvii, 497; mortgage indebtedness, xviii, 511; Law and Order League, xx, 533; State library, xx, 533.  
 New Haven, growth of, xi, 176; illustration, ii, 222; water, xix, 777.  
 New Hebrides, the, occupied by France, xi, 60; sketch of, xii, 537; map, 538; the French occupation, 539; convention between the British and French Governments, 539; xiii, 62.  
 New Jersey, in each volume; constitutional amendments, i, 592; iv, 663; v, 562; legislation on courts, ii, 550; public institutions, 551, 552; v, 566, 567; vi, 637; xi, 626; convention of colored men, ii, 554; election of Gov. McClellan, 556; grants of lands under tide-water, 557; railroad tunnels, 557; earthquake, 557; education, iii, 612; v, 563; industrial, iv, 663; v, 564; convict-labor, iv, 665; Sunday laws, 667; improvement of militia, 668; fish-culture, 668; vii, 598; railroad question, iv, 669; geological survey, 670; special tax commission, v, 562; commission on general municipal laws, 562; food-adulteration, vi, 639; summer resorts, 638; taxation of cor-

- porations, ix, 569; x, 631; xii, 623; oyster-lands, ix, 571; child-labor, ix, 571; compulsory education act, the, xi, 625; election of Senator Blodgett, xii, 540; population, xv, 602; abandoned farms, xvi, 575; State survey, xvii, 500; judicial decisions, 501; xviii, 516; the Palisades, xx, 537.
- New Jerusalem Church, i, 595; ii, 557; iii, 614; viii, 564; x, 627; xi, 612; xii, 543; xiii, 599; xv, 605. See also New Church.
- New London, Conn., view of, iv, 298; growth of, xvi, 162.
- Newman, J. H., sketch and port., xv, 605.
- New Mexico, ii, 558; viii, 565; ix, 572; x, 632; xi, 628; xii, 545; xix, 523; xx, 538; irrigation, xx, 539; view in, ii, 559; Indians in, ii, 558; viii, 566; raids of, x, 633; xi, 630; xii, 545; railroads, telegraphs, and newspapers, ii, 559; viii, 565; xii, 545; disorder in, iii, 31; land-system, viii, 566; resources, viii, 565; xi, 630; industries, ix, 572; x, 633; land-titles, x, 633; xi, 631; xii, 546; population, x, 634; cultivation of alfalfa, or California clover, xi, 631; droughts and floods, xi, 630; Indian relics in, ix, 17, x, 632; xiii, 600; xiv, 594; xv, 608; xvi, 575; xvii, 503; xviii, 517.
- New Norcia, mission, x, 66.
- New Orleans, debt of, v, 480; vii, 483; Exposition, ix, 573; illustrations, i, 483; ix, 575, 577; xiii, 168; massacre in, xvi, 833; water, xix, 777.
- Newport, Ky., growth of, xii, 125.
- Newport, R. I., view of, i, 701; old mill, ii, 675; xvi, 163.
- New processes, xviii, 136.
- New race discovered in Egypt, iii, xx, 23.
- Newson, T. M., obit., xviii, 563.
- New South Wales, x, 60, 63; xi, 61, 62; xiv, 53; xv, 46; xvi, 61; xvii, 43; xviii, 57; xix, 55; xx, 66. See under Australia.
- Newspapers, xi, 632; improvements in journalism, 633; places of publication, 633; subsidiary industries, 634; press associations, 635; Russian, ix, 708.
- New States, xix, 224.
- New substances, xii, 670; xviii, 133; xix, 111.
- New Testament, revision, vi, 639; x, 95.
- Newton, Henry, obit., ii, 585.
- Newton, H. A., observations by, iii, 36, 37.
- Newton, Henry J., ix, 651; obit., xx, 584.
- Newton, John, obit. and port., xx, 584.
- Newton, Mass., xv, 138.
- Newton, Sir Charles T., obit., xix, 619.
- New York City, viii, 577; xx, 546; district annexed in 1895, xx, 551; monuments, xx, 551; defalcations, 578; new aqueduct, 567, 579; ix, 590, x, 640; xii, 535; East River Bridge opening, viii, 580; amendment of charter, viii, 567; elevated railroads, viii, 568-580; new parks, 580; city poli-
- tics, 581; bills on, vetoed, ii, 567; street-cleaning bill, vi, 651; removal of police commissioners, vi, 659; consolidation of elevated railroads, vi, 659; surface railroads, ix, 591; x, 641; trials of aldermen for taking bribes, xi, 649; xii, 555; power of appointment, x, 640; charges of malfeasance, ix, 588; x, 641; Statue of Liberty, 642; xi, 649; labor party, xi, 648; libraries, xi, 649, 651; illustrations, i, 604; ii, 565, 567, 569; xi, 650; illustrations of the work on the Croton Aqueduct, xii, 556, 557, 559, 560; recent growth of the city, xi, 177; xiii, 610; xiv, 601; xv, 615; xvi, 585; xvii, 517; xviii, 523; xix, 534; water, xix, 777.
- New York Harbor, improvements in, v, 250.
- New York State, in every volume; equalization of assessments, i, 597; concerning testimony of husbands and wives, 597; new Capitol, 599; iv, 671; vii, 614; viii, 575; constitutional amendments, 605; ii, 568; iv, 681; v, 576; vii, 601; burning of Brooklyn Theatre, i, 606; sketch of Gov. Robinson, 606; bill for sale of lateral canals, ii, 567; apportionment of members of legislature, iii, 614; iv, 671; codification of laws, iii, 615; question of maintaining canals, 616; vi, 651; pipe-line companies, iii, 618; married women may execute a power of attorney, 619; coal and railroad combination, 619; fish-culture, 620; woman-suffrage convention, 621; constitutionality of civil-damages act, 625; election of Senator Conkling, iv, 671; state charities, 672; v, 572; tramp act, iv, 675; pluralism, 675; award of damages for false imprisonment, 675; common-school system, 677; railroad freight discrimination, 678; revision of assessment laws, v, 569; vi, 650; taxation of stock of national banks, v, 570; Hudson River Tunnel, 580; factions of the Republican party, vi, 643; resignation of senators, 644; election of successors, 646; sketches of Lapham and Miller, 648; charge of bribery, 648; viii, 577; railroad commission, vi, 651; vii, 599; viii, 569; bill for preventing telegraph consolidation, vi, 651; emigration commission, vi, 651; anti-monopoly league, 652; elevated-railroad bills, vii, 600; liability for damages, vii, 616; five-cent-fare bill, viii, 568; investigations, vii, 602; election of Gov. Cleveland, 610; sketch and portrait, 611; political assessments, 614; viii, 566; decision on obligations of railroad companies, vii, 614; act regulating primary elections, viii, 567; civil-service, commissioners, 567; x, 639; law amended, ix, 637; Adirondack forests, viii, 576; ix, 582; x, 635; telegraph suits, viii, 576; Newburg celebration, 577; acts affecting municipal admin-
- istration, ix, 580; x, 636; street railroads, ix, 581; prison labor, 582; x, 636; xi, 642; xii, 548; the Western House of Refuge, 582; David B. Hill, governor, 588; freedom-of-worship bill, x, 634; the census, 634; Niagara Falls reservation, 635; gas companies, 635; canal convention, xi, 643; capital punishment, xii, 548; insurance legislation, 552; population, xv, 611, and xvii, 511; State flower, xvi, 580; forests, 583, and xviii, 523; wealth, xvii, 505, and xviii, 519; constitutional convention, xix, 531; strikes, xx, 543.
- New Westminster, xvi, 164.
- New Zealand, native question in, vii, 45; see Maoris, the; government, etc., 46; land system, 46; viii, 37; ix, 55, 60; ix, 60, 66; xi, 65; mountains in, ix, 545; xii, 48; volcanic eruptions in, xi, 66; xiv, 608; xv, 49; xvi, 64; xvii, 46; xviii, 59; xix, 61; xx, 69.
- Nez Percé Indians, war with, ii, 39; removal of, ordered, iii, 28.
- Ngamiland, xv, 97; xvi, 104.
- Niagara Falls, scheme to transmit power from, vi, 253; xii, 561; xvii, 252; reservation, x, 635; electrical power at, xix, 543.
- Niagara Falls Park, commissioners appointed, viii, 570; restoration, x, 674; steps for a park on the Canadian side, x, 674; cantilever bridge, illustration, viii, 314.
- Niagara Falls, N. Y., xvii, 116.
- Nias, island of, xi, 482.
- Niblo, William, obit., iii, 642.
- Nicaragua, xx, 552; trouble with Germany, iii, 386; Mosquito territory, vi, 661; new constitution, 661; canal, 662; vii, 618; viii, 581; ix, 592; x, 642; xi, 654; xii, 563; xiii, 614; xiv, 610; xv, 623; xvi, 594; xviii, 530; bill concerning, xx, 200; British occupation of Corinto, xx, 553; insurrections, vi, 663; volcano of Ometepe in eruption, vii, 582; proposed national railroad, ix, 592; lake steamer, xi, 653; eruption of Momotombo, 653; xiii, 613; xiv, 609; xv, 623; xvii, 526.
- Nicaraguan canal project, xx, 553.
- Nice, water-works of, x, 331; observatory, floating dome of, xi, 58.
- Nichol, John, obit., xix, 619.
- Nicholas I., of Montenegro, sketch, ii, 571; iii, 586.
- Nicholas, Grand Duke, sketch, ii, 571; obit., xvi, 680.
- Nicholls, Francis T., sketch, i, 493; government headed by, i, 455; nominated, xiii, 501.
- Nicholls, Rhoda H., xi, 346.
- Nichols, E. L., ix, 45.
- Nichols, Edward T., obit., xi, 693.
- Nichols, J. R., sketch, xiii, 647.
- Nichols, Samuel, obit., v, 594.
- Nichols, W. R., investigations by, v, 87; ix, 719; obit., xi, 693.
- Nicholson, A., obit., xviii, 589.
- Nicholson, James W. A., at Alexandria, vii, 248; obit., xii, 601.
- Nickel, xx, 470; magnetic properties of, i, 250; in iron-ores, ii, 501; determination of, ii, 502; ores in United States, vii, 532;



- processes with, viii, 522; in Nevada, ix, 476; steel, xii, 485; mines at Thio, 485; plating, x, 159; xii, 485; xv, 527; xviii, 484; in Canada, xviii, 267.
- Nicol, W. J., theory of, x, 149, 152.
- Nicolai, Baron, obit., xvi, 680.
- Nicolaides, R., ix, 654.
- Nicolar, Joseph, obit., xix, 590.
- Nicotera, Baron Giovanni, obit., xix, 619.
- Niederwald, plot, ix, 358.
- Niége, oleomargarine, vii, 661.
- Nieritz, K. G., sketch, i, 606.
- Niessl, G., observations, vii, 25.
- Nieuwenhuis, D., xi, 607; xii, 529.
- Nieuwerkerke, Comte de, obit., xvii, 601.
- Niger, the, exploration of, v, 290; trade on, x, 393.
- Nihilism in Russia, iii, 744; Melikoff's policy, vi, 795; methods, vi, 802; beginning, vii, 736; x, 718.
- Nihilists, iv, 681; disturbances by, iv, 776, 777; v, 662, 664; arrests and trial of, for the murder of the Czar, vi, 796; two sections of, vi, 797; proclamations of, vi, 798; attempt to assassinate Gen. Tcherevin, vi, 799; alleged plot of, in Switzerland, vi, 829; omitted from amnesty, viii, 706; arrests, viii, 709; ix, 711; in Russia, x, 718; trials, 719; conspiracies of, xiv, 753; expelled from Switzerland, 787. See Anarchism.
- Nikacheff, M., xii, 488.
- Nikolaieff, Col., x, 731.
- Nile, composition of waters, i, 99; project for reservoirs, xix, 255.
- Nile region, expedition to, xvii, 171.
- Nilson, S., discovery by, iv, 137; experiments, v, 87; viii, 117; x, 153; obit., viii, 603.
- Nina, Cardinal, obit., x, 713.
- Nisero affair, ix, 558.
- Nissel, Franz, obit., xviii, 584.
- Nitrate deposits in Chili, iii, 95; in Peru, iii, 688; vi, 276; viii, 124.
- Nitrate of soda, x, 164; whether contraband of war, 164.
- Nitric acid as a solvent, i, 98.
- Nitric-acid vapor, combustion in, xiv, 134.
- Nitric ferments, vi, 98.
- Nitrification, iii, 83; cause of, ix, 128, 157.
- Nitrites in water, test for, vii, 91; estimation of, ix, 123.
- Nitrogen, absorbed by plants, i, 92; quantitative estimation of, ix, 122, 127; x, 156; in the soil, 157; sources, in vegetation, xii, 111.
- Nitro-glycerine, x, 344.
- Nitrous oxide, effects of, xii, 679.
- Nitzsch, K. W., obit., v, 601.
- Niuchuang, capture of, xx, 135.
- Nixon, John T., sketch, xiv, 642.
- Noailles, J., Due de, obit., xx, 614.
- Noailles, P., obit., x, 666.
- Nobel, A., discovery by, iv, 131; invention, x, 344, 345.
- Noble, B. G., obit., xv, 656.
- Noble, John W., sketch and port., xiv, 804.
- Noble, Matthew, sketch, i, 607.
- Noble, Samuel, sketch, xiii, 647.
- Noble, W. H., obit., xix, 590.
- Noel, Hon. R. B. W., obit., xix, 619.
- Nöggerath, J., obit., ii, 607.
- Noire, Ludwig, sketch, xiv, 667.
- Noland defalcation, xv, 563; xvi, 535.
- Nollet and Van Malderen, invention by, iii, 275.
- No Man's Land (Japan), ix, 416; (Africa), iv, 129; (Asia), x, 4, 6.
- Nominations, Presidential. See United States, vols. i, v, and ix.
- Nonconformists, use of title "Rev." by, i, 25; burial of, in parish church-yards, iii, 13.
- Non-intervention among nations, the principle of, vii, 618; science of international law, 618-622; responsibility of nations, 623; intervention when asked for, 625; when nationality is involved, 625; union of states, 626; cases of succession and religion, 627; the Roman question, 627.
- Norbury, R., obit., xi, 724.
- Nordenskiöld, explorations of, i, 328; iii, 354; iv, 411; viii, 28; in Greenland, 384; x, 398.
- Nordman, J., obit., xii, 365.
- Nordquist, explorations of, iv, 412.
- Norfolk, Va., growth of, xi, 178; illustration, ii, 262.
- Norman, Helen, obit., xvi, 644.
- Normanby, Marquis, iv, 56; obit., xv, 685.
- Norodom, King of Cambodia, ix, 339; x, 118.
- Norquay, John, x, 568, 569; sketch, xiv, 667.
- Norris, A. W., sketch, xiii, 647.
- Norris, experiments by, viii, 633.
- Norristown, growth of, xi, 126.
- North, farthest point reached in the, illustration, ix, 31.
- North Bay, Ontario, xvi, 164.
- North Borneo Company, the, vi, 329.
- North Island, eruption on, xi, 66.
- Northbrook Island, vii, 334.
- Northbrook, Lord, sketches, i, 406; v, 580; x, 60, 310.
- North Carolina, in each volume; election of Gov. Z. B. Vance, i, 607; constitutional amendments, 608; v, 586; xii, 564; new State University, 609; v, 584; vii, 632; State charities, i, 610; Senator Ransom elected, 611; Western North Carolina railroad, 611; iii, 628; v, 580; election regulations, ii, 572; State debt, 573; iii, 626; iv, 687; v, 583; vii, 630; sketch of Judge W. N. H. Smith, ii, 574; iii, 630; penitentiary system, iii, 626; railroads, 627; v, 580; State archives, iii, 630; conveyance of real estate, iv, 635; tramp act, 636; school legislation, 638; vi, 664; election of Gov. Vance to the office of senator, iv, 639; sketch of Lieut.-Gov. Jarvis, 690; fish-culture, 690; natural features of the State, 690, 691; swamp lands, v, 584; colored industrial fairs, 585; Swepson embezzlement case, 585; extradition, 585; re-election of Gov. Jarvis, 586; vote on prohibition, vi, 665, 666; colored convention, 667; Indians, 669; population by counties, 669; railroad bonds, vii, 632; celebration of Mecklen-
- burg declaration of independence, 634; minerals, viii, 583; election of Gov. Seales, ix, 594; phosphates, xi, 656; oyster survey, 656; population, xv, 624, and xvi, 595; new seal of, xviii, 534; monuments, xx, 555.
- Northcote, Sir Stafford, portrait, x, 443; sketch, 448, illustration, suggesting the suspension of Parnell, vii, 204; ix, 371, 690.
- North Dakota, xiv, 612; xix, 553; xx, 556; population, xv, 626; prohibition, 628; land titles, xvi, 599; limitation of the Governor's authority, xviii, 535.
- Northeast Passage, search for, iv, 411; Nordenskiöld's conclusions as to, iv, 415.
- Northen, Adolf, obit., i, 639.
- Northend, C., obit., xx, 585.
- North, M., obit., xv, 685.
- North Pond case, xix, 518.
- North Sea Canal, x, 417.
- Northwest Passage, iii, 354, 355.
- Northwest Territories of Canada, xvii, 432; xviii, 536; xix, 557; xx, 558.
- Norton, Caroline. See Maxwell.
- Norton, C. B., obit., xvi, 644.
- Norton, G. S., obit., xvi, 645.
- Norton, George W., sketch, xiv, 643.
- Norton, Julius S., port., xviii, 736.
- Norton, W. A., obit., viii, 592.
- Norway. See Sweden.
- Norwich, xiv, 155.
- Nourmahal, the, yacht, x, 793.
- Nova Scotia, viii, 584; ix, 594; x, 643; xi, 657; xix, 557; xx, 559; education, viii, 585; financial depression, ix, 594; secession movement, xi, 657; xii, 565; resolutions regarding the union, 566; xiii, 619; xiv, 615; xv, 629; xvi, 600; xvii, 530; xviii, 536; view of a ship harbor, xix, 558.
- Novels, recent. See Literature, in every volume.
- Novgorod, illustration, ii, 688.
- Noxious insects and plant parasites, vi, 669.
- Noyes, Amos C., obit., v, 594.
- Noyes, E. F., obit., xv, 657.
- Noyes, John H., obit., xi, 694.
- Nubar Pasha, iv, 329, 330; vi, 237; ix, 285, 286, 292; x, 306; xiii, 291.
- Nubia, insurrection in, ix, 292.
- Nuguor Island, x, 139.
- Nulty, Bishop, x, 455.
- Numismatic discovery, ii, 411.
- Nuñez, Rafael, vi, 113; sketch, vii, 138; obit., xix, 619.
- Nuñez, Rafael, obit., xix, 619.
- Nurses, trained, vi, 659.
- Nussbaum, Isaac, obit., xviii, 564.
- Nussbaum, J. N., experiments by, x, 692; obit., xv, 685.
- Nussbaumer, observations, vi, 400.
- Nut-pine tree, utility of, iv, 658.
- Nutrients, function of, viii, 343; proportions of, in foods, 343.
- Nutrition, xiii, 694; xiv, 707.
- Nutritive ingredients and values of the food we eat, vi, 670; comparative cost of, viii, 346.
- Nutt, G. W. M., obit., vi, 686.
- Nutt, H. C., obit., xvi, 563.
- Nuttall, Zelia, xii, 16.
- Nutting, N. W., sketch, xiv, 643.

- Nyassaland, xv, 264; xvii, 244; xviii, 274; xix, 249; xx, 240.  
 Nye, James W., obit., i, 621.  
 Nyeshel, V. E., xii, 676.  
 Nyung, Yang, rebellion of, xi, 114.
- Oahspe, xvi, 602.  
 Oakey, Emily S., obit., viii, 593.  
 Oakland, xii, 126.  
 Oakley, L. W., sketch, xiii, 647.  
 Oates, R. L., ix, 479.  
 Oath, the iron-clad, iv, 24; decisions on, iv, 24.  
 Oaths and affirmations in British Parliament, the Bradlaugh case, vi, 627; vii, 365; viii, 400; Cong. Union on, viii, 155.  
 Oaths, test, for jurors, iv, 293; decisions on, in Florida, 376.  
 Oatman, Dr. J. S., obit., i, 622.  
 Obbareach, King, x, 119.  
 Obeidullah, surrender and rescue of, vii, 804; obit., viii, 603.  
 O'Beirne, R. F., obit., xvi, 645.  
 Obelisks, ix, 595; illustration of the New York, 596; list of monoliths, 597-599; practical use of, 600; the crabs, 600; masonic symbols, 595.  
 Obituaries, American and Foreign, in every volume.  
 Obrecht, M., xii, 45.  
 O'Brien, William, xii, 336; imprisonment of, 339.  
 O'Brien, William S., obit., iii, 642.  
 Obligations of Contracts, vii, 648; case of Virginia bonds, 648; of Louisiana, 652; Supreme Court decisions, 653.  
 Obrenovitch, house of, vii, 739.  
 Observatories, xi, 57; xii, 39; new, xiii, 48.  
 Obstruction, resolution in Parliament on, v, 331. See *Clôture*, vii, 203, 208.  
 O'Callaghan, E. B., obit., v, 594.  
 Ocarina, ix, 625.  
 Occultations, x, 53.  
 Oceanica, French possessions in, xvii, 295; geographical discovery in, 309.  
 Ochre, in Tennessee, ix, 757.  
 O'Connell, Morgan, challenged by Disraeli, ii, 252.  
 O'Connor Don, the, bill of, in Parliament, iv, 453.  
 O'Connor, James, obit., xv, 657.  
 O'Connor, John, expelled from Ohio Legislature, iii, 666.  
 O'Connor, William D., sketch and port., xiv, 643.  
 O'Connor, Charles, obit. and portrait, ix, 626.  
 O'Connor, J. F. X., ix, 19.  
 Octroi de mer, ix, 804.  
 Oculists, drugs used by, ix, 271.  
 Odell, W., observations by, v, 36.  
 Odessa, illustration, ii, 689.  
 Odger, George, obit., ii, 607.  
 Odlin, Peter, obit., ii, 585.  
 O'Donnell, P., crime and trial of, viii, 416; diplomatic correspondence on, viii, 281.  
 O'Donovan, E., death of, viii, 301.  
 O'Dwyer, A. C., obit., ii, 608.  
 O'Dwyer, Dr. Joseph, x, 743.  
 Odyssey, altar mentioned in the, ix, 23.  
 O'Farrell, M. J., obit., xix, 590.  
 Offenbach, J., obit., v, 601.  
 Office, qualifications for, x, 325.  
 Office-hunting, vi, 846, 847.  
 Officials, State, case of Missouri Treasurer, iv, 64; Nebraska Auditor, v, 549; New Jersey Treasurer, v, 566; county, payment of, by fees, vi, 205.  
 Officials, United States, alleged abuse of power by, iv, 18.  
 Ogden, xiii, 169.  
 Ogden, W. B., sketch, ii, 614.  
 Ogier, experiments by, vii, 89.  
 Ogilvie, R. A., obit., iv, 701.  
 Ogilvie, Mr., xii, 314.  
 Ogleshorpe Celebration, viii, 389.  
 O'Gorman, R., obit., xx, 585.  
 Ogowé River, exploration of, iv, 401; vi, 328; vii, 336.  
 O'Hagan, Baron, obit., x, 666.  
 Oham, ix, 114.  
 Ohio, in each volume; views in, i, 647, 648; ii, 616, 619; repeal of Geghan law, i, 646; inauguration of Governor Hayes, 646; strikes and riots, 649; ii, 621; v, 605; ix, 630, 631; election of Governor West, ii, 621; re-districting, iii, 666; v, 607; constitutional amendments, iv, 703; x, 673; election of Governor Foster, iv, 705; re-election, vi, 702; of Senator Sherman, vi, 700; population by counties, 703; liquor legislation, vii, 657; viii, 607, 609; ix, 630; xi, 631; xii, 643; election of Governor Hoadley, 609; floods, ix, 630; Cincinnati riot, 630; election of Governor Foraker, x, 673; re-election, xii, 643; contested seats in the State legislature, x, 673; xiii, 731; population, xv, 693; decennial appraisement, xvi, 690; lynching in, xx, 623; woman suffrage in, xx, 623.  
 Ohio River, flood in the, ix, 630.  
 Oil, a new, viii, 111; drying of, ix, 124; in West Virginia, xix, 782.  
 Oil, calming waves with, experiments, vii, 660.  
 Oil-burner, improved, xii, 652.  
 Oil-cloths, floor, viii, 97.  
 Oil-fuel, xii, 651.  
 Oil-stoves, x, 386.  
 Oils, spectrum analysis of, x, 155; test for, x, 158.  
 Okechobee Lake, drainage of, viii, 309; xii, 287.  
 O'Keefe, Eugene, obit., v, 594.  
 O'Keefe, Mr., x, 139, 140.  
 Okefenokee Swamp, xvii, 306.  
 Oklahoma, xiv, 675; xv, 696; xvi, 693; xvii, 608; xviii, 591; xix, 627; xx, 625; the boomers in, x, 762.  
 Oklahoma City, xviii, 167.  
 Oklobjio, I. D., sketch, ii, 621.  
 Okubo, assassination of, iii, 462.  
 Old Catholics, i, 649; ii, 621; iii, 669; iv, 704; v, 609; xix, 630; Archbishop of Canterbury on resolutions of, i, 22; abolition of priestly celibacy, iii, 669; communion in both kinds, iii, 670; recognition asked of Anglicans, iv, 32; relations with the Papacy, v, 609; history and doctrines of, and relations with the Church of England, xii, 644.  
 Olden, C. S., obit., i, 622.  
 Oldham, Thomas, obit., iii, 659.  
 Old Ironsides, history, vi, 620.  
 Olean, N. Y., xv, 139.  
 Oleomargarine, xx, 627; its manufacture, vii, 661; illustrations, 662, 663; ix, 2; New York law on, 664; xi, 232, 473; foreign demand for, ii, 112; tests for, vii, 89; new method of detection, x, 154.  
 Olin, Milo, sketch, xiv, 643.  
 Oliphant, L., sketch, xiii, 6f6.  
 Oliphant, Mrs. L., obit., xi, 724.  
 Oliver, Dr. Charles A., xii, 672.  
 Oliver, J. E., obit., xx, 585.  
 Oliviera-Martins, J. P., obit., xix, 620.  
 Ollicr, Edmund, obit., xi, 724.  
 Olmstead, J. W., obit., xvi, 645.  
 Olney, Edward, obit., xii, 602.  
 Olney, Richard, sketch and port., xviii, 735.  
 O'Loghlen, Sir B., vii, 43.  
 O'Loghlen, Sir C., obit., ii, 608.  
 Olphert, Wybrants, obit., xvii, 501.  
 Olympian games, revival of, xx, 344.  
 Olympia, Wash., xvi, 164.  
 Olzewski, experiments of, ix, 424; xii, 104.  
 Omaha, growth of, xi, 179; water, xix, 778.  
 O'Mahony, John, obit., ii, 585.  
 Omdurman, fall of, x, 319, 320.  
 Omer Pasha, obit., iv, 701.  
 Ometepe, volcano of, viii, 582.  
 Omohundro, J. B., obit., v, 594.  
 Onderdonk, H. G., obit., xi, 694.  
 O'Neal, Edward A., vii, 6.  
 O'Neill, E. C., experiments of, vii, 86.  
 O'Neill, H., x, 394.  
 O'Neill, J. A., obit., xvii, 564.  
 O'Neill, John, obit., xx, 614.  
 Oneonta, N. Y., xv, 139.  
 Ontario, province of, viii, 609; ix, 264, 632; x, 673; xi, 732; xii, 644; xiii, 671; xiv, 677; xv, 698; xvi, 695; xvii, 610; xviii, 593; xix, 620; xx, 627; map of, xv, 698.  
 Opal, xviii, 644.  
 Opal-mines, in Mexico, xi, 556.  
 Opdyke, George, obit., v, 594.  
 Opel, Julius, obit., xx, 614.  
 Operas. See *Music*.  
 Opium, attempts to suppress the use of, ii, 131, 132; iii, 100; vi, 109; culture in China, iii, 100; in Persia, v, 623; ix, 647; Americans prohibited from traffic in, v, 704; monopoly in India, vii, 416; reduced trade in China, viii, 126; convention between China and England, x, 174; importation of, into the United States, xii, 200; legislation of, xv, 116; xvii, 349; smuggling, xviii, 598; traffic in India and China, vi, 703; vii, 666; x, 105; commission, xx, 360.  
 Oppenheimer, S., xi, 50.  
 Oppolzer, Dr., ix, 53.  
 Options, decision on, xix, 555.  
 Opzoomer, Prof., obit., xvii, 601.  
 Oraksai, Gen., xiii, 6.  
 Orange Free State, ix, 115; xiv, 108; xv, 93; xvii, 127; xx, 113.  
 Orange incorporation, xv, 263.  
 Orange, the last prince of, ix, 614.  
 Orange, N. J., xviii, 167.  
 Orangemen, in Newfoundland, x, 639.



- Orehardson, W. Q., x, 359, 364; xi, 345; xii, 277.
- Orehestrion, x, 612.
- Orchestra, x, 619.
- Orchilla weed, ix, 493.
- Ord, E. O. C., sketch, viii, 611; service on the Rio Grande, ii, 513, 668; x, 429.
- Ortega, M., ix, 339.
- Order of Christ, the, x, 712.
- Order of Corporate Reunion, ii, 21.
- Order of Pius IX, the, x, 712.
- Order of Double Dragon, vii, 102.
- Orders, religious, xviii, 660.
- Orders, Redemptorist, xviii, 674.
- Ordinance, improvements in, ii, 622; experiments with, v, 29; of various countries, vii, 576; small arms. See Rifles.
- Ordish, Rowland Marsh, obit., xi, 724.
- Ordway, Nehemiah G., vi, 202.
- Oregon, in each volume; State University, 651; ii, 627; xii, 646; disputed election of 1876, i, 652, 653; ii, 627; Columbia River canal, ii, 627; x, 676; discoveries of fossil remains, ii, 628; salmon fisheries, iii, 671; vii, 671; viii, 612; ix, 636; xii, 646; Indian outbreaks, iii, 673; election of Gov. Thayer, 675; of Senator Slater, 676; sketch, 676; property of married women, 676; Chinese immigration, 676; iv, 712; growth in trade and values, iv, 707, 708; woman suffrage, iv, 712; v, 611; vi, 704; defeated, ix, 635; projected railroad, 613; vi, 706; new channel in the Columbia, vi, 614; population of towns and cities, vi, 706; of counties, 707; election of Gov. Moody, vii, 668, 672; State lands, 670; constitutional amendments, xi, 734; xii, 647; Gov. Penoyer, xii, 645; population, xv, 698; judicial decisions, xvi, 698, and xvii, 612; industries, xvii, 611; mortgage indebtedness, xviii, 596; capitol, 597; industrial exhibition, xx, 632.
- Orense, Marquis, obit., v, 602.
- Ores, origin of, xi, 538.
- Organ, C. P., nominated, xiii, 849.
- Organic and inorganic bodies, ix, 808.
- Organ worked by sunlight, x, 614.
- Organista, x, 618.
- Organs, pipe, reed, etc., x, 614.
- Orgnette, x, 617.
- O'Reilly, Henry, obit., xi, 694.
- O'Reilly, J. B., obit., xv, 657.
- O'Reilly, P. T., obit., xvii, 564.
- Oriental churches, xvii, 615.
- Orientalists, congress of, i, 711.
- Oriental powder, x, 345.
- Original Package Law, xv, 237, 470, 700.
- Orinoco River, sounding rocks beside the, x, 607.
- Orleans, Duke of, imprisoned, xv, 329.
- Orleans princes, expulsion of the, from France, xi, 355.
- Orloff, Prince, obit., x, 666.
- Ormsby, John, obit., xx, 614.
- Orpen, Sir R., obit., i, 639.
- Orr, Charles A., obit., i, 639.
- Orton, James, sketch, ii, 628; explorations, ii, 336.
- Orton, William, obit., iii, 642.
- Osborn, A. M., obit., xi, 694.
- Osborn, H. S., obit., xix, 590.
- Osborne, Bernal, obit., vii, 647.
- Osborne, E. B., obit., xviii, 564.
- Oscar II of Sweden, iii, 775; dissatisfaction with, x, 745.
- Osgood, C., obit., xv, 657.
- Osgood, J. R., obit., xvii, 564.
- Osgood, Samuel, sketch, v, 614.
- Oshkosh, Wisconsin, xix, 141.
- Osiris, vii, 260.
- Osman Digma, ix, 292, 293, 295; x, 315, 318; xi, 312; xii, 244.
- Osman Pasha, sketch, ii, 628.
- Osman Reski Pasha, vi, 236.
- Osmate of Potassium, xi, 291.
- Osortasen, King, ix, 19.
- Österbygd, colony of, x, 398.
- Ostrich-farming in the United States, vii, 672.
- O'Sullivan, J. L., obit., xx, 585.
- O'Sullivan, W. H., obit., xii, 635.
- Oswego, recent growth of, xi, 179.
- Otero, M. S., nominated, xiii, 601.
- Otis, Charles G., obit., xviii, 564.
- Otis, John L., obit., xix, 590.
- Ottawa, Ill., xviii, 169.
- Ottawa, view of, xv, 260.
- Otter, Admiral H. C., obit., i, 639.
- Otter, Col., x, 126 *et seq.*
- Otto, King of Bavaria, xi, 392.
- Otto, Paul, obit., xviii, 584.
- Ottumwa, Iowa, xv, 139.
- Otuiti, giant images at, ix, 276.
- Oude, Wadjid Ali Shah, obit., xii, 635.
- Oudin, Eugene E., obit., xix, 590.
- Ouray, Chief, sketch, v, 615.
- Ouray, Col., xv, 140.
- Onse, Roman bridge over, ix, 22.
- Ouseley, F. A. G., sketch, xiv, 667.
- Outerbridge, A. E., xii, 486.
- Overbrook, Pa., Simpson house at, illustration, xii, 369.
- Overheiser, J. C., obit., xvii, 564.
- Owen, R., obit., xv, 657.
- Owen, Sir R., obit., xvii, 601.
- Owens, John G., obit., xviii, 564.
- Owensborough, Ky., xvii, 117.
- Oxender, Ashton, obit., xvii, 601.
- Oxford, Miss., xviii, 169.
- Oxygen in the sun, xv, 39.
- Oyster survey, xiii, 618; industry, xiv, 532; xvi, 495; xix, 523.
- Pacific Islanders, armed, xiii, 64.
- Packer, Harriet L., obit., xvii, 564.
- Packer, J. B., obit., xvi, 645.
- Paddock, B. H., obit., xvi, 645.
- Paddock, John A., obit., xix, 591.
- Paducah, Ky., xvii, 117.
- Page, G. S., obit., xvii, 564.
- Pahang, xvii, 326.
- Pail, attachment for a, xvi, 707.
- Paine, Ira, sketch, xiv, 643.
- Paine, T. O., obit., xx, 586.
- Paine, W. H., obit., xv, 657.
- Painting. See Fine Arts.
- Palatka, Fla., xviii, 170.
- Palestine Exploration, xiii, 31.
- Paley, F. A., sketch, xiii, 667.
- Palgrave, W. G., sketch, xiii, 667.
- Palisades, the, xx, 537.
- Palizzi, Joseph, sketch, xiii, 667.
- Pallen, M. A., obit., xv, 658.
- Palloti, L., obit., xv, 686.
- Palmer, C., obit., xiii, 648.
- Palmer, Edwin, obit., xx, 614.
- Palmer, H. S., obit., xviii, 584.
- Palmer, P. S., obit., xv, 658.
- Palmer, Sir R., obit., xx, 615.
- Palouse City, Wash., xvi, 165.
- Pamirs, the, xviii, 3; xix, 3; agreement, xx, 3.
- Panama Canal, the, xiii, 177, 354; xiv, 165, 221; xv, 151; xvi, 176; xvii, 122; xviii, 173; xix, 145; scandal, xviii, 319.
- Pancera, invention by, x, 346.
- Pancastites, x, 153, 346.
- Panda, King of the Zulus, iv, 853; cession to the British by, x, 137.
- Panbianco, Cardinal, obit., x, 666, 713.
- Pango-Pango, 731.
- Paniza conspiracy, xv, 82.
- Panics, financial, xviii, 599.
- Panjikora, valley of the, ill., xx, 6.
- Panofka, Heinrich, obit., xii, 635.
- Panopolis, ix, 22.
- Panslavists, sentence of a leader of, iii, 426; agitations of, viii, 705. See Slavs.
- Pantanius, x, 121.
- Pantelophoe, the, vi, 258.
- Pantopolite, x, 345.
- Pantrizelle, Gen., xi, 45.
- Pao-Tchao, Gen., x, 26.
- Papacy, the, relations to Germany, i, 260, 680; ii, 659, 682; iii, 381; v, 639; vi, 346, 775, 792; vii, 357, 358, note, 724; viii, 395, 693; with Italy, i, 422, 703; ii, 408, 410, 677; iii, 736; vi, 450, 792; vii, 437, 724; viii, 692; with Austria, viii, 694; with Belgium, iii, 56; v, 54, 56; viii, 56, 693; with Russia, vii, 726; viii, 694; with Switzerland, ii, 682; viii, 694; with South American governments, i, 707; with France, iii, 343, 348; vi, 793; vii, 726; viii, 370; in United States, vi, 793; viii, 694; establishment of the hierarchy in Scotland, iii, 732; instructions to bishops in United States, iii, 737; the papal guarantees, ii, 408; viii, 454; see also the allocution, ii, 677, and Roman Question, vii, 627; negotiations, xi, 390. See also Roman Catholic Church.
- Papal Legation in 1894, xix, 699.
- Papal question, the, xiv, 469.
- Papal rescript, the, xiii, 394.
- Paparrigopolis, C., obit., xvi, 680.
- Pape, M., invention of, x, 616.
- Paper blasting-powder, x, 346.
- Paper, carbon, ix, 638.
- Paper envelopes, etc., xi, 734.
- Paper Exposition, iii, 724.
- Paper-hangings and wall-paper, viii, 615; ix, 247.
- Paper-making in India, ix, 407.
- Paper-pulp, new process, viii, 115.
- Paphos, temple at, xiii, 27.
- Papua, ix, 638; x, 678; map, 679; houses, 680; labor recruiting in, ix, 638; annexation of, ix, 639, 640; x, 400, 679; xii, 647.
- Papuans, canoes of, illustration, ix, 116; houses, x, 680.
- Parabuxinidine, x, 299.
- Parachute, xvi, 76.
- Paraguay, i, 654; iii, 677; vi, 724; vii, 673; viii, 617; ix, 640; x, 681; xi, 738; xii, 648; xix, 636; xx, 633; colonization, xx, 633; French and German colonization in, xii, 648, 649; German treaty, 648; xiii, 673; xiv, 680; xvii,

- 615; exploration in, xiv, 362; xv, 701; xvi, 699; xviii, 606.  
 Paralehyde, x, 299.  
 Parallax, solar, xi, 48.  
 Parallax, stellar, xiv, 49.  
 Pardee, Ario, obit., xvii, 564.  
 Pardee, Dwight Whitfield, obit., xviii, 564.  
 Pardo, Don Manuel, assassination of, iii, 687.  
 Pardons, Board of, in Connecticut, viii, 253.  
 Parian Wares, viii, 640.  
 Parion, Louis Esquiron de, obit., xviii, 584.  
 Paris, Auguste, ii, 319.  
 Paris, Comte de, xii, 291; marriage of, xi, 355; obit., xix, 620.  
 Paris Exposition, xiv, 680.  
 Paris, first meeting of the Chambers in, since 1870, iv, 392; map of, and environs, ii, 306; illustrations; bridges of, ii, 308; opera-house, 312; arc de triomphe de L'étoile, 317; church of Notre Dame, 316; labor disturbances in, xi, 359; right of, to legislative autonomy, xii, 297; Metric Congress, xx, 307; Miner's Congress, xx, 307; prison congress, xx, 307.  
 Paris, F. E., obit., xviii, 584.  
 Paris Salon, x, 358; xii, 274.  
 Parisel Dr. F., obit., ii, 608.  
 Parish churches bill, xi, 21.  
 Park reservation, xvii, 126.  
 Parks, military, bills concerning, xx, 198.  
 Park, Richard H., statue by, x, 367.  
 Parke, T. H., obit., xviii, 585.  
 Parker, A. J., obit., xv, 658.  
 Parker, E. S., obit., xx, 586.  
 Parker, H. G., obit., xvii, 565.  
 Parker, Joel, sketch, xiii, 648.  
 Parker, Peter, sketch, xiii, 648.  
 Parker, R., experiments iii, 722.  
 Parker, W. K., obit., xv, 686.  
 Parker, W., ix, 726, 727; sketch, 641.  
 Parkersburg, W. Va., xvi, 165.  
 Parkes, Sir H., x, 174; obit., x, 666.  
 Parkhurst, Dr. Charles H., xix, 538.  
 Parkman, F., sketch, xviii, 606.  
 Parkyns, Mansfield, obit., xix, 620.  
 Parlature, F., obit., ii, 608.  
 Parliament House explosions, ix, 378; x, 234.  
 Parliament of Religions, the World's, xviii, 607.  
 Parliament, the German, organization of, vii, 209; absenteeism, 200; rules, 210; groups in, 211; general aspect, 211.  
 Parliamentary system of England, the, vii, 199; rules, *ibid.*, 206; penal power, 202; expulsions, 202; the *clôture*, 203.  
 Parmentier, observations, viii, 22.  
 Parnell, C. S., sketch, v, 615; arrest, vi, 368; proposed suspension, vii, 204; "Treaty of Kilmainham," vii, 367; controversy with Mr. Foster, viii, 412; ix, 371, 372; x, 454, 455; in Parliament, illustration, vii, 205; obit. and port., xvi, 681; commission, xiv, 395; xv, 397.  
 Paropamisus range, x, 4; valleys, 7.  
 Parra Aqueilo, i, 115.  
 Parrish, J., obit., xvi, 645.  
 Parrott, R. P., obit., ii, 586; invention by, iii, 754, 762.  
 Parsivans, the, x, 8.  
 Parsons, Dr., murder of, v, 690.  
 Parsons, Edward Y., obit., i, 622.  
 Parsons, G. F., obit., xviii, 564.  
 Parsons, H. B., experiments by, vi, 95; obit., x, 653.  
 Parsons, L. E., obit., xx, 586.  
 Parsons, P. M., invention, i, 523.  
 Parsons, T., sketch, vii, 673.  
 Parthenine, x, 300.  
 Particularists movements, xvii, 51.  
 Parton, Arthur, xi, 346.  
 Parton, J., obit. and port., xvi, 646.  
 Pasadena, xii, 126.  
 Pasaglia, Carlo, obit., xii, 635.  
 Paschall, G. W., obit., iii, 643.  
 Pasi, Count, obit., xv, 686.  
 Pasolini, Count, obit., i, 640.  
 Passaic, N. J., xvii, 118.  
 Passamante, Giovanni, iv, 528.  
 Passamaquoddy Indians, xvii, 430.  
 Passavant, W. A., obit., xix, 591.  
 Passerini, L., obit., ii, 608.  
 Pasteur, Louis, germ theory of, iii, 387; experiments by, iv, 443; vi, 347; x, 157, 484; sketch and port., xx, 638.  
 Patagonia, partition of, i, 34; iv, 38; x, 41; disputed claims, x, 41; explorations in, xii, 315; discovery of gold in, xi, 39.  
 Patella, fracture of the, ix, 749.  
 Patenôtre, M., x, 28, 29.  
 Patent Office, centennial celebration, xvi, 703.  
 Patents, viii, 618; and inventions, xx, 636; grounds and methods of obtaining, laws on, etc., viii, 618-623; change in English law, 623; international conferences, 624; bill in Germany, ii, 351; office organized, 352; Congress, iii, 314; to two or more, 809; Burdett-Estey suit, iv, 842; drive-well suit, v, 418; British law, viii, 410; ix, 642; x, 682; international union, ix, 339; xii, 649; decisions in courts, xi, 738; xii, 650; statistics and descriptions of some inventions for every-day use, xii, 649-656; illustrations, 651-656; amendment of law, 204; case of extension of, 650; xiii, 674; xvi, 699; xvii, 616, 746.  
 Pater, W. H., obit., xix, 620.  
 Paterson, N. J., xviii, 170; water, xix, 778.  
 Patin, H. J. H., sketch, i, 654.  
 Patriarchate, œcumenical, xii, 773.  
 Patrick, M. R., sketch, xiii, 648.  
 Patriotic League, xv, 702.  
 Patriotic Order, xv, 703.  
 Patriotic societies in the United States, xix, 637.  
 Patrizi, C., obit., i, 640.  
 Patrons of Husbandry, xiii, 242.  
 Patterson, Capt., iv, 403.  
 Patterson, J. W., obit., xviii, 564.  
 Patterson, Robert, sketch, vi, 725.  
 Patterson, R. W., obit., xix, 591.  
 Patterson, T. H., sketch, xiv, 643.  
 Patterson, W. C., obit., viii, 593.  
 Patti, Carlotta, sketch, xiv, 667.  
 Pattison, Mark, obit., ix, 620.  
 Pattison, R. E., sketch, vii, 678.  
 Pattison, Thomas, obit., xvi, 646.  
 Patton, A. H., obit., xvii, 565.  
 Patton, Alfred S., sketch, xiii, 648.  
 Patton, W. W., sketch, xiv, 644.  
 Paul, J. H., nominated, xiii, 559.  
 Paul, Gabriel R., obit., xi, 695.  
 Paul, M., observations of, viii, 21.  
 Paulding, Hiram, obit., iii, 643.  
 Paulet, Lord W., obit., xviii, 585.  
 Pauli, Richard, obit., xvii, 565.  
 Pauncefote, Sir Julian, x, 420.  
 Pauper immigration, xiii, 424.  
 Pauperism and crime, xvi, 842.  
 Pavement, for cities, ii, 277.  
 Pavy, F. W., experiments, ix, 658.  
 Pavy, Octave, ix, 33-35.  
 Pawtucket, R. L., growth of, xii, 126; xx, 685.  
 Payer, Richard, explorations by, ix, 350; xi, 381; xii, 314.  
 Payne, Joseph, sketch, i, 654.  
 Payne-Smith, Robert, obit., xx, 615.  
 Paynter, James A., obit., i, 640.  
 Paynter, J. H., obit., xv, 658.  
 Peabody, A. P., obit., xviii, 564.  
 Peabody, Elizabeth P., xiii, 11; obit., xix, 591.  
 Peabody Museum, the, xi, 22.  
 Peace Congress, xvi, 389; xvii, 723.  
 Peace Societies, xx, 640.  
 Peach, Benjamin N., ix, 636, 637.  
 Peacock, Mother, obit., iv, 774.  
 Peacock, Sir B., obit., xv, 686.  
 Peanut oil, xiv, 133.  
 Peanuts, vii, 829; xii, 758.  
 Pear-blight, theory of, ix, 94.  
 Pearce, C. S., xi, 347; xii, 279.  
 Pearce, Richard, x, 578.  
 Pearl, the, canoe, ill., ix, 109.  
 Pearls, xviii, 644.  
 Pearson, Charles H., obit., xix, 621.  
 Pearson, Clement, obit., xi, 695.  
 Pearson, E. M., obit., xviii, 585.  
 Pearson, John J., sketch, xiii, 648.  
 Pearson, R. M., obit., iii, 643.  
 Peary, Capt. Robert E., port., xix, 299.  
 Peary, Mrs. R. E., port., xix, 299.  
 Peasant insurrection, xiii, 721.  
 Peasant proprietors, x, 526.  
 Pease, Alfred H., obit., vii, 641.  
 Peasc, Joseph L., obit., iii, 643.  
 Peat, use of, in Mexico, ix, 493.  
 Peatfield, James, sketch, xiv, 644.  
 Pecci, Cardinal, sketch, ii, 629.  
 See Leo XIII.  
 Pecci, G., obit., xv, 686.  
 Pechûle, Dr., discovery by, vi, 38.  
 Pechili, Gulf, blockaded, x, 27, 28.  
 Peck, Asahel, obit., iv, 604.  
 Peck, Ebenezer, obit., vi, 687.  
 Peck, G., D. D., obit., i, 622.  
 Peck, Jesse T., obit., viii, 593.  
 Peck, John J., obit., iii, 643.  
 Peck, W. G., obit., xvii, 565.  
 Peckham, F. A., obit., i, 622.  
 Peckham, R. W., sketch and port., xx, 729.  
 Peckham, S. F., observations by, iv, 53.  
 Pecos river bridge, xvii, 249.  
 Peculiar people, xiii, 676.  
 Pedasso, Homeric city of, ix, 25.  
 Pedersen, Knud, obit., i, 640.  
 Pedra Pedraô, discovery, xii, 306.  
 Pedro II of Brazil, sketch, ii, 629; portrait, 74; sketch and port., xiv, 684; obit., xvi, 682.  
 Peel, Arthur W., sketch, ix, 643.  
 Peel, Paul, obit., xvii, 601.  
 Peel, Sir R., obit., xx, 615.  
 Peeples, Judge C., obit., ii, 586.  
 Peet, Stephen D., xi, 23.  
 Peirce, Benjamin, obit., v, 595.  
 Peixoto, Floriano, obit., xx, 615.



- Peixotto, B. F., obit., xv, 658.  
Peking, Temple of Heaven, iii, 98 ; western gate, 100.  
Pel, Gen., obit., i, 640.  
Pelaw Islands, x, 138.  
Pelham, William, obit., iv, 694.  
Pellegrini, Antonio, obit., xii, 635.  
Pellegrini, Carlo, sketch, xiv, 667.  
Pellew, George, obit., xvii, 565.  
Pellieier, A. D., obit., v, 595.  
Pelly, Lewis, ii, 5, 6 ; obit., xvii, 601.  
Pemberton, J. C., sketch, vi, 726 ; x, 425.  
Penck, A., explorations by, xii, 313.  
Pendleton bill, the, ix, 692.  
Pendleton, G. H., sketch, xiv, 644.  
Péne, Henri de, sketch, xiii, 667.  
Penfield, S. L., x, 156.  
Penjdeh, x, 4 ; Afghan claim to, 7 ; fight at, 10 ; cave dwellings near, 38 ; occupation of, ix, 714.  
Penitentes, figures called, ix, 543.  
Penn, John, obit., iii, 660.  
Penneterie, L., obit., xviii, 582.  
Pennie, Henry, invention, ix, 736.  
Pennock, A. M., obit., i, 622.  
Pennsylvania, in each volume ; views in, i, 656, 657 ; ii, 632, 636 ; election of Senator J. D. Cameron, ii, 630 ; strike, 636, see Labor-Strikes, iv, 717 ; boundary-line of New York, i, 637 ; the oil business, iii, 678, 682 ; Standard Oil Company, 682 ; election of Gov. Hoyt, iii, 684 ; case of payment of Pittsburg bonds, 685 ; of farming land in Pittsburg, 686 ; tramp and store-order acts, iv, 715 ; taxation of corporations, 715 ; v, 619 ; investigation of bribery charges, iv, 718, 721 ; v, 621 ; management of Agricultural College, iv, 719 ; railroads, 719 ; v, 618 ; xi, 746 ; taxation of church property, iv, 721 ; liability of a city for the condition of its streets, 721 ; sale of medical diplomas, v, 622 ; insurance companies, vi, 727 ; population by counties, 731 ; election of Gov. Pattison, vii, 679 ; sketch and portrait, 678 ; divorces, ix, 645 ; xi, 745 ; liquor-traffic, xi, 745 ; abuses in soldiers' orphans' homes, 746 ; industrial statistics, 747 ; election of Gov. Beaver, 750 ; married women's property act, xii, 656 ; constitutional amendments, 657 ; the American party, 659 ; population, xv, 703 ; high license, 705 ; decisions, xvi, 717, and xviii, 611 ; constitutional revision, 717 ; State suits, xvii, 625.  
Pensacola, xiv, 155.  
Pension bill, xvii, 278.  
Pension bill, dependent, xv, 234.  
Pensions, in Japan, i, 427 ; in New Jersey to soldiers of 1812, vi, 638 ; in Alabama, xix, 4 ; in Arkansas, xix, 30 ; to soldiers of other American wars, ix, 224 ; Mexican War, xviii, 211 ; increase of, bill in Congress, viii, 248 ; amendment to pension veterans of Mexican and Indian wars, viii, 248 ; xi, 255 ; bill in United States, xii, 183 ; in Germany, 328 ; increase in number of, 779 ; United States, xiii, 234, 772 ; xiv, 217, 805 ; xv, 820 ; xvii, 199, 205, 527 ; xvii, 746 ; xviii, 739 ; xix, 756 ; Confederate, xiii, 618, 743 ; xiv, 612, 327, 772 ; xv, 365, 625 ; xvi, 532 ; xvii, 724 ; xviii, 7, 498 ; xix, 4, 30.  
Pentarchist party, Italy, xi, 454.  
Pentaur, poem of the, ix, 28.  
Pentaura, mummy of, xi, 32.  
Penzance, Lord, ii, 18 *et. seq.*  
Peor, site of, ix, 28.  
Peoria, growth of, xi, 719.  
Pepe, King, ix, 19.  
Pepper, G. S., obit., xv, 658.  
Peptones, the, viii, 119 ; xii, 675.  
Perey, John, sketch, xiv, 667.  
Pereire, L., obit., v, 602.  
Pereirine, x, 300.  
Perger, Rt. Rev. J., obit., i, 640.  
Perier, sketch, i, 659.  
Perinchief, O., obit., ii, 586.  
Perkin, Dr. W. H., experiments by, x, 157, 158.  
Perkins, Bishop W., obit., xix, 592.  
Perkins, C. A., obit., xvii, 565.  
Perkins, G. C., vii, 74.  
Perkins, G. L., sketch, xiii, 648.  
Perkins, Grauville, obit., xx, 586.  
Perkins, George R., sketch, i, 659.  
Perkins, Jonathan C., obit., ii, 586.  
Perkins, S. E., sketch, iv, 723.  
Perkins, W. R., obit., xx, 586.  
Perkins, William, obit., xii, 603.  
Perofiskaya, Sophia, vi, 797.  
Perraud, J. J., obit., i, 640.  
Perrin, Robert P., obit., i, 622.  
Perrone, G., sketch, i, 659.  
Perrotin, discoveries by, i, 46 ; ii, 44 ; iii, 36 ; xi, 54.  
Perry, Benjamin F., obit., xi, 695.  
Perry, E. E., sketch, xiv, 644.  
Perry, electric railway, viii, 678.  
Perry, Horace J., obit., xvi, 646.  
Perry, Oliver H., statue of, x, 367.  
Perry, R. L., obit., xx, 586.  
Perry, S. J., obit., xv, 686.  
Perry, William, obit., xii, 603.  
Persecution in China, xi, 155.  
Persia, in each volume, except iii and xi ; views in, i, 660 ; ii, 637, 638 ; travels of the Shah, i, 660 ; reforms, 660 ; incursions of Tekke and Kurds, i, 661 ; v, 623 ; vi, 731 ; mission, i, 661 ; the Russo-Turkish war, ii, 638 ; iv, 724 ; possible alliance with England, iv, 724 ; reorganization of the army, 724 ; vi, 733 ; the Afghan question, v, 622 ; famine, 623 ; opium culture, 623 ; succession to the throne, vi, 731 ; x, 686 ; railroad schemes, vi, 732 ; rivalry of Russians and British in, 732 ; Merv oasis, 733 ; tent-dwelling Turkomans of Kara Kum, 733 ; under protection of Russia, vii, 681 ; Sarakhs, 681 ; internal disturbances, 681 ; Shiites and Sunnites, viii, 627 ; commerce and industries, ix, 646 ; the Russian advance, 647 ; x, 14, 686 ; attempted capture of Herat, x, 1 ; minister of foreign affairs, xii, 660 ; relies from, xiv, 22 ; xv, 706 ; xvi, 717 ; earthquake, xviii, 614.  
Persian antiquities, xi, 26 ; succession, vi, 731 ; x, 686.  
Persico, Ignazio, obit., xx, 615.  
Perth Amboy, New Jersey, xix, 141.  
Pertz, G. H., obit., i, 640.  
Peru, in every volume but ii ; war with Chili, see Chilian War ; claim against Chili, x, 164 ; insurrections, x, 686, 687 ; proposal of protectorate, 687 ; Grace-Aranibar contract, the, xii, 662 ; quarrel with Bolivia, xx, 93.  
Peru, Chili, and the United States, vi, 738 ; vii, 810 ; termination of American treaties, x, 687.  
Perugia, illustration, ii, 678.  
Peruvian bark, ix, 89, 123 ; x, 99 ; cultivation of, in India, v, 367. See also Cinchona.  
Peruzzi, Vbaldino, obit., xvi, 683.  
Pescadores, seizure of the, xx, 138.  
Peshawer, fort of, in India, ii, 390.  
Pestilence in India, i, 404.  
Peter, Mrs. S., obit., ii, 586.  
Petersmann, A., obit., iii, 660 ; theory of African rivers, 363.  
Peters, Adolf, obit., i, 640.  
Peters, C. A. F., obit., v, 602.  
Peters, C. H. F., discoveries by, i, 46 ; ii, 44 ; iii, 36 ; iv, 51 ; v, 34 ; viii, 21 ; star-charts of, viii, 27 ; obit. and port., xv, 659.  
Peters, John C., obit., xviii, 565.  
Peters, Karl, sketch, xiv, 667.  
Peters, Theodore C., obit., i, 622.  
Peters, T. M., obit., xviii, 565.  
Petersburg, xi, 419.  
Petersburg, Va., xvi, 165.  
Peterson, R. E., obit., xix, 592.  
Petitot, explorations by, v, 297.  
Petraltio, x, 343.  
Petrella, E., obit., ii, 608.  
Petrie, H. F., explorations, x, 33.  
Petrie Point, view of, xv, 596.  
Petrie, W. M. Flinders, invention, iii, 275 ; ix, 19, 21 ; xi, 27, 28.  
Petrified forest, Arizona, xviii, 21.  
Petroleum, vii, 687 ; pipe-line transportation of, iii, 618 ; export of, 682 ; iv, 174 ; test, vii, 96 ; statistics, vii, 114 ; government monopoly in Greece, viii, 419 ; in Mexico, 537 ; in Ontario, 609 ; in Russia, ix, 705 ; x, 718 ; in Egypt, xi, 312 ; Russian, x, 718 ; xi, 312 ; in Argentine Republic, xii, 28 ; in Burma, xii, 84 ; possible origin of, ix, 129 ; xiii, 680. See Naphtha.  
Petroleum lamps, x, 160.  
Petry, invention by, x, 346.  
Pettenkofen, A., sketch, xiv, 668.  
Pettie, John, x, 364 ; xi, 345 ; obit., xviii, 585.  
Pettingell, John H., obit., xii, 603.  
Pettis, G. W., obit., xvii, 566.  
Pettit, John, obit., ii, 586.  
Pettitbled, invention by, ix, 736.  
Peucker, E., sketch, i, 662.  
Peyton, Bailie, obit., iii, 643.  
Pfaff, C. I., obit., xv, 660.  
Pfund, Dr., obit., i, 640.  
Phacusa, x, 36.  
Phanogamia, ix, 95.  
Phantom City, vii, 337.  
Pharaoh's serpents, ix, 808.  
Pharmacy, viii, 630 ; ix, 649 ; x, 688 ; xi, 753 ; xii, 664 ; xiii, 687 ; xvii, 630.  
Phata-Hoteph, book by, vii, 260.  
Phelan, James, obit., xvi, 646.  
Phelps, A., obit., xv, 660.  
Phelps, A. H. L., obit., ix, 610.  
Phelps, Elisha, obit., v, 595.  
Phelps, G. M., sketch, xiii, 648.

- Phelps, John F., obit., iii, 643.  
 Phelps, John Smith, i, 566; obit., xi, 696.  
 Phelps, Philip, obit., i, 622.  
 Phelps, Royal, obit., ix, 611.  
 Phelps, W. W., obit., xix, 592.  
 Phenix or Phoenix, xiv, 156.  
 Phenol, ix, 129.  
 Philadelphia, statistics of, x, 685; recent growth of, xi, 180.  
 Philadelphia, ancient, ix, 28.  
 Philadelphia, new charter, xiv, 689; water, xix, 778.  
 Philbrick, John D., obit., xi, 696.  
 Philippia, xi, 139.  
 Philippine Islands, viii, 740; ix, 740; xiv, 776; xix, 723.  
 Philico, P. C., obit., xv, 660.  
 Philippi, engagement at, x, 554.  
 Philippopolis, revolt in, x, 108.  
 Philippovitch, sketch, xiv, 668.  
 Phillips, C. D. F., xii, 678.  
 Phillips, G. S., sketch, xiv, 644.  
 Phillips, Isaac, sketch, xiv, 644.  
 Phillips, John A., obit., xii, 636.  
 Phillips, John B., obit., ii, 586.  
 Phillips, Philip, obit., xx, 586.  
 Phillips, R. H., obit., xv, 660.  
 Phillips, Wendell, obit., ix, 650.  
 Phipson, experiments by, vii, 88.  
 Phœnicians, relics of the, ix, 28.  
 Phoenix Park murders, the, vii, 366; viii, 414; trials for, 415.  
 Phoneidoscope, the, iii, 727.  
 Phonograph, the, ii, 638; illustrations, 688, 689; xv, 708.  
 Pbormium hemp, xiii, 248.  
 Phosphates, xi, 806; discovery of, in Colombia, xii, 140; xiv, 772; xvii, 278; discovered, xiv, 326; of lime, xiv, 15; xv, 319, 778; in Alabama, xviii, 7; in Florida, xviii, 315.  
 Phosphorescence, of marine animals, x, 690.  
 Phosphoric acid, ix, 128; x, 157.  
 Phosphorus, production of, v, 88; new form, viii, 121.  
 Photo-Engraving, xii, 665.  
 Photographic camera, xvi, 710.  
 Photography, improvements in, ii, 498; iii, 725; vi, 747; amateur, ix, 651; celestial, x, 49; ix, 52; x, 47, 49; xi, 51; xii, 35; xix, 53; in colors, ix, 122; illustrations, washing plates, xii, 655; xi, 741; astronomical, xiii, 49; xiv, 42; celestial, xvi, 51; recent progress in, xvi, 720.  
 Photometer, meridian, xi, 52.  
 Photometry, new unit of light for, ii, 96; standards, vi, 96; stellar, xii, 43.  
 Photophone, the, v, 447.  
 Pbthallie acid, v, 89.  
 Phylloxera, vi, 670; ix, 345.  
 Physical training, xii, 665.  
 Physics, progress of, in recent years, xiv, 691; in 1890, xv, 710; in 1891, xvi, 725; in 1892, xvii, 634; in 1893, xviii, 616; chemical, xv, 99; xviii, 131; in 1894, xix, 651; in 1895, xx, 647.  
 Physiology, recent, vi, 748; viii, 631; xix, 660; literature of, vi, 754; vii, 692; viii, 638; ix, 653; x, 689; xi, 754; xii, 668; xiii, 689; xiv, 703; xv, 720; xvi, 734; xvii, 644; xviii, 626; xx, 656.  
 Piaggia, explorations by, ii, 330.  
 Piahte, Lake, x, 395.  
 Piallat, M., invention by, x, 578.  
 Pianell, Count G., obit., xvii, 602.  
 Pianista, x, 620; ill., 621.  
 Piano, improvements in the, i, 517; x, 614; mécanique, x, 620.  
 Piano, Major, xii, 2.  
 Piatt, Donn, xvi, 646.  
 Picard, L. J. E., obit., ii, 603.  
 Pichot, A., obit., ii, 608.  
 Pickering, Charles, obit., iii, 643.  
 Pickering, C. W., obit., xiii, 649.  
 Pickering, E. C., observations by, vi, 40; vii, 41; ix, 52; x, 53.  
 Pickering, W. H., xi, 51, 52, 53, 57.  
 Picknell, William L., xi, 347.  
 Pico, Pio, obit., xix, 592.  
 Pieramine, x, 300.  
 Pieric acid compounds, x, 346.  
 Pietet, Raoul, design of, for ships of war, vi, 246; apparatus for liquefying oxygen, with illustration, ii, 88; quoted, vii, 259; experiments by, ix, 434.  
 Pictures. See Fine Arts.  
 Pierce, Bradford, sketch, xiv, 644.  
 Pierce, George F., obit., ix, 611.  
 Pierce, Lovick, obit., iv, 695.  
 Pierce, Thomas P., obit., xii, 603.  
 Pierola, Nicholas de, iv, 728; made "supreme chief" of Peru, v, 625; his flight, vi, 737.  
 Pierpont, John, sketch, vii, 693.  
 Pierre, P. J. G., obit., viii, 603.  
 Pierrepont, E., obit., xvii, 566.  
 Pierrepont, H. E., sketch, xiii, 649.  
 Piers, new, iv, 344.  
 Piersol, S. H., nominated, xiii, 841.  
 Pierson, H. R., obit., xv, 660.  
 Pig-iron, in Alabama, xv, 5.  
 Piglhein, Bruno, obit., xix, 621.  
 Pihahiroth, site of, ix, 19.  
 Pike, A., obit. and port., xvi, 647.  
 Pike, Austin F., obit., xi, 696.  
 Pike County disorders, xiii, 463.  
 Pike, Maria L., obit., xvii, 566.  
 Pike, Richard, obit., xviii, 585.  
 Pile, William A., sketch, xiv, 644.  
 Pilgrimages, xviii, 661.  
 Pilgrim Fathers, monuments to, xiv, 323; homes of the, xv, 321.  
 Pilling, J. C., obit., xx, 587.  
 Pillot, A. P., obit., v, 595.  
 Pillow, G. J., x, 423; obit., iii, 644.  
 Pillsbury, Gilbert, obit., xviii, 565.  
 Pillsbury, J. S., sketch, i, 558; portrait, ii, 524.  
 Pilot-chart, xiii, 59.  
 Pilot, Carl von, ix, 464; xii, 279; obit., xi, 724.  
 Pim, Bedford, obit., xi, 725.  
 Pinart, Zelia N., xi, 24, 46.  
 Pine Bluffs, Ark., xviii, 171.  
 Pine, white, xvi, 530.  
 Pine-wood oil, vii, 634.  
 Pineo, Peter, obit., xvi, 647.  
 Pineton, Charles A., obit., xvi, 647.  
 Pinheiro, Lieut., invention by, iii, 725.  
 Pinkertons, the, xvii, 208.  
 Pinkney, Howard, sketch, xiii, 649.  
 Pinkney, William, obit., viii, 593.  
 Pinneo, T., S., obit., xviii, 565.  
 Pinoleum, vii, 94.  
 Pinsk Marshes, drainage, xi, 320.  
 Pinto, Don Annibal, i, 103; iii, 73.  
 Pinto, Serpa, explorations by, iv, 404; v, 293; sketch of, iv, 405.  
 Piombo, Sebastian del, x, 366.  
 Pipe-line, Suakim-Berber, ix, 316.  
 Pipe-lines, xvii, 655.  
 Piper-methysticum, xi, 291.  
 Piperonal, xi, 291.  
 Piracy at Foochow, i, 109, 347.  
 Piræus, excavations in the, x, 37.  
 Pirmez, E., obit., xv, 686.  
 Pirogoff, Dr., ix, 747.  
 Pirot, capture of, x, 731.  
 Pisciculture, viii, 791.  
 Pisebkhanu, King, ix, 19; city of, 20.  
 Pishin, annexation of, xiii, 7.  
 Pistorius, H. A., obit., ii, 609.  
 Pita, viii, 638; illustration, 639.  
 Pitcher, John, obit., xvii, 566.  
 Pitcher, T. G., obit., xx, 587.  
 Pithom, ix, 19; x, 35.  
 Pitkin, Frederick W., obit., xi, 696.  
 Pitkin, Percy P., obit., xvi, 647.  
 Pittman, Ben, ix, 246.  
 Pittsburg, recent growth of, xi, 180; illustration, ii, 632; water, xix, 778.  
 Pittsfield, xv, 141.  
 Pituri, vi, 755.  
 Pius IX, sketch, iii, 689; episcopal jubilee of, ii, 681; insult to the remains of, vi, 451, 792.  
 Pixley, F. M., obit., xx, 587.  
 Pixley-Fulford, Annie, obit., xviii, 565.  
 Place, Charles P., obit., xviii, 585.  
 Placer Claim Decision, xix, 359.  
 Placide, Thomas, obit., ii, 586.  
 Plague, the, iv, 728; vii, 286, 291.  
 Plainfield, xv, 141.  
 Plains of Heaven, the, x, 296.  
 Planché, James R., obit., v, 602.  
 Planchon, J. E., sketch, xiii, 667.  
 Planetary tables, xiv, 46.  
 Planetoids, xviii, 45.  
 Planets, supposed intra-Mercurial, i, 45; iii, 33; viii, 20; ultra-Neptunian, v, 34; spectra of, xi, 54; see Astronomical Progress.  
 Planté, Gaston, invention by, vi, 254; experiments of, vii, 265; xii, 492; sketch, xiv, 668.  
 Plants, chemistry of, xiii, 146.  
 Plants, electrical phenomena in, i, 249; insectivorous, iv, 36; absorption of noxious substances by, vii, 93; anatomy and physiology of, ix, 92; respiration of, ix, 130; new, xii, 73.  
 Platea, relics at, xvi, 18.  
 Platinum, vi, 93; wire, x, 576.  
 Platt, T. C., resignation of, vi, 644.  
 Plattsmouth, Neb., xviii, 171.  
 Playfair, Sir Lyon, x, 46.  
 Pleasonton, A. J., obit., xix, 593.  
 Pleiades, the, xii, 44.  
 Plener, Dr., on reform, v, 44.  
 Pleuro-pneumonia, xi, 434; in "Chicago stock-yards, xii, 377.  
 Plevna, fall of, ii, 744; ix, 762.  
 Pleyte, M. W., x, 33.  
 Plimpton, J. L., ix, 736.  
 Plimpton and Graves, experiments by, viii, 113.  
 Plong, Carl P., obit., xix, 621.  
 Plötz, Albert von, obit., i, 640.  
 Plover, in United States, x, 389.  
 Plumb, Preston B., sketch, ii, 416; obit., xvi, 647.  
 Plumbing, ix, 716 *et seq.*  
 Plume, Maj.-Gen. J. W., port., xx, 508.  
 Plumer, William S., sketch, v, 626.  
 Plumfield, xiii, 11.  
 Plumtree, E. H., obit., xvi, 68.  
 Plunkett, T. O. W., xiv, 668.



- Plushes, ix, 788.
- Pneumatic excavation, ii, 275.
- Pocci, Count, obit., i, 640.
- Pocock, Francis, death of, ii, 332.
- Poe, Edgar A., memorial to, x, 367.
- Poe, Orlando M., obit., xx, 587.
- Poetsch, his mining, xi, 310.
- Poetry. See Literature.
- Pogge, Paul, explorations of, i, 381; obit., ix, 620.
- Poggendorff, J. C., obit., ii, 609; explorations, iii, 364.
- Poillon, Richard, obit., xvi, 648.
- Poindexter-Greenhow case, x, 268.
- Point Pleasant, ill., x, 422.
- Pointers, ix, 256.
- Poise, Ferdinand, obit., xvii, 602.
- Poisons, in food, clothing, etc., iv, 381; ix, 663; action of, xi, 763; xii, 678; xiii, 695; xiv, 710; xv, 728. See Arsenic.
- Polak, Edward, obit., xvi, 683.
- Poland, change in administration, i, 711; demand for political rights, v, 666; plan to restore the Kingdom of, ix, 358; expulsion of foreigners from, x, 418.
- Poland, Luke P., obit., xii, 603.
- Polar bear, illustration, i, 327.
- Polar Conference, third, vi, 325.
- Polaris, xiii, 57.
- Polarization, vii, 265.
- Polar regions, statistical tables, v, 626. See Arctic Expeditions.
- Polaris, the, ix, 33, 34.
- Polding, Archbishop, obit., ii, 609.
- Poles, conciliation of, viii, 708; xi, 389, 390.
- Poliakoff, Samuel, sketch, xiii, 667.
- Police power of States, ix, 429.
- Policy, Indian, changes of, vi, 421.
- Polish National Alliance, xx, 665.
- Political Agitations, in Denmark, iv, 313; vi, 209, 210; in Portugal, vi, 760; in France, ii, 303; map of France, ii, 314; in Italy, see Italia Irredenta; in the United States, i, 719. See also under titles of countries.
- Political assessments, vii, 151, 693. See also Civil-Service Reform.
- Political conventions, national. See article United States and articles on States of the Union.
- Political crimes, by supposed Fenians, vi, 370. See Assassinations.
- Political parties, English, viii, 412; German, xviii, 347.
- Polk, ex-President, burial place of, xviii, 711; homestead, view of, xvi, 648.
- Polk, L. L., obit., xvii, 566.
- Polk, Sarah C., obit., xvi, 648.
- Polk, Trusten, obit., i, 622.
- Pollard, Josephine, obit., xvii, 566.
- Polle, Dr., ix, 653.
- Pollock, J., obit., xv, 660.
- Polo, description of, xii, 680.
- Polygamy, in Utah, vi, 783, 859; ix, 219, 792; in Idaho, viii, 435, 812; law against, x, 764, 773; trials, ix, 792; act of Congress, xii, 168.
- Polynesia. See Australia and Polynesia.
- Polynesian race, the, ix, 277.
- Polynias, the, vii, 332.
- Pomare, Queen, ii, 53; v, 40.
- Pomare, King, v, 40.
- Pomeroy, S. C., obit., xvi, 648.
- Pomona, Cal., xviii, 172.
- Pompeii, celebration, iv, 527.
- Ponape Island, x, 139; ruined city in, 146.
- Ponca Indians, removal, iv, 653.
- Ponchielli, Amilcare, obit., xi, 725.
- Pondicherry, xv, 334.
- Pondoland, x, 135; xi, 135; xvi, 102; xix, 102.
- Ponroy, P. G. A., sketch, i, 663.
- Pontmartin, Count, obit., xv, 686.
- Ponzi, Giuseppe, obit., x, 667.
- Poole, Reginald Stuart, x, 35; obit., xx, 615.
- Poole, Reuben B., obit., xx, 587.
- Poole, W. F., obit., xix, 593.
- Poor, work for the. See Charities.
- Pope, F. L., obit. and port., xx, 587.
- Pope, Com. John, obit., i, 622.
- Pope, Gen. John, x, 401, 559, 560; obit. and port., xvii, 567.
- Pope, John A., sketch, xiv, 668.
- Popelin, Claudius, obit., xvii, 602.
- Popoff, Capt., x, 731.
- Popow, Dr., ix, 654.
- Popper, Julius, xii, 315.
- Poppy oil, xiii, 145.
- Population, density and death-rate, iii, 723; of the earth, xvi, 261.
- Population, the center of, in the United States, with maps, vi, 755; movement of the center, map, 757; foreign map, vi, 851.
- Porcelain, viii, 639; illustrations, 641, 642, 643.
- Porcher, F. P., obit., xx, 588.
- Pork, prohibition of American, viii, 396, 643.
- Porpoise-hunting, xii, 681.
- Porro, expedition of, xi, 312, 455.
- Portals, Jean, obit., xx, 615.
- Portal, Mr., his mission, xiii, 2, 3.
- Port Arthur, xiii, 170; taking of, xix, 132.
- Port Gibson, battle at, x, 425.
- Port Hamilton, taken, x, 10, 14, 174; xi, 155; retroceded, xii, 118; abandoned, 311.
- Port of Spain, burned, ix, 803.
- Porter, A. D., invention, ii, 720.
- Porter, David D., sketch, xvi, 743.
- Porter, Elbert S., sketch, xiii, 649.
- Porter, Fitz-John, case of, iv, 49; in Congress, viii, 236; ix, 205; xi, 253.
- Porter, James, sketch, xiii, 649.
- Porter, James D., i, 745; ii, 710.
- Porter, J. K., obit., xvii, 567.
- Porter, Noah, obit., xvii, 567.
- Port Huron, Mich., xvi, 166.
- Portland, Maine, xi, 181.
- Portland, Oregon, xii, 127.
- Porto Rico, viii, 648; ix, 663; xi, 783; xii, 802; xiii, 840; xiv, 824.
- Portraits, composite, iii, 726; ancient, xiii, 29; crayon, xv, 729.
- Ports, opened, in China, i, 119; ii, 102; new, xiii, 257.
- Portsmouth, N. H., xvi, 167.
- Portsmouth, Va., xix, 141.
- Port Townsend, Wash., xvi, 167.
- Portugal, in each volume, except xv and xvi; ii, 640, 641; improvement in finances, i, 664; liberal party, 665; ministerial crisis, De Avila cabinet formed, ii, 641; the Jesuits, iv, 628; tercentenaries of Camoens and Vaseo de Gama, iv, 628; national debt, vi, 759; popular demonstrations against the government, vi, 760; vii, 697; eolones, viii, 650; x, 697; xi, 767; xii, 684; claims on the Congo, xii, 651; postal congress, x, 697; change of ministry, De Castro cabinet, xi, 767; dissolution of the Cortes, xii, 603; treaty with China, 117; attempt to establish a protectorate over Dahomey, xii, 684; claim of, to lower Congo, x, 191; King and Queen, xiv, 711; xv, 737; xvi, 749.
- Portuguese East Africa, xviii, 275.
- Portuguese, in Africa, ix, 168; x, 394.
- Posada Herrera, ix, 741; obit., x, 667.
- Position finder, xv, 581.
- Possiblists, the, ix, 344, 742.
- Post, P. S., obit., xx, 588.
- Postage, review of legislation on, viii, 163; bill in Congress for reduction, viii, 185; review of reductions, viii, 188.
- Postal Congress, x, 697; xvi, 69.
- Postal Convention, xiv, 98.
- Postal Dispatch, ii, 497.
- Postal Facilities, recent improvements in, xii, 684; distribution, 685; fast mail of 1875, 686; stamped special-request and letter-sheet envelopes, 686; postage, 686, 687; money-orders, postal notes, and postal savings-banks, 697; registration, 688; locks, letter-boxes, the silicate tablet, 688; mail-bags and boxes, canceling-machines, 689; postal union, 689; salaries of letter-carriers, 206; cards, xvii, 659.
- Postal route, American, x, 61.
- Postal Statistics, i, 240; iv, 836.
- Postal subsidy, xvi, 226.
- Potagos, explorations by, v, 292.
- Potania, G. N., explorations by, ii, 327; xii, 310.
- Potassa, determination of, ii, 93; manufacture, viii, 115.
- Potassium, chlorate powders, x, 345; new processes, xii, 107.
- Potel, invention, vii, 316.
- Potentite, x, 344.
- Potluan, Louis, ii, 321.
- Potocki, Count, sketch, xiv, 668.
- Potomac marshes, v, 650.
- Pott, Angus F., obit., xii, 636.
- Potter, C. N., sketch, vii, 697.
- Potter, E. E., sketch, xiv, 645.
- Potter, George, obit., xviii, 585.
- Potter, H., obit. and port., xii, 604.
- Potter, J. H., obit., xvii, 568.
- Potter, O. B., obit., xix, 594.
- Potter, Platt, obit., xvi, 648.
- Potter, Robert B., obit., xii, 605.
- Pottery, Cincinnati, ix, 248.
- Pottinger, Mr., x, 1.
- Pottle, Emory B., obit., xvi, 648.
- Potts, F. A., sketch, xiii, 649.
- Pottsville, Pa., xix, 142.
- Pouget, trial of, viii, 369.
- Poughkeepsie, growth of, xi, 181.
- Poujoulat, J. J. F., obit., v, 602.
- Poundmaker, x, 128.
- Poussin, Nicholas, sale of work of, x, 361; xiii, 260.
- Pouyer-Quertier, A. T., obit., xvi, 684.
- Powder, smokeless, xiv, 742, 743; xvii, 482.
- Powell, J. W., x, 402, 403; address, xiii, 44.

- Powell, Thomas, obit., xii, 605.  
 Power of Congress over witnesses, vii, 698; Kilbourne case, *ibid*.  
 Powers, H. N., obit., xv, 661.  
 Powys, Bishop, obit., ii, 609.  
 Poynter, E. J., x, 364; xii, 277.  
 Pozzolini, Gen. G., xi, 1, 455.  
 Prado, M. I., iii, 686; iv, 732.  
 Praeger, F., obit., xvi, 684.  
 Praga, Emilio, obit., i, 640.  
 Prague, Theinkirche, ii, 380.  
 Prat, metal discovered by, ii, 502.  
 Prati, Giovanni, obit., ix, 620.  
 Pratt, Anne, obit., xviii, 585.  
 Pratt, C., obit. and port., xvi, 649.  
 Pratt, Daniel, obit., xii, 605.  
 Pratt, Daniel D., obit., ii, 586.  
 Pratt, James T., obit., xii, 606.  
 Pratt Public Library, vii, 509.  
 Pratt, Thomas T., obit., xvi, 649.  
 Prause, Dr., xii, 671.  
 Pray, Ebenezer H., obit., i, 622.  
 Prayer-Book, revision of the, ii, 24.  
 Prazak, Dr. A., iv, 60.  
 Precious metals, xiii, 529; xv, 152.  
 Precious stones, xviii, 688.  
 Predegram, A., obit., ii, 587.  
 Preece, observations, viii, 526; his address, xiii, 46.  
 Preller, Friedrich, obit., iii, 660.  
 Prendergast, Gen., xi, 115.  
 Prentiss, Mrs. E. P., obit., iii, 644.  
 Presburg, illustration, ii, 57.  
 Presbyterians, in each volume; declarations on slavery since 1861, i, 670; charge against Rev. D. J. MacDonell in Canadian church, i, 672; ii, 647; subject of union between different branches, i, 667; ii, 642; on the formula for admission of elders, ii, 647; iii, 698; on church and state in Scotland, ii, 648; iii, 699; viii, 660; x, 702; general council of the alliance, ii, 650; vii, 673; trial of Rev. J. M. See for admission of a woman to the pulpit, iii, 693; heresy of Rev. J. Miller, iii, 693; charges against Rev. W. C. McCune, 693; new basis of representation, 694; heresy of Rev. J. Robertson Smith, iii, 699; iv, 736; v, 634; revision of subordinate standards, iii, 699; heresy trial of Rev. David Macrae, iv, 737; subject of preaching by women, v, 630; on worldly amusements, iv, 734; v, 630; admission of a polygamist in India, v, 631; charges against missionaries at Blantyre, v, 633; vi, 768; vii, 706; case of Rev. W. L. MacFarlane on the authority of the Bible, vi, 769; alliance of India, 771; question of admitting a colored preacher to presbytery, vii, 702; restoration of fraternal relations between Northern and Southern assemblies, vii, 702; ix, 667, 668; question of instrumental music in churches, vii, 704; xi, 775; xii, 695; convention of opponents to it, viii, 656; memorial to United Presbyterian assembly on, 655; subject of union between the Cumberland and Lutheran churches, viii, 653; question of modifying the creed in England, 660; Sabbath observance, vii, 706; ix, 667; proposed monument to Calvin in Washington, ix, 667; validity of baptism in the Roman Catholic Church, x, 698; quarter-centennial of the Southern church, xi, 769; heresy of Dr. Woodrow concerning evolution, xi, 769; case of Dr. Muir, xi, 774; question of marriage with a deceased wife's sister, xii, 693, 698; preparations for the centennial celebration of the Southern church in 1888, xii, 694; Waldensian Church of Italy, vi, 771; Walloon churches, vii, 709; the Briggs trial, xviii, 650.  
 Presbyterian Alliance, the, ii, 650; ix, 673.  
 Prescott, Albert B., port., xvi, 33.  
 Prescott, B. F., ii, 545; iii, 602; obit., xx, 588.  
 Prescott, George B., obit., xix, 594.  
 Prescott - Shepherd, Marie, obit., xviii, 565.  
 President of the United States, proposed amendments on the election and length of term of, i, 132-138, 158-166; salary of the, i, 171; third term of, i, 167; executive acts, where performed, i, 169; election of, see Elections; messages of, see Congress.  
 Presidential elections, xiii, 799 *et seq*.  
 Presidential electors, vii, 147.  
 Presidential inability, vi, 414.  
 Presidential succession, xi, 229.  
 President Saenz Peña, resignation of, xx, 28.  
 Presidents, absences of, from Washington, i, 169-171.  
 Press, the suppression of newspapers, i, 709; laws in France, ii, 304-308; trial of Cassagnac, 305; colportage bill, iii, 343; amnesty for offenses of, 343, 344; bill on, vi, 311; in India, restrictions on, iii, 33; the native, 435; laws in Japan, iii, 462; silenced in Ecuador, iii, 261; censorship, ix, 708; associations, xi, 635.  
 Pressense, E. D., obit., xvi, 684.  
 Prestan, Pedro, xi, 44.  
 Preston, David, obit., xii, 606.  
 Preston, John, obit., xii, 606.  
 Preston, John S., sketch, vi, 771.  
 Preston, Rachel D., xi, 2.  
 Preston, Seephaniah, obit., ii, 587.  
 Preston, Thomas S., obit., xvi, 650.  
 Preston, William, obit., xii, 606.  
 Pretenders, French, bill to exile, viii, 366; xi, 355.  
 Pretis-Cagnodo, obit., xv, 687.  
 Pretoria, treaty of, ix, 111.  
 Preuss, H. A., obit., xix, 594.  
 Price, Bonamy, sketch, xiii, 667.  
 Price, Rodman M., obit. and port., xix, 594.  
 Price, Roger, in Africa, iii, 362.  
 Price, Sterling, x, 423.  
 Prime, E. D. G., obit., xvi, 650.  
 Prime, E. G., x, 704.  
 Prime meridian, ix, 54, 777.  
 Prime, Rufus, obit., x, 654.  
 Prime, Samuel I., obit., x, 703.  
 Primogeniture, law of, x, 521.  
 Prince Edward Island, viii, 660; x, 704; xviii, 657; xix, 684; xx, 678; plans to establish communication with, x, 704; province of, xiii, 706; xvi, 762.  
 Prince, Henry, obit., xvii, 568.  
 Princes, expulsion of, from France, xi, 355.  
 Princeteau, Gen., obit., i, 641.  
 Princeton Telescope, vii, 41.  
 Prince, W. E., obit., xvii, 568.  
 Prindle, E. H., obit., xv, 661.  
 Pringsheim, theory of, vi, 111; experiments of, ix, 93; obit., xix, 621.  
 Printing, improvements in, i, 518; vi, 548.  
 Printing-office, United States Government, xiii, 380.  
 Prior, Thomas Abiel, obit., xi, 725.  
 Priscilla, the yacht, x, 791.  
 Prison congress, the, xx, 307.  
 Prisons, in New York, i, 597, 605; Maryland, ii, 478; Massachusetts, ii, 482; vi, 537; Kentucky, iv, 539; Texas, iv, 831; California, vi, 82; viii, 78; reformatories in Michigan, vii, 554; at Louvain, viii, 497; contract system, iv, 600, 653, 665; the separate system, vii, 675; English system, viii, 403; associations and congresses, xii, 704; reform, 701; United States Government, 704. See also Convict Labor and the articles on the States.  
 Prisons, Southern, during the civil war, i, 184-192.  
 Pritchard, Charles, obit., xviii, 585.  
 Pritchard, Rev. Charles, xi, 52, 57.  
 Pritchett, observations by, iv, 52.  
 Prize fighting, xx, 427; in Massachusetts, xx, 643.  
 Prizes, astronomical. See under Astronomy.  
 Prjevalsky, Col. N. M., explorations of, in Asia, ii, 326; iii, 359, 360; v, 289; ix, 348; x, 397; xi, 376; xii, 309; obit., xiii, 667.  
 Proa, ix, 115.  
 Probascio collection, xii, 280.  
 Processes, new, xviii, 136; xx, 122.  
 Proctor, Redfield, iii, 815, 816; sketch and port., xiv, 802.  
 Proctor, R. A., sketch, xii, 707.  
 Profit-sharing, xvii, 670.  
 Prohibition, viii, 661; by statute, 664; by constitutional amendment, 666; license, 663, 668; effects of enforcements, 668; constitutionality, 669; arguments for, 670; in Iowa, ix, 411, 429; x, 499; xii, 393; in parts of Georgia, x, 410; in Maine, ix, 463; xii, 453; in Kansas, xii, 406; in Kentucky, 411; in Michigan, 506; in Missouri, 516; in Rhode Island, 713; in Tennessee, 758; National Convention, ix, 774; x, 499; in Vermont, xix, 765. See the articles on States of the Union.  
 Prohibition Reform party, i, 780; ix, 774.  
 Projectiles, xiii, 795.  
 Prokesch-Osten, sketch, i, 675.  
 Propaganda Fide, congregation of, property of, viii, 692; ix, 699.  
 Propagation of the Gospel, Society for, xiv, 10.  
 Propeller, elliptic, xvi, 704.  
 Propeller-screws, ill., xii, 655.  
 Property Rights of Foreigners in Mexico, viii, 538; great estates in, viii, 538.  
 Prophetic Conference, xii, 705.  
 Protais, Alexandre Paul, xii, 275.



- Protection in Germany, iv, 435; x, 415; in France, v, 284; in Mexico, v, 14; in Canada, vi, 217; Speaker Carlisle on, viii, 94. See Duties and Tariff.
- Protective Association, the American, xix, 685.
- Protoids, sources of the, ii, 94.
- Protestant Episcopal Church, statistics, reports of boards and societies, conventions, etc., in each volume; subject of establishing brotherhoods and sisterhoods, ii, 652; canon on deaconesses, v, 638; question of free churches, 638; committee on "liturgical enrichment" of the Prayer-Book, vi, 772; work among Indians, x, 705; among the Jews, xii, 707; church reunion, xi, 778; xii, 707.
- Proteus, destroyed, viii, 421; ix, 36.
- Protich, Kosta S., obit., xvii, 602.
- Prout, hypothesis of, vi, 42.
- Prout, Skinner, obit., i, 641.
- Prouty, David, obit., xvii, 568.
- Providence, xiii, 170; water, xix, 778.
- Provisions, commerce in, iv, 167.
- Provo, xiv, 157.
- Prudente, José de Moraes, port., xix, 84.
- Prudhomme, J. F. E., obit., xvii, 568.
- Prussia, under Prussia in each of the first six volumes; in the others under Germany; views, i, 679; ii, 655, 657, 658; revenue, i, 678; Catholic dissatisfaction, 679; bill for the purchase of railroads, 679, 680; resignation of Delbrück, 680; incorporation of the Duchy of Lauenburg, 680; new constitution of the state church, 680; bill for the administration of Catholic Church property passed, 680; bill passed making German the official language in Poland, 680; deposition of Catholic bishops in Münster and Cologne, 680; result of ministerial crisis, ii, 657; violent discussions, 658; conflict between the Government and the Catholic Church, 659; cabinet resignation, iii, 705; laws relating to religious orders and congregations, 706; resignations of liberal and appointment of conservative ministers, iv, 740; sketches of Robert Victor Puttkammer, Robert Lucius, and K. H. Bitter, 740; retirement of the minister of justice, 740; sketch of Dr. Heinrich Friedberg, 740; railroad bill passed, 742; general synod, 742; debates on the conflict of church and state, v, 639; vi, 775; Prof. Virchow's views, v, 640; violent debate on the Jewish question, 640; anti-Semitic movement, 640; vi, 776; negotiations with Rome, vi, 775; bill for remission of taxes, 775; ministerial changes, 776; railroads bought by the Government, 776.
- Prussia, General Synod of, iv, 742.
- Prussian and German Governments, antagonism, iii, 378.
- Prussian State Council, ix, 356.
- Pruyn, Robert H., obit., vii, 642.
- Pryer, James, obit., xvii, 568.
- Psammaticus, King, ix, 20; inscription of, x, 35.
- Psychical research, xii, 509.
- Ptilolite, xi, 139.
- Ptolemy II, building by, x, 35.
- Ptolemy V, coin of, x, 33.
- Ptolemy Philadelphus, ix, 20.
- Ptoinaies, discovery of, vii, 94; ix, 663; x, 299.
- Ptoun, Mount, discovery at, x, 37.
- Public buildings, xvi, 234.
- Public Documents, in first six volumes.
- Public lands, ix, 215; xiii, 466; unlawful occupancy of, x, 241, 244.
- Public Meetings, bills on, in France, v, 238.
- Pucido, x, 776.
- Pueblo, Col., xvi, 166.
- Pueblo Indians, the, xii, 545.
- Pueblos, the, ix, 17.
- Puerto Rico, xvi, 243; xvii, 218; xviii, 252; xix, 235.
- Pug-dogs, ix, 263.
- Puga, Dr., x, 687.
- Pugh, George E., sketch, i, 691.
- Pulgar, Gen. V., x, 776.
- Pul-i-Khisti, x, 9; battle of, 10.
- Pulsifer, David, obit., xix, 595.
- Pulsifer, Royal M., sketch, xiii, 649.
- Pumpelly, Raphael, x, 404.
- Puna, the, ix, 543.
- Pundit, A. K., explorations, x, 396.
- Punishment of crime, Congress on, xvi, 810.
- Parcell, J. B., sketch, vii, 726; viii, 672. See Bishops, Liability of, etc.
- Purdue University, ill., 407.
- Purdy, Alfred S., obit., xi, 697.
- Puritan, the yacht, x, 791.
- Pusey, E. B., sketch, vii, 711.
- Putjata, explorations, ix, 349.
- Putnam, F. W., xii, 16.
- Putnam, George, obit., iii, 644.
- Putnam, John P., obit., vii, 642.
- Putnam statue, the, xiii, 240.
- Puttkamer, A., obit., xviii, 565.
- Puttkammer, R. V., sketch, iv, 740.
- Pütz, W., obit., ii, 609.
- Pylorus, resection of the, ix, 748.
- Pyramid, in Mexico, viii, 536.
- Pyramids, the Egyptian, vii, 258; xiv, 24; opening of, 260; of Senefru, 262; ix, 21; opening of, vii, 260; illustrations: section of the great, iii, 266; the great, vii, 258; of Meydoun, vii, 262; measurements of the great, ix, 21; tools used for, 21; traces of an attempt to destroy, 21.
- Pyrenees, orography of the, xii, 313.
- Pyronome, x, 345.
- Quackenbush, J. V. P., obit., i, 622.
- Quackenbush, S. P., obit., xv, 661.
- Quail in the United States, x, 389.
- Quain, Sir John, obit., i, 641.
- Quarantine, National, xviii, 217.
- Quarantine rules, v, 12.
- Quartley, Arthur, obit., xi, 697.
- Quartzite, in Dakota, xii, 219.
- Quebec, Province of, viii, 674; xiii, 710; xiv, 723; xvi, 765; xvii, 676; xviii, 660; xix, 689; xx, 681; political controversy in, iv, 319; ix, 676; x, 706; small-pox in, 706; xi, 778; inundations, 778; opposition to the conservative government of the Dominion, 779; labor movement, 779; xii, 707; railway policy, 708; incorporation of the Jesuits, 708; exodus from, xviii, 661.
- Quebec, city of, its recent growth, xii, 127; illustration, ii, 254.
- Quebracho, ix, 272.
- Queen, Walter W., obit., xviii, 566.
- Queensland, ix, 60; x, 65; xi, 64; xii, 47; xiv, 55; xv, 47; xvi, 62; xvii, 44; xviii, 58; xix, 58; xx, 68; gold discoveries in, xi, 64.
- Quesada, Marshal, sketch, xiv, 668.
- Quesneville, G. A., xiv, 669.
- Questel, C. A., sketch, xiii, 668.
- Quetta, district of, ix, 6; railway 6; x, 12.
- Quick, Robert H., obit., xvi, 684.
- Quicksilver-Mines, viii, 523.
- Quimby, E. T., obit., xv, 661.
- Quinby, I. F., obit., xvi, 650.
- Quincy, Edmund, obit., ii, 587.
- Quincy, Ill., recent growth of, xii, 127; xiii, 170.
- Quincy, Mass., xv, 142.
- Quinine, new preparation of, x, 299; substitute for, 300.
- Quinn, William, obit., xii, 606.
- Quinolone, x, 300.
- Quinton, James W., obit., xvi, 684.
- Quirigna, ruins of, xi, 24.
- Quito, bank of, its failure, x, 302.
- Rabbit bounties, Idaho, xx, 353.
- Rabbit pest, the, xiii, 61.
- Race, George W., obit., vi, 687.
- Races, conflicts of, vii, 47, 53.
- Rachout, Henry, xii, 276.
- Racine, recent growth of, xii, 128.
- Rackarock, new explosive, x, 346.
- Radan, M., x, 54.
- Radde, Dr. G. J., xii, 307.
- Kadetzki, Gen., sketch, ii, 671.
- Radford, W., obit., xv, 661.
- Radiation, terrestrial, xii, 488.
- Radick Islands, x, 38.
- Radiophony, vi, 787.
- Radomir, capture of, x, 729.
- Rae, John, obit., xviii, 585.
- Raff, Joachim, obit., vii, 647.
- Rafferty, Thomas, sketch, xiii, 650.
- Raffray, explorations by, iii, 365; iv, 411.
- Raft, lumber, xii, 257; xiii, 305.
- Ragazzi, Dr., his mission, xiii, 3.
- Rahway, bankruptcy, iv, 669.
- Raikes, Robert, v, 674.
- Railroad Land Grants, i, 692.
- Railroads riots. See Labor Strikes.
- Railroad transportation, xii, 258.
- Railroads financially considered, xiii, 326.
- Railroads, taxation of, xiii, 261; tax cases, xviii, 690; in 1893, xviii, 306; speed on, xviii, 286; safety of life on, xviii, 214.
- Rails in the United States, x, 389.
- Railway, submerged, xv, 286.
- Railways, electric, viii, 675; illustrations, 676, 678, 680.
- Railways, Elevated, iii, 284; Vienna circular, vi, 247; bill on taxes of New York, vii, 600; investigation of charges, 602; case of Judge Westbrook, 602, 603; decision on damages to property by, 616; five cent fare bill, ix, 147; law of accidents, xi, 179; cable, xi, 122.
- Railways, government control of, in Germany, i, 344, 679; ii, 352;

- iv, 441, 742; vii, 349; viii, 391, 394; in Italy, i, 418; in Ilungary, viii, 40; in Denmark, vi, 209; Danube and Turkish, viii, 43; first, in China, i, 111; ii, 102; closed in China, vi, 107; Indian, vii, 414; trans-Caspian, xi, 375; xii, 6; trans-Siberian, xi, 375; new system of mountain, vi, 246; trans-Andean, iii, 20, 291; Himalayan, vii, 284; proposed Sahara, iv, 27; v, 293; Euphrates, viii, 306; in Australia, v, 38, 40; vii, 42; x, 327; in Persia, vi, 732; in New Zealand, vii, 46; in South America, iii, 63, 677; v, 59, 65; vii, 682; viii, 66; xi, 752; in Central America, iii, 417; iv, 460; v, 199; Canada Pacific, v, 214, 221; vii, 217; viii, 87; ix, 268; completion of Canadian Pacific, x, 104, 133, 327; in Mexico, xi, 556; xii, 502, 503; Tehnantepee ship, xii, 502; State regulation of, law on, xii, 467-470.
- Railways, Improvements in, engines, ii, 494, 496; brakes, ii, 496; signals and speed indicators, i, 252, 516; car-wheels, i, 516; bridges, v, 242, 244; improvements, vi, 544; American engines and cars, iv, 188; constant-circuit rail system, iv, 602; plan for a ship, iv, 345; narrow-gauge, iii, 279; L'Artigue's single railway, with illustration, xi, 320; screw-propeller, xi, 742.**
- Railways of the United States, vii, 712; statistics, v, 242; viii, 336; Northern Pacific, vi, 130; viii, 613; completion, viii, 781; Southern Pacific, iii, 571; vi, 518; Transcontinental, viii, 316; famous fights between, iv, 158, 159; war of rates, vii, 560; suits on, ii, 754; vii, 456, 464; priority of liens, iv, 842, effect of freight rates in Vermont, iv, 840; memorial on, from Vermont Grange, iv, 841; board to supervise, iv, 601, 602; anti-Monopoly League, vi, 652; decision on taxation of, viii, 341; in California, ix, 103; in Montana, 536; validity of bonds in aid of, iii, 580; v, 309; ix, 42, 43; interstate commerce bill, vi, 172; reductions on freight, viii, 152; N. Y. commission act, vii, 600; business in 1884, ix, 328; land grants to, ix, 214; litigation in Pennsylvania, xi, 746; investigation, Pacific, xii, 193; interstate commerce act, 269. See also Financial Review, Railway Service in the United States, and the State articles.**
- Railway service in the United States, ix, 677; diagrams showing increase of, 677, 678; table comparing the railways of the United States and Europe, 680; freights, 683.**
- Raimondi, A., obit., xv, 687.**
- Rain and floods in Pa., xviii, 610.**
- Rain, artificial, xvi, 765.**
- Rainfall, annual, of United States, with map, viii, 528; affected by forests, 351; xi, 545; extent of, 542; observations of, in the Car-**
- natie, xii, 490; connected with sun-spots, 490; in Italy, 491; xiii, 535; xiv, 546; xv, 535.**
- Rains, Gabriel J., sketch, vi, 788.**
- Rajah of Pooree, trial of, iii, 438.**
- Raleigh, xiii, 171.**
- Ralston's cotton-cleaner, vi, 265.**
- Ram, the naval, xviii, 283.**
- Rambaut, T., obit., xv, 661.**
- Ramcau, Septimns, obit., i, 641.**
- Ramée, Daniel, obit., xii, 636.**
- Rameses II., statue of, ix, 20; wars of, 28; his mummy, xi, 29; illustration, 30; xii, 18.**
- Rameses III., sphinx bearing the name of, x, 20; xi, 30; xii, 18; his mummy, xi, 29.**
- Ramie, xviii, 661.**
- Rampolla, Cardinal, xii, 399.**
- Ramsay, Prof., theory of, vi, 350.**
- Ramses, city of, x, 35.**
- Ramsey A., sketch, iv, 834.**
- Ranavalona II., Queen of Madagascar, death of, viii, 507; ix, 460.**
- Randall, A. M., obit., xii, 607.**
- Randall, D. A., obit., xi, 697.**
- Randall, J. W., obit., xvii, 568.**
- Randall, R. R., statue of, x, 361.**
- Randall, Samuel J., sketches, i, 692; iv, 748; portrait, iv, 193; sketch and port., xv, 751.**
- Randi, Lorenzo, obit., xii, 636.**
- Randolph, T. F., obit., viii, 593.**
- Rangabé, A. R., obit., xvii, 602.**
- Range finder, xv, 580.**
- Ranke, Ferdinand, obit., i, 641.**
- Ranke, L. von, sketch, xi, 783.**
- Ranvier, experiments by, vi, 753; viii, 60.**
- Rao, Sir Madhava, obit., xvi, 684.**
- Raon incident, the, xii, 327.**
- Raouf Pasha, x, 317.**
- Raoult, researches, vi, 100; x, 152.**
- Rapa Nui. See Easter Island.**
- Rapallo, C. A., obit., xii, 607.**
- Raphael, works of, x, 360, 366.**
- Rapid transit, xvi, 591; xx, 638.**
- Rapier, invention by, iii, 271.**
- Rarefied air, effects of, ix, 541-545.**
- Ras Aloula, victory, x, 319; xii, 2.**
- Raschid Bey, x, 317.**
- Raske, experiments, xii, 671.**
- Raspail, F. V., obit., iii, 660.**
- Rassam, Hormuzd, discoveries by, vi, 22; vii, 268; ix, 18; xi, 25; xii, 17.**
- Ratazzi, Madame, xii, 294.**
- Rathbone, Justus H., x, 518; sketch, xiv, 645.**
- Ratib Pasha, defeat of, xi, 507.**
- Rau, Charles, obit., xii, 607.**
- Rau, Herbert, obit., i, 641.**
- Raumer, Rudolf von, obit., i, 641.**
- Ravensworth, obit., iii, 660.**
- Rawle, W. H., sketch, xiv, 645.**
- Rawlins, John A., obit., i, 622.**
- Rawlins, Wyo., xv, 142.**
- Rawlinson, Sir Henry C., ix, 18; x, 38, 39; obit., xx, 615.**
- Rawson, George W., obit., ii, 587.**
- Rawul Pindi, durbar held at, x, 12.**
- Ray, C. S., experiments by, vi, 748, 751.**
- Ray, John, sketch, xiii, 650.**
- Ray-Lankester, x, 150.**
- Ray, P. H., expedition, vi, 325.**
- Ray, Ossian, obit., xvii, 569.**
- Rayleigh, Lord, ix, 45.**
- Raymond, battle at, x, 425.**
- Raymond, C. A., obit., xx, 588.**
- Raymond, John II., obit., iii, 644.**
- Raymond, R. R., obit., xiii, 650.**
- Raynal, David, viii, 357, 367.**
- Rayner, Joseph, ix, 651.**
- Raynolds, Capt. W. F., x, 401; obit., xix, 595.**
- Read, Sophia H., obit., v, 595.**
- Reade, Charles, obit., ix, 687.**
- Reading, growth of, xi, 181; water, xix, 778.**
- Real estate, holding of, by foreigners, in Illinois, xii, 375.**
- Reason, C. L., obit., xviii, 566.**
- Reavis, Logan U., sketch, xiv, 645.**
- Reay, Baron, obit., i, 641.**
- Rebellion, collection of tax for expenses of conducting, iv, 429.**
- Receiver, xvii, 677.**
- Recidivists, ix, 57; law, x, 342, 378.**
- Reciprocity, treaties, congressional action, x, 238; between Mexico and United States, viii, 535; of 1854, xii, 281; xiii, 278; xiv, 278; xv, 202 *et seq.*; xvi, 94, 244; rejection of, xvi, 856; treaties, xvi, 832; convention, in Minn., xviii, 496.**
- Red Cross societies, and the laws of war, vii, 715; xi, 783; twentieth anniversary, xi, 785.**
- Red light, the, viii, 525; connection with sun-color, *ibid.*; theories on, 526; ix, 53; x, 48, 581; xi, 54; fading out of, xi, 546.**
- Red men, the, iv, 846.**
- Red Prince, the, x, 382.**
- Red Sea coast annexed to Egypt, v, 235; trade of, ix, 413; European settlements, ix, 339.**
- Red Sea expedition, the, x, 504-506.**
- Red Sunsets. See Red Light.**
- Redding, J. R., obit., xvii, 569.**
- Redemptorist Order, xviii, 674.**
- Redfield, Herman J., obit., ii, 587.**
- Redfield, Isaac F., sketch, i, 692.**
- Redfield, John H., obit., xx, 588.**
- Redfield, J. S., sketch, xiii, 650.**
- Redgrave, Samuel, obit., i, 641.**
- Red-gum tree, the, viii, 545.**
- Redistributing in Connecticut, vi, 198; in New York, viii, 569; in Pennsylvania, viii, 624.**
- Redpath, James, obit., xvi, 651.**
- Redtenbacher, invention, xi, 140.**
- Redwitz, Oskar, obit., xvi, 685.**
- Reed, Henry, obit., xvii, 569.**
- Reed, Joseph, obit., ii, 587.**
- Reed, Myron W., xi, 193.**
- Reed, T. B., sketch, xiv, 724.**
- Reed, William B., obit., i, 622.**
- Reese, Henry, obit., xx, 616.**
- Reese, J., fusion-disk of, vi, 313.**
- Reese, J. J., obit., xvii, 569.**
- Reeve, I. V. D., obit., xv, 662.**
- Reflection and refraction, xi, 569.**
- Reflectors, mounting, ix, 47.**
- Reform in the Civil Service, viii, 682; examinations, 684; New York Board, 686; classes of the service, 686; rules, 688; subjects, 688, 689; ix, 226, 690.**
- Reformed Church in France, threatened schism in, i, 695.**
- Reformed Churches, in every volume but vi; decision on the right of a church to its property after leaving the denomination, i, 694; establishment of Southern congregation, 695; dissensions between orthodox and liberal sections in France, 695, 696; confirmation of the old**



- declaration of faith in Holland, 696; Dutch Church in South Africa, ii, 672; case of Rev. Dr. A. Blaauvelt, 671; quarto-millennial anniversary in New York, iii, 720; confession of faith, iv, 749, 750; general council of churches holding the Presbyterian system, v, 652; subject of Masonry and other secret societies, vii, 716; viii, 681, disapproval of the action of congress on Chinese immigration, vii, 718; of the creed, 719; form for baptism, viii, 68; plan for conspectus of church legislation of the last three centuries, ix, 689; liturgy adopted, 689; x, 708; xii, 710; confederation of churches in Germany, ix, 689; mission at Tokio, x, 708; the revised version of the Bible, xi, 787; commissioners to Presbyterian missions in India, xi, 787; subject of union with the Presbyterian Church, xii, 709; researches among documents and memoranda relating to the church history in Holland, 709; question of the status of a church in Cayuga, 709; differences in doctrine among the churches of Germany, 711.
- Reformed Episcopal Church, i, 696; ii, 673; iii, 721; iv, 750; viii, 682; xix, 692; in Spain, xix, 11; peculiar tenets of, i, 697; first church in England of, iii, 721; admission to Anglican pulpits of clergymen of, iv, 30; x, 708; centennial celebration of the adoption of the American Episcopal Prayer-Book, 709; establishment of a theological seminary in Philadelphia, 709; xii, 711; comparison of statistics of 1885 and 1887, 711; endowment-fund of the seminary, 711; eleventh council, 712; subjects of marriage and divorce, and temperance, 712; general synod of Great Britain and Ireland, 712; xvi, 769.
- Refunding national debt, iv, 751.
- Regel, explorations by, ix, 349.
- Regicides, attempted, iii, 292, 293, 379-381, 458.
- Registration of letters, xii, 688; of voters, x, 321; laws for, xii, 246.
- Registry laws, xiv, 826.
- Regla Falls, Mexico, xvi, 521.
- Regnaud, M., ix, 662.
- Regnault, H. V., obit., iii, 660.
- Rehn, F. K. M., xi, 346.
- Reichard, Paul, x, 393-394.
- Reichenbach, H. G., sketch, xiv, 669.
- Reichert, Dr., experiments, vii, 690; xii, 679.
- Reichlin-Meldegg, obit., ii, 609.
- Reichstag, the. See Parliament, the German, and Germany.
- Reid, Sir James, obit., i, 641.
- Reid, Mayne, obit., viii, 603.
- Reindeer, in Alaska, xx, 14.
- Rein-grip, xvi, 706.
- Reinhart, Karl A., obit., ii, 609.
- Reinke, A. A., sketch, xiv, 645.
- Reinsberg, Baron. See Düringsfeld, i, 238.
- Reinsch, H., x, 155.
- Reinsdorf, Frederick A., ix, 358.
- Reischach, H. A., obit., i, 641.
- Reiset, experiments by, viii, 120.
- Reith, Mr., xii, 483.
- Reitschel, statue by, x, 361.
- Relies, domestic, xiv, 27.
- Religion, intolerance in the Tyrol, i, 59; iv, 67; v, 45; in Belgium, i, 71; v, 53, 54; in Bohemia, iv, 351; in China, i, 110; iii, 101; v, 690; in Corea, iii, 738; in Spain, i, 705, 729, 731; in Turkey, i, 261, 709, 759; v, 685; secularizing measures in Brazil, iii, 63; military honors refused at funerals where religious services are forbidden, i, 318; public aid to sects, i, 133, 138, 172-180, 261, 597; Department of Worship in France, vi, 305; intervention in cases of, vii, 627; legislation in Russia, viii, 708; coercion in Russia, ix, 710; Protestants in Egypt, ii, 284; Christians in India, iv, 495; New Hampshire amendment on, i, 591; persecution of Jews, see Jews; of Mussulmans, iii, 795; in Germany, ix, 356, 361; xi, 390; in Japan, ix, 419; statistics of, xvi, 843. See also Churches and Education.
- Religion, Society for the Liberation of, from State Control, iv, 34; v, 17; vi, 14; viii, 9; ix, 11; x, 22; xi, 17; xii, 13.
- Religious Orders, xviii, 660; xx, 650; expelled from France, v, 658; proposal to settle, in Spain, v, 673.
- Rembrandt, pictures by, x, 366; xi, 346.
- Remey, W. R., obit., xx, 588.
- Rensen, I., experiments by, vi, 99; viii, 121.
- Renan, E., sketch, xvii, 679.
- Renard-Krebs balloon, ill., ix, 72.
- Renfro, impeachment of, iv, 423.
- Renier, Charles A., obit., x, 667.
- Reno, M. A., sketch, xiv, 645.
- Reno, Nev., xvi, 168.
- Renouf, Emile, pictures by, x, 367; xi, 346.
- Renouf, P. le Page, researches by, vii, 256; xi, 32.
- Renville, Gabriel, obit., xvii, 569.
- Renwick, H. B., obit., xx, 588.
- Renwick, J., obit., xx, 588.
- Reorganized Church of Jesus Christ of Latter-day Saints, xviii, 668.
- Reporting-machine, xv, 818.
- Representatives, apportionment of, vii, 142; "Alabama paradox," 143.
- Reprieve, case of, iii, 818.
- Reproduction, xi, 763.
- Repsold's method of recording transits, xiii, 47.
- Repsolds, the, of Hamburg, ix, 47.
- Reptile fund, the, vii, 358.
- Reredos in St. Paul's, xiv, 12; xvi, 11.
- Reservations of lands, xiii, 471.
- Resin, separation of, x, 155.
- Resisting medium, xiii, 56.
- Resonant Alloys, i, 522.
- Resorcin, ix, 272.
- Respighi, Lorenzo, sketch, xiv, 669.
- Respiration, xi, 759; xii, 675; xiii, 692; xiv, 705; xv, 723; xviii, 626; xx, 657.
- Respiratory organs, xiii, 753.
- Resumption of specie payments, iv, 763.
- Retorts, platinum, i, 94.
- Retriever, the wavy-coated, ix, 257.
- Returning Boards. See Electoral Commission.
- Reuleaux, Prof., experiments in cinematics, i, 515.
- Reunion of Christendom, xx, 684.
- Reunion of Protestant Christendom, action in reference to, xii, 707-710; xvii, 680; xix, 693.
- Reuss, Edward, obit., xvi, 685.
- Reuter, Baron Jules, xi, 636.
- Reveillère, Capt., xi, 378.
- Revenue and Tariff, viii, 193.
- Revenue Chart (U. S.), colored plate, ix, 784.
- Revenue-Cutter Service, vii, 584.
- Revenue districts, viii, 780.
- Revenue reform, xiii, 194.
- Revillon, Tony, ix, 344; x, 378.
- Revillout, Eugene, researches of, vii, 262; x, 35.
- Revolt in Rio Grande, xviii, 101.
- Revolutionary War, claim of Georgia for money expended in, viii, 387; committee on claims, vii, 136.
- Revolutions. See Wars, etc.
- Rey, Paul, explorations by, vi, 330.
- Reykjavik, college at, iv, 314.
- Reynier, Emile, invention by, iii, 272; vii, 269.
- Reynolds, Emerson, experiments by, iii, 93; v, 86.
- Reynolds, J. F., statue, x, 362.
- Reynolds, Joshua, exhibition of pictures, x, 359, 360; sale, 361.
- Reynolds, L. K., obit., xviii, 566.
- Rgesholarsky, M., ix, 473.
- Rhalls, George, obit., viii, 603.
- Rhamsis, ix, 599.
- Rhett, R. Barnwell, sketch, i, 698.
- Rhode Island, in each volume; amendments to the constitution, i, 699; xi, 787; property exempt from taxation, 699; election of Governor Lippitt by the Legislature, 701; re-election of Senator Anthony, 701; census returns, 702; registration law, ii, 674; act regarding married women's property, 674; election of Governor Van Zandt, 675; re-election, iv, 770; act limiting indebtedness of towns and cities, iii, 728; to protect children 728; decision in reference to a husband's right to vote in virtue of his wife's property, 732; nature of property qualification, iv, 771; question of abolishing the tribal authority of the Narragansetts, 772; act amending the statute relating to the constitution and organization of the General Assembly, vi, 789; election of Governor Littlefield, v, 654; re-election, vi, 790; vii, 721; election of Senator Aldrich, vi, 791; re-election, xi, 787; invitation to representatives of France, 790; divorce in, viii, 691; ix, 698; election of Governor Bourn, viii, 692; re-election, ix, 698; colonial town records, ix, 698; State boundary uncertain, x, 710; population, 710; election of Governor Wetmore, 710; election of Governor

- Davis, xii, 714; working of the prohibitory amendment, xi, 788; xii, 712; population, xv, 754; new seal of, xix, 693; census of 1895, xx, 684.
- Rhodes, Mr., in Africa, x, 86.
- Rhodes, J. N., obit., xv, 662.
- Rhodes, R. S., audiphone, iv, 54.
- Riaz Pasha, vi, 237.
- Ribblesdale, Baron, obit., i, 641.
- Ribot, Augustin T., obit., xvi, 685.
- Ribot ministry, the, xx, 304.
- Ricasoli, Baron, on the Roman question, vii, 628; obit., v, 602.
- Ricco, A., observations by, xi, 546; viii, 22; xi, 546.
- Rice, A. H., obit., xx, 589.
- Rice, opposition to culture of, v, 483; production in the United States, vii, 722.
- Rice, C. A. T., sketch, xiv, 645.
- Rice, Edmund, sketch, xiv, 646.
- Rice, Harvey, obit., xvi, 651.
- Rice, Henry M., obit., xix, 595.
- Rice, N. L., obit., ii, 587.
- Rice, S. J., obit., xv, 662.
- Rice Strait, ix, 36.
- Richards, Alfred B., obit., i, 641.
- Richards collection, xii, 277.
- Richards, E. S., experiments, ii, 502.
- Richards, W., experiments, v, 208.
- Richardson, C. A., obit., xvi, 651.
- Richardson, E., sketch, xi, 697.
- Richardson, H. H., obit., xi, 698.
- Richardson, I. S., obit., xvii, 569.
- Richart collection, xi, 344.
- Richmond, Ind., xv, 142.
- Richmond, recent growth of, xi, 182; the advance to, x, 557 *et seq*; water, xix, 778.
- Richmond, Duke of, x, 450.
- Richmond, George, xi, 345.
- Richmond, W. B., x, 365; xii, 277.
- Richter, Adrian L., obit., ix, 621.
- Richter, E., speech by, vi, 346.
- Richter, Hermann E., obit., i, 641.
- Richthofen, Baron, obit., xiii, 668.
- Ricketts, James B., obit., xi, 608.
- Ricord, Philippe, sketch, xiv, 646.
- Riddell, J. L., ix, 507.
- Ridderhold, Hans, obit., i, 641.
- Riddleberger, H. H., obit., xv, 662.
- Rider, James, obit., i, 623.
- Ridgway, H. B., obit., xx, 589.
- Ridgway, Col., x, 5, 8, 12.
- Riding. See Horsemanship.
- Ridsdale, Rev. Mr., ii, 18 *et seq*.
- Riecke, F. J. P., obit., i, 641.
- Riedeck, E., expedition, viii, 386.
- Riel, Louis, x, 124, 129; obit., 711; sympathy for, 707, 713.
- Rifle-match, Wimbledon, viii, 418.
- Rifles, ii, 623, 624; illustrations, 623, 624; repeating, xii, 714; military, xiv, 734.
- Rights of married women, in Alabama, xii, 8; in Pennsylvania, 656. See Women.
- Riker, James, sketch, xiv, 646.
- Riley, Charles Valentine, his address, xiii, 44; obit. and port., xx, 589.
- Riley, Henry Chauncey, iv, 611.
- Riley, Henry H., sketch, xiii, 650.
- Riley, James, x, 579.
- Rimbaud, M., xii, 304.
- Ringer, Sidney, experiments by, vii, 691; viii, 633; ix, 661; x, 693; xii, 675.
- Rink, Henry J., obit., xix, 621.
- Rio Grande do Sul, conflict in, xvii, 66; xviii, 101; revolt in, xx, 94.
- Rion, James H., obit., xi, 698.
- Riot, election, xix, 495.
- Riots, Cœur d'Alène, xvii, 338.
- Riots, in Mississippi, ii, 528; in Colorado, v, 120; in Arkansas, vi, 31; in Kentucky, vii, 453; in New York in 1863, xi, 800; in Canton, viii, 128; in Cincinnati, ix, 630; in Belfast, xi, 403; in Amsterdam, xi, 607; in Belgium, xi, 81; xii, 66; in Austria, xii, 53; in Peru, xii, 661; anti-Christian, in China, xii, 117; railroad, xi, 341; religious, xi, 438; anti-Christian, xvi, 139; anti-Jewish, xvi, 349; labor, xiii, 747; religious, xvi, 373; in eoke region, xvi, 717; in Paris, xviii, 324; in Roanoke, xviii, 752; labor, Franco-Italian, xviii, 327; labor, in Illinois, xviii, 398; religious, in India, xviii, 403. See Labor Strikes.
- Ripley, George, sketch, v, 657.
- Ripley, R. S., obit., xii, 608.
- Ripon, Marquis of, Viceroy of India, v, 384; his policy, vii, 416; his administration, x, 794.
- Ritchie, A. H., obit., xx, 590.
- Ritchie, John, ix, 54; x, 55.
- Ritseh, Albrecht, sketch, xiv, 669.
- Ritschl, Friedrich, sketch, i, 702.
- Ritter, Frederic L., obit., xvi, 652.
- Ritter, invention by, vi, 254.
- Ritualism, in the Anglican Church, i, 25; the confessional, ii, 17, 21; vestments, ii, 18, 19; controversy, vi, 15; trials for, iv, 31, 32, 33; vii, 14, 17; viii, 6; ix, 10, 11.
- River and Harbor bill, vii, 148.
- Rivers, African, rise of, iv, 406; other phenomena of, iv, 407.
- Rivers, fluctuations of, iv, 805; channel improvements in, v, 273; devices to prevent shifting of channels, v, 249.
- Rivers, the longest, xii, 316.
- Rivière, Briton, x, 359, 365; xii, 277.
- Rivière, Henri, obit., viii, 604.
- Riza Bey, mission of, xii, 79.
- Roach, J., x, 760; obit., xii, 716.
- Road congress, xvii, 353.
- Road conventions, xvii, 18, 357; xviii, 755.
- Roads, wagon, in Idaho, xviii, 395; good, in Massachusetts, xx, 463.
- Roanoke, Va., xix, 142.
- Robber bands in Missouri, vii, 567.
- Robbins, Chandler, obit., vii, 642.
- Robecchi, L., xii, 304.
- Roberts, Arthur, obit., xi, 725.
- Roberts, C., experiments, viii, 524.
- Roberts, Frederick, v, 6; vi, 87; x, 13; xii, 82. See Afghan War.
- Roberts, Isaac, xi, 51.
- Roberts, J., obit., xvii, 569.
- Roberts, John J., obit., i, 642.
- Roberts, Marshall O., sketch, v, 658.
- Roberts, Milton J., obit., xviii, 566.
- Roberts, S. W., obit., vii, 642.
- Roberts, W. Chandler, xi, 536.
- Robertson, C. F., obit., xi, 698.
- Robertson, G. C., obit., xvii, 602.
- Robertson, James B., obit., ii, 609.
- Robertson, John, obit., xii, 609.
- Robertson, W. H., appointment of, vi, 644.
- Robiano, Eugene de, vii, 99.
- Robie, Frederick, sketch, vii, 498.
- Robilant, Count, xii, 397.
- Robinson, Dr., ix, 27.
- Robinson, A. P., obit., xviii, 566.
- Robinson, Charles, obit., xix, 595.
- Robinson, E. G., obit., xix, 595.
- Robinson, G. D., ix, 471; x, 573.
- Robinson, James I., obit., xix, 596.
- Robinson, Sir Hereules G. R., sketch, v, 79; x, 87, 88, 134, 419; xii, 258.
- Robinson, James Lowrie, iv, 690.
- Robinson, J. S., obit., xvii, 569.
- Robinson, J., monument, ii, 132.
- Robinson, John, sketch, xiii, 650.
- Robinson, Lucius, sketch, i, 606; obit., xvi, 652.
- Robinson, Moncure, obit., xvi, 652.
- Robinson, W. C. F., ix, 60.
- Robinson, W. E., obit., xvii, 570.
- Robinson, W. M., obit., xviii, 566.
- Robinson, William S., obit., i, 623.
- Rob Roy, the canoe, ix, 108.
- Robson, B. R., obit., iii, 644.
- Roca, Gen. Jules A., inaugural of, v, 22; x, 39; in command in Argentine Republic, xviii, 18.
- Roche-grosse, Georges, x, 363; xi, 343; xii, 276.
- Rochester, N. Y., recent growth of, xi, 182; view in, ii, 570; water, xix, 778.
- Rochester, T. F., obit., xii, 609.
- Rochholz, E. L., obit., xvii, 602.
- Rock-cut tombs of Sidon, xii, 24; xiii, 27, 31.
- Rockford, Ill., xv, 143.
- Rock Island, Ill., xv, 143.
- Rock-salt beds, xii, 726.
- Rockwell, Julius, sketch, xiii, 650.
- Rodgers, C. R. P., ix, 54; obit. and port., xvii, 570.
- Rodgers expedition, the, vi, 323; viii, 162.
- Rodgers, John, sketch, vii, 722; x, 265.
- Rodgers, Raymond P., vii, 107.
- Rodney, C., monument, xiv, 265.
- Rodney, G. B., obit., viii, 593.
- Rodney, John, obit., xi, 698.
- Rodrigues, J. C., x, 178.
- Roe, Major C. F., port., xx, 511.
- Roe, E. P., obit., xiii, 651.
- Roebing, John A., viii, 311, 313.
- Roebing, W. A., viii, 313.
- Roemer, Jean, obit., xvii, 570.
- Rogers Bey, obit., ix, 621.
- Rogers, David L., obit., ii, 587.
- Rogers, F., collection, xi, 347.
- Rogers, Ferdinand, obit., i, 623.
- Rogers, Henry, obit., ii, 609.
- Rogers, J. E. T., obit., xv, 687.
- Rogers, John, x, 362.
- Rogers, John, xix, 596.
- Rogers, telescope of, i, 554.
- Rogers, R., obit., xvii, 571.
- Rogers, William B., port., xv, 576.
- Rogier, C., obit., x, 661.
- Rogozinski, x, 120, 122.
- Rokitanski, Baron von, iii, 732.
- Roll, Alfred P., x, 363.
- Rolland, P. C. A., obit., i, 642.
- Roller-skates, ix, 736.
- Rollet, Dr. A., ix, 518.
- Rollins, E. H., obit., xiv, 647.
- Rollins, J. S., sketch, xiii, 651.
- Roloson, J. W., obit., xv, 662.
- Romaine, W. G., obit., xviii, 585.



- Roman baths, xiii, 24.  
 Roman Question, the, vii, 627.  
 Roman Catholic Church, in every volume; brief of the Pope to a German bishop, i, 703; aggressive measures of the Italian Government, i, 703, 704; superior instruction to be given only in Government schools, 703; theological students not exempt from military service, 703, 704; seizure of foreign colleges in Rome, 704; interference with services in Germany, 704; release and banishment of Cardinal Ledóchowski, 704; deposition of the Bishop of Münster, 704; church property to be administered by Government, 704; church schools closed, 704; the Pope to the Bishop of Paderborn, 704, 705; arrest of pilgrims at Marpingen, 705; trial of Bishop Janiszewski, 705; University of Paris, 705; festival of Lourdes, 705; liberty of worship discussed in Spain, 705; the Pope's brief to Spanish bishops on maintaining the Concordat, 705; anti-Catholic measures in Russia, 705, 706; return to Turkey of the banished Armenian Patriarch, 706; monastery founded in Scotland, 706; the public-school system in the United States, 706, 707; liberal movements in the Spanish-American republics, 707; Brazil, anti-clerical attacks, 707; missionary martyrs, 707; necrology, 707; ii, 682; iii, 738; iv, 774; v, 659; x, 713; xi, 789; the Pope's decree inserting certain words in the creed of Pius IV, ii, 676; allocution on the situation, 677, 681; clerical abuses bill, 681; episcopal jubilee of Pius IX, 681; seizure of churches, 681; condition of the Church in various countries, 682; death of Pius IX, iii, 732; election and coronation of Leo XIII, 732; restoration of the hierarchy in Scotland, 732; the Pope's policy foreshadowed, 733; intercourse with German and Swiss Governments, 736; negotiation with Russia in reference to the Catholic Poles, 736; no direct communication with King Humbert, 736; societies in Italy encouraged, 736; persecutions in Germany, 736; churches in Switzerland transferred to Old Catholics, 736; clerical cases in the United States, iii, 737; affairs in Colombia, 738; persecutions in Corea, 738; encyclical against socialism, iv, 773; schisms in the Eastern churches, 773; opposition to the Ferry laws, 773; operation of the Falk laws, 773; Italian civil-marriage law, 774; school-conflict in Belgium, 774; confraternities in Brazil, 774; New York cathedral, 774; Italy, v, 658; suppression of religious orders in France, 658; agreement with the Russian Government, 658; the Pope's position in Rome, vi, 792; seizure of property of the Propaganda, 792; order for its sale, ix, 699; disturbances at the removal of the body of Pius IX, vi, 792; jubilee proclaimed, 792; the papal theory of government, 792; agitation to restore the temporal power, 792; action of Prussia, 792; canonizations, 792; Knights of St. John, 792; hostility of the French cabinet, 793; action of the Irish clergy as to the Land League, 793; the Church in the United States, 793; vii, 726; litigation as to property, vi, 793, 794; semi-centennial of Sisters of Mercy, 794; official acts of Leo XIII, vii, 723; the encyclical, 723; case of Martinucci involving jurisdiction, 724; the Church in Germany, 725; French Government hostile, 726; viii, 694; seizure of property in Italy, viii, 692; the Vatican library open to historical students, 692; the Pope's letter on the Irish agitation, 693; case of Louise Lateau, 694; hostility in Belgium, 694; the American college at Rome, ix, 699; historical societies in America, 700; missions, 700; encyclical, *Immortale Dei*, x, 712; Order of Pius IX, x, 712; conflict with Orangemen in Newfoundland, x, 629; freedom of worship bill, ix, 700; x, 634; Church in China, 169, 170; relations with Russia, ix, 710; Concordat in Ecuador, 282; Golden Jubilee, xii, 716; Dr. McGlynn excommunicated, 717; envoy at the English court, 717; hierarchy established in India, 382.  
 Roman question, the, xvi, 388.  
 Roman relics, ix, 22, 23, 26.  
 Roman wall, xiii, 24.  
 Romance, an Egyptian, xi, 32.  
 Romanes, G. J., obit. and port., xix, 596.  
 Romanz, J. J., obit., ix, 621.  
 Rome, ancient mansions in, ix, 26; illustrations, ancient and modern map of, ii, 408; Piazza del Popolo, 409; the Lateran, 409; castle of St. Angelo, 411; capitol, i, 421; St. Peter's and the Vatican, 704; xiv, 157; discoveries in, xiv, 19.  
 Rome, N. Y., xviii, 118.  
 Romilly, H. H., ix, 639.  
 Rondel, Frederic, obit., xvii, 571.  
 Röntgen, invention by, iii, 545.  
 Rook Island, x, 681.  
 Roome, C., obit., xv, 662.  
 Room, A. T. E., sketch, iv, 774.  
 Roosevelt, Mrs. C., obit., i, 623.  
 Roosevelt, Theodore, obit., iii, 644.  
 Root, G. F., obit. and port., xx, 590.  
 Roots, Logan H., obit., xviii, 566.  
 Rope. See Cordage.  
 Ropes, Ripley, obit., xv, 662.  
 Rope-clamp, xvi, 708.  
 Rope-walks, xiii, 248 *et seq.*  
 Roraima, Mt., ix, 539; x, 400.  
 Rosa, Carl A. G., sketch, xiv, 669.  
 Roscher, Wilhelm, obit., xix, 621.  
 Roscoe, Sir Henry E., xii, 100.  
 Rose, Sir John, sketch, xiii, 668.  
 Rosebery, Archibald, P. P., sketch and port., xix, 700.  
 Rosebery, Cabinet, the, xix, 334.  
 Rosebery, Countess, obit., xv, 687.  
 Roscerans, Gen., retired, xiv, 222.  
 Rosegg, figure from, ix, 23.  
 Rosenbach, Gen., x, 6.  
 Rosenthal, Toby, xii, 279.  
 Rosetti, experiments by, iii, 92.  
 Rosetti, C. X., reform plan of, in Roumania, vii, 729, 730; obit., x, 667.  
 Rosewood, exportation from Costa Rica, xii, 211.  
 Roshan, state of, x, 2.  
 Rosina, Sister M., see Whiteman, Margaret, xix, 597.  
 Ross, Mr., ix, 51.  
 Ross, A. M., sketch, iii, 739.  
 Ross, Sir David, obit., i, 642.  
 Ross, L. S., renominated, xiii, 767.  
 Ross, M. D., obit., xvii, 571.  
 Ross, Sobieski, obit., ii, 587.  
 Ross, William H. H., obit., xii, 609.  
 Rossetti, Christina G., sketch and port., xix, 701.  
 Rossetti, D. G., obit., vii, 647; xii, 278.  
 Rossetti, Lucy, obit., xix, 621.  
 Rostov, xi, 792.  
 Rotch, Arthur, obit., xix, 597.  
 Rotelli, Luigi, obit., xvi, 685.  
 Rothermel, P. F., obit., xx, 590.  
 Rothschild, Sir A., obit., i, 642.  
 Rothschild, Baron, obit., iv, 701.  
 Rothschild, M. C., obit., xi, 725.  
 Rothschild, Nathan, x, 606.  
 Rotumah Island, annexed, vi, 47.  
 Rouckendorf, W., obit., xvi, 652.  
 Roudaire, Capt., survey in Africa, ii, 328; obit., x, 667.  
 Rouge, M. de, researches, vii, 257.  
 Rouher, E., v, 284; obit., ix, 621.  
 Rouland, Gustave, obit., iii, 661.  
 Roumania, i, 767; ii, 683; iii, 739; v, 659; vi, 794; vii, 726; viii, 695; ix, 700; xix, 703; xx, 691; article on, in Berlin Treaty, iii, 257; dissatisfaction, 740; act to prevent Jews from buying lands, 740; attitude toward Danube Commission, viii, 270, 272; ix, 702; constitution revised, ix, 702; x, 713; Jews in, ix, 703; x, 714; tariff-war in, x, 377; xii, 720; attempted assassination of the prime minister, 719; crisis in, 720; xiii, 718; xiv, 749; xv, 759; xvi, 775; xvii, 687; xviii, 677.  
 Roumanian marriage, ix, 697.  
 Roumelia, ix, 103; xi, 100; Eastern, x, 753; in favor of the Bulgarian union, 753, 754; Alexander made governor-general of, x, 754. See also Eastern Roumelia.  
 Round Table, the, xii, 336.  
 Rouquette, Adrian, obit., xii, 609.  
 Rous, Admiral, obit., ii, 609.  
 Ronseau, Emile, sketch, xiii, 665.  
 Rousseau, invention, i, 516.  
 Rousseau, P., x, 367; obit., xii, 636.  
 Rousset, Camille, obit., xvii, 602.  
 Routledge, G., obit., xiii, 722.  
 Routt, John Le, i, 121; ii, 109.  
 Rouvier cabinet, the, xii, 291.  
 Roux, on Panama Canal, vi, 715.  
 Rowan County disorders, xiii, 463.  
 Rowan, S. C., obit., xv, 663.  
 Rowe, George F., sketch, xiv, 647.  
 Rowett, Richard, obit., xii, 609.  
 Rowland, discovery by, vi, 97.  
 Rowlands, Rev. J., ix, 27.  
 Rowley, W. R., obit., xi, 698.

- Royal pectoral of Dashur, illustration, xix, 22.  
 Royal succession, the, in France, viii, 106.  
 Royall, W. B., obit., xx, 591.  
 Royce, Homer E., obit., xvi, 653.  
 Rubens, Peter Paul, sale of pictures by, x, 359, 361, 365, 366.  
 Ruberine, vii, 88.  
 Rubies, discovery of, xii, 311.  
 Rubinstein, Anton G., sketch and port., xix, 704.  
 Rubner, investigations by, vi, 676.  
 Rubus Chamamorus, xi, 291.  
 Ruby, the, xviii, 643.  
 Ruchonnet, L., obit., xviii, 586.  
 Rudersdorff, E. M., obit., vii, 643.  
 Rudolf, Archduke, sketch, xiv, 750.  
 Rudolph, crown prince of Austria, marriage of, vi, 51.  
 Ruffin, George Lewis, obit., xi, 699.  
 Ruffier, Lieut. E. H., x, 402.  
 Ruffo-Scilla, xii, 717; obit., xx, 616.  
 Ruge, Arnold, obit., v, 603.  
 Ruger, W. C., obit., xvii, 571.  
 Ruggles, Prof. W., obit., ii, 587.  
 Rugs, viii, 96.  
 Rukhmabai, legal suit of, xii, 382.  
 Rule of the Road, xviii, 678.  
 Rumington, process of, ix, 658.  
 Rumpff, Herr, murder of, x, 417.  
 Rumpff, Karl, sketch, xiv, 669.  
 Rumsey, H. B., obit., xii, 610.  
 Runberg, J. L., obit., ii, 609.  
 Rupsch, ix, 358.  
 Rushforth, W. H., obit., xvii, 571.  
 Rushton, John, obit., xi, 699.  
 Rusk, Jeremiah M., sketch and port., xiv, 804; obit., xviii, 566.  
 Russell, Alexander, obit., i, 642.  
 Russell, Earl, sketch, iii, 740.  
 Russell, Scott, obit., vii, 647.  
 Russell, W. E., nominated, xiii, 520.  
 Russia, in every volume; views, i, 709, 710, 712; ii, 686-689; Eastern question, i, 708, 711; see Eastern question; the Czar's visit to the Crimea and speech at Moscow, 709; mobilization of the army, 709; Gortchakoff's views, 710, 711; separate administration in the Balkan provinces abolished, 711; changes in the Polish judiciary, 711; the Little Russian dialect forbidden in literature, 711; Finland canal, 711; conquest of Khokan, 711; congress of orientalists, 711-718; war declared against Turkey, ii, 688; see Turkey; trials of socialists, 688; origin of the Propagandists, 688; law about railroad stock, 689; commercial disasters, 689; additions by the treaty of Berlin, iii, 741; losses by the war, 742; the navy, 742, 743; reception of news of the congress of Berlin, 744; frauds in the commissariat, 744; trial of Vera Sassaulich, 744; attempt to assassinate Trepoff, 744; a shock to the government, 745; students and nihilists, 745; condition of society, 745, 746; proposed mixed occupation of Roumelia, iv, 775; war in Turkistan, 775; suspected designs on Merv, 775; victories of the Tekke Turkomans, 776; course of the Attrek turned, 776; attempts on the Czar's life, 776, 778; nihilist plots, 777; v, 662; trials, 665; reforms proposed, iv, 778; secret presses, v, 662; winter-palace explosion, 662; attempt to kill Loris-Melikoff, 663; the Hartman affair, 665; convention with the Vatican, 665; reclamation of marshes, 666; conciliation of Poland, 666; annexed province of Kars, 666, 667; assassination of the emperor, vi, 795-797; efforts to suppress nihilism, 796; trial and execution of the regicides, 797, 798; measures to protect the new Czar, 798; complicity of Duke Constantin, 798; arrests, and designs of the nihilists, 798-800; proposed reforms, 799; changes in the ministry, 799; secret correspondence of the Government, 800; advances in Asia, see Russian advances in Asia; emancipation of the serfs, 800-802; resignation of Gortchakoff-Giers ministry, sketch of M. Giers, vii, 734; great debt, 735; persecution of Jews, 735; viii, 709, 711; Ignatieff succeeded by Tolstoi, vii, 736; nihilist plots and murders, 737; viii, 709; ix, 711; x, 718; xii, 723; oil and minerals found, viii, 700; coronation of the emperor, 704; German provinces, 708; reconciliation with Austria, ix, 63; censorship of the press, ix, 708, 709; reaction against education, 709; meeting of emperors, 712; the Petersburg sea-canal, x, 716; the Bulgarian revolution and the Baltic provinces, 719; laws against foreigners, xii, 724; constitutionalist conspiracy, 723; drainage of marshes, 313; famine in, xvii, 693; tariff war with Germany, xviii, 682.  
 Russian advances in Asia, ii, 6; iii, 2, 33, 97, 404; iv, 9; vi, 732, 800; vii, 415, 681, 734; viii, 706; territory gained, iii, 258; annexation of Merv, viii, 706; ix, 313; other operations in Asia, ix, 6, 712, 713; x, 1, 14, 720; relations with China, ix, 714.  
 Russian Government, the, vi, 800.  
 Russian language, act to establish, in literature, i, 711.  
 Russian prisons, xii, 704.  
 Russian Turkistan, ix, 712.  
 Russians, troubles with the Chinese, v, 101; aid of, to Persia, v, 623.  
 Russo-Afghan boundary, xiii, 7.  
 Russo-Turkish War. See Turko-Russian War.  
 Rüstow, Wilhelm, obit., iii, 661.  
 Rutherford, George V., obit., i, 623.  
 Rutherford, L. M., obit., xvii, 571.  
 Rutland, C. C. J. M., obit., xiii, 668.  
 Rutland, Vt., xvii, 119.  
 Ryall, explorations by, iv, 400.  
 Ryan, Abram J., obit., xi, 699.  
 Ryan, George P., obit., ii, 587.  
 Ryder, Lieut., xii, 316.  
 Ryder, J. A., obit., xx, 591.  
 Ryerson, A. E., obit., vii, 643.  
 Ryle, John, obit., xii, 610.  
 Ryssakoff, vi, 796.  
 Saavedra, discovery by, x, 138.  
 Sabbath, Congress for promoting the observance of, i, 740; Union, American, xv, 767; xviii, 699.  
 Sabin, C. B., obit., xv, 663.  
 Sabine, Sir Edward, obit., viii, 604.  
 Sabine, Lorenzo, obit., ii, 587.  
 Sablin, N., vi, 796, 797.  
 Sacaline, xx, 765.  
 Saccharinates, xi, 291.  
 Saccharine, xii, 109.  
 Saccharomyces mycoderma, illustration, ix, 498.  
 Sachan, E., explorations, viii, 385.  
 Sachs, experiments, x, 690, 695.  
 Sachsse, Robert, x, 153.  
 Sackett, Major-Gen. F. M., port., xx, 509.  
 Sackville-West, xiii, 269.  
 Sacramento, Cal., recent growth of, xi, 183; Capitol at, illustration, xi, 81.  
 Sacrificial Calendar-stone, ix, 18.  
 Sa Da Bandeira, Viscount, sketch, i, 713.  
 Sadi-Carnot. See Carnot.  
 Sadowa, battle of, x, 382.  
 Sadtler, S. P., discovery by, vi, 97.  
 Safarik, observations, viii, 24.  
 Safe-deposit companies, x, 294; list of, 294, 295.  
 Safety of life on railroads, xviii, 214.  
 Saffi, A., obit., xv, 687.  
 Safford, Mary J., obit., xvi, 653.  
 Saftoi, xi, 292.  
 Saft-el-Ilenneh, x, 36.  
 Saftvet Pasha, sketch, ii, 689; obit., viii, 604.  
 Sagallo incident, the, xiv, 2.  
 Saganeti, battle at, xiii, 4.  
 Sagasta, speeches of, vi, 818, 819; ix, 741; x, 739; xi, 808.  
 Saghalian, exchanged for Kurile Islands, i, 427; colonization of convicts in, x, 397.  
 Saginaw, xv, 144.  
 Sahara, exploration of the, vi, 327; x, 393; proposed railway, v, 293; scheme for flooding, iv, 340; viii, 308; Spanish protectorate over the western, xii, 305.  
 Said Pasha, reforms proposed by, vii, 803; dismissed, 803; recalled, 804.  
 Sailors' Creek, fight at, x, 430.  
 Sainsbury, W. N., obit., xx, 616.  
 St. Albans, Vt., xvii, 119.  
 Saint Anand, pen-name, x, 663.  
 Saint Augustine, fire, xii, 717.  
 Saint Bartholomew, island of, bought by France, ii, 319; iii, 777; price returned, for a charitable institution, iv, 824.  
 Saint Bernard dog, the, ix, 259.  
 Saint-Bon, obit., xvii, 603.  
 St. Cloud, xv, 144.  
 Saint Croix, island of. See in articles on the West Indies.  
 Saint-Denis, Marquis Hervey de, obit., xvii, 603.  
 Saintin, J. E., obit., xix, 621.  
 St. Elias, Mt., attempt to ascend, xiv, 362.  
 Saint Gaudens, Augustus, works of, ix, 245; x, 361; xii, 280.  
 Saint Germans, Earl, obit., ii, 612.  
 Saint Gothard Railway and Tunnel, ii, 706; iii, 778; v, 667; vi, 819; vii, 11; illustrations, vi, 820, 821.  
 St. Helena, xvi, 345; xvii, 327.  
 Saint-Hilaire, Jules B. de, on Greek



- boundaries, vi, 375; v, 285; obit., xx, 616.
- Saint Hilaire, Emile Mareo de, obit., xii, 636.
- St. John, Charles, obit., xvi, 653.
- St. John, D. B., obit., xv, 663.
- Saint John, I. M., sketch, v, 673.
- Saint John, John P., v, 420; ix, 774, 775.
- Saint John, N. B., xii, 128.
- Saint John, R., iii, 468.
- St. John's, N. F., great fire, xvii, 494; xviii, 511.
- Saint Joseph, growth of, xi, 183; water, xix, 779.
- St. Lawrence, canals, xiii, 284.
- Saint Louis, growth of, v, 539; article on recent growth of, xi, 183; illustrations, i, 567; ii, 530; xiv, 567; water, xix, 779.
- Saint Lucia Bay, x, 137.
- Saint Lucia Island, xii, 802.
- St. Mary's Falls Canal, xiv, 754.
- Saint Paul, Minn., recent growth of, xi, 184; illustration, ii, 522; water, xix, 779.
- Saint Paul's Cathedral, London, illustration, ii, 362.
- Saint Petersburg sea-canal, x, 716.
- Saint Simonists. See David, i, 220.
- Saint Vallier, obit., xi, 725.
- Sala, G. A. H., obit., xx, 616.
- Salah-Aga-el-Mek, viii, 299.
- Salamanca, Gen., x, 142; xii, 740; obit., xv, 638.
- Salamanca, Marquis, obit., viii, 604.
- Saldanha, Oliveira E. Daun, Duke of, sketch, i, 713.
- Saleh, Sheik, ix, 301.
- Salem, Ore., xvi, 169.
- Salembini, Count, xii, 2, 3.
- Saletta, Gen., xii, 3; xiii, 3.
- Salicylic acid, synthesis of, ix, 425.
- Saline Springs, x, 596.
- Salisbury, Marquis of, x, 721; portrait, 448; iii, 244; ix, 374, 375; x, 18; cabinet of, x, 448; xx, 336.
- Salkowski, researches, viii, 637.
- Salmeron, xi, 808.
- Salmon, ix, 636, 800; fishery, xiii, 672; fishing in British Columbia, xviii, 109; in Oregon, xviii, 597.
- Salol, xi, 292.
- Salomon, L. E. F., xiii, 668.
- Salor Turkomans, x, 4, 5, 6, 7.
- Salt, beds of rock, in Ontario, xii, 726; mining, in New York, xii, 725; in Michigan, iv, 581; new fields of, xv, 767.
- Salt-deposits, formation of, ii, 92.
- Salt, John, xii, 480.
- Salt Lake City, tabernacle in, illustration, ii, 756; xiv, 158; statistics, xvii, 771.
- Salt, solution of a, x, 149.
- Salt-tax, in India, vii, 417; in Russia, vii, 733.
- Salt, W. P., obit., xv, 663.
- Salts of copper, poisonous properties of, xii, 680.
- Saltus, Francis S., sketch, xiv, 647.
- Saltykoff, Michael, sketch, xiv, 669.
- Salvador, i, 22; xiii, 729; xiv, 756; xv, 768; xvii, 693, xviii, 683; war, iii, 747; vi, 803; viii, 710; ix, 714; x, 722, 467; xii, 727; war against, xv, 410; xvi, 785; xix, 708; xx, 695; prehistoric pottery work, xix, 17.
- Salvation Army, viii, 710; xvi, 787; xix, 709; xx, 695; in Canada, ix, 676; in Switzerland, ix, 754; x, 452.
- Salvini, v, 409.
- Samaria, a new earth, x, 156.
- Samarium, vi, 98.
- Samoa, xiii, 730; xiv, 218, 756; xv, 769; xviii, 683; xix, 710; with map, xiii, 730; xx, 695; Tamasese rebellion, xix, 710.
- Samoa Islands, treaty of, with Germany, iv, 442; xi, 792; map of, 793; xii, 728; American interests at, 732; Germany declares war on, 730; King Malietoa deposed, 731.
- Samos, aqueduct of, xi, 34.
- Sampson, observations, viii, 20.
- Sampson, W. T., experiments by, iv, 134.
- San (Zoan), ix, 19, 600.
- San Antonio, Texas, recent growth of, xi, 184.
- Sanctuary, the right of, ix, 282.
- Sand, George, sketch, i, 713.
- Sanday, invention by, x, 345.
- Sandberger, Dr., xi, 538.
- Sandborn, John S., obit., ii, 610.
- Sand-dunes, control of, x, 333.
- Sandean, Jules, obit., viii, 604.
- Sandeman, Sir Robert, i, 74; ii, 70; ix, 6, 7; x, 395; xi, 6.
- Sanders, observations, vii, 39.
- Sanderson, J. S. B., port., xviii, 31.
- San Diego, xii, 128.
- Sand-hills, settlement, xviii, 504.
- Sandhurst, W. R. Mansfield, i, 715.
- Sands, B. F., obit., viii, 593.
- Sands, E., obit., xv, 663.
- Sands, H. B., obit., xiii, 735.
- Sands, Joshua R., obit., viii, 594.
- Sands, Samuel, obit., xvi, 653.
- Sandusky, O., xii, 129.
- Sandwich Islands. See Hawaii.
- Sanha, story of, xi, 32.
- Sanford, Charles W., obit., iii, 645.
- Sanford, E. I., obit., xviii, 567.
- Sanford, Henry S., obit., xvi, 653.
- Sanford, John L., obit., ii, 610.
- San Francisco, vote on new charter, v, 78; trade of, x, 118; recent growth of, xi, 184; laundry ordinance, ix, 430; illustration, city hall, ii, 82; water, xix, 779.
- Sangai, Mt., ix, 541; view of, 542.
- Sanitary Commission, vii, 718.
- Sanitary Conference, appropriation for, vi, 142; x, 506; xvii, 362; International, xviii, 349; in Paris, xix, 292.
- Sanitary Congress in Peru, xii, 663.
- Sanitary Progress, xviii, 704.
- Sanitary Science, ix, 716.
- San José, vii, 177; xii, 129.
- San Marzano, Gen., at Massowah, xiii, 3; relieved, 4.
- Sampoo River, the, identical with the Brahmapootra, iv, 399.
- Sans, A., discovery by, vi, 20.
- San Salvador. See Salvador.
- Sansas, Pierre, obit., ii, 610.
- San Stefano, Treaty of, iii, 292, 396, 402, 739, 791, 798.
- Santa Anna, sketch, i, 715.
- Santa Cruz, celebration at, ix, 804.
- See also West Indies, in vols. viii, ix, x, and xii.
- Santa Fé, xiii, 171.
- Santa Maria, D., sketch, vi, 806; message of, viii, 63; ix, 131; ex-communicated, x, 165; attempt to kill, 165.
- Santiago, Cuba, ill., xx, 212.
- Santini, Giovanni, obit., ii, 610.
- Santo Domingo, proposed annexation of, i, 685; x, 435; article, viii, 712; ix, 730; x, 723; xii, 732; rebellion in, 733; xiii, 736; xiv, 760; xv, 769; xvi, 787; xvii, 694; xviii, 685; xix, 711; xx, 696; political conspiracy, xix, 712; quarrel with France, xix, 712.
- Santonate of atropine, xi, 292.
- Santos case, the, x, 303.
- Santos, President, attempt to kill, xii, 787; sketch, xiv, 669.
- Santos, riot in, xvii, 67.
- Sappey, experiments by, vi, 751.
- Sapphire, mines, xvi, 541; xviii, 644.
- Sarakhs, taken by Russia, ix, 6, 648, 713; x, 4, 5, 12.
- Saratoga Springs, xiii, 172.
- Sarawak, xiv, 399; xv, 404; xvi, 344; xvii, 326.
- Sargent, Aaron A., obit., xii, 610.
- Sargent, Epes, sketch, v, 667.
- Sargent, J. E., obit., xv, 664.
- Sargent, John S., xii, 277.
- Sarhad Mountains, ii, 325.
- Sarik Turkomans, the, x, 4, 5, 6, 7.
- Sarmiento, D. F., sketch, xiii, 668.
- Särnström, experiments, viii, 520; x, 576.
- Sartorius, Sir G. R., obit., x, 667.
- Sartorius Pasha, ix, 293.
- Sarun tribe, the, ix, 7.
- Sarzeaud, Martin, incident, xii, 243.
- Sarzek, researches of, vii, 263.
- Saskatchewan Territory, viii, 81; ix, 270.
- Sassulitch, Vera, assassination attempted by, iii, 744; effect of acquittal of, iv, 682.
- Satellites, orbits of, xi, 53; of the planets. See under Astronomy in each volume.
- Satsuma, rebellion in, ii, 414.
- Sattara, annexed, ix, 346.
- Satterlee, Richard S., obit., v, 595.
- Satterlee, Walter, xi, 346.
- Saturn, rings of, i, 46; ii, 45; iii, 36; xx, 55; rotation of, ii, 45; orbit of Hyperion, 46; density of, iv, 52; system of, viii, 23; its mass and satellites, ix, 50; xii, 42; rings, 50, 51; xiii, 53; xiv, 46; xv, 40; diameter of, xix, 50.
- Saul, King, descendants of, ix, 7.
- Saulnier, John, xi, 344.
- Saulsbury, Eli, obit., xviii, 567.
- Saulsbury, W., obit., xvii, 572.
- Sault Ste. Marie, xv, 144; canal, xx, 249.
- Saunders, John, obit., xx, 617.
- Saunderson, Col., xii, 340.
- Savage, G. W., obit., xix, 597.
- Savage, J., obit. and port., xiii, 736.
- Savages (independents), ix, 69, 72, 362.
- Savanilla, xii, 756.
- Savannah, Ga., xi, 186.
- Save, Carl, obit., i, 642.
- Savings-bank, post-office, xii, 687.
- Savoiron, Count, xii, 3.
- Savory, Sir W. S., obit., xx, 617.
- Savoy, neutrality of, vi, 829.
- Sawdust game, the, xiv, 230.
- Sawyer, Caroline M., obit., xix, 597.
- Sawyer, Charles C., obit., xvi, 653.

- Sawyer, E. F., observations by, iii, 37; iv, 52; vii, 40.  
 Sawyer, F. A., obit., xvi, 653.  
 Sawyer, George Y., obit., vii, 643.  
 Sawyer, Henry W., obit., xviii, 567.  
 Sawyer, Lorenzo, obit., xvi, 653.  
 Sawyer, Sylvanus, obit., xx, 591.  
 Sawyer, W. E., invention by, i, 520; v, 240.  
 Sax, Adolphe, obit., xix, 621.  
 Saxe-Coburg, Duke, xviii, 349.  
 Saxe, John G., sketch, xii, 733.  
 Saxifragine, x, 343.  
 Say, Léon, sketch, ii, 320; President of Senate, v, 281.  
 Saybolt, oil-tester of, viii, 464.  
 Sayce, A. H., ix, 23.  
 Sayn-Wittgenstein, Caroline, obit., xii, 636.  
 Sayn-Wittgenstein-Sayn, Prince, obit., i, 642.  
 Sayre, David M., obit., i, 623.  
 Sbarbaro, Signor, trial of, xi, 454.  
 Scammon, E. P., obit., xix, 597.  
 Scammon, J. Y., obit., xv, 664.  
 Scandium, discovery of, ix, 119.  
 Schaafhausen, Prof., obit., xviii, 586.  
 Schaarschmidt, Jules, experiments by, x, 695.  
 Schäberle, J. M., discoveries by, v, 35; vi, 39.  
 Schaff, Philip, obit., xviii, 567.  
 Schaffner and Helbig, experiments by, viii, 115.  
 Schall, M., xii, 111.  
 Scharf, Sir G., obit., xx, 617.  
 Schauffler, M. R., obit., xx, 591.  
 Schaus, W., obit., xvii, 572.  
 Schell, Augustus C., obit., ix, 611.  
 Schem, Alexander J., obit., vii, 643.  
 Schenck, Karl E., obit., xx, 617.  
 Schenck, R. C., obit., xv, 664.  
 Schenectady, growth of, xii, 129.  
 Scherer, Edmond, sketch, xiv, 669.  
 Scherer, Wilhelmj, obit., xi, 725.  
 Scherr, Archbishop, obit., ii, 610.  
 Scherr, Johannes, obit., xi, 725.  
 Seheurl, C. G. A., obit., xviii, 586.  
 Schiaparelli, observations by, viii, 20, 24; xi, 54.  
 Schieffeln, E., vii, 7.  
 Schilling, monument designed by, vii, 399.  
 Schimper, A. F. W., discoveries by, ix, 92, 93.  
 Schinz, Dr. H., xii, 306.  
 Schirmer, H. E., obit., xii, 637.  
 Schkara, Mt., xii, 313.  
 Schlagdenhauffen, experiments by, viii, 118.  
 Schlagintweit, Emil, quoted, i, 7, 73, 74; ii, 5, 70.  
 Schlagintweit, Hermann, ix, 543.  
 Schlagintweit, R., obit., x, 668.  
 Schleicher, G., obit., iv, 695.  
 Schleinitz, Baron von, explorations by, xi, 382; xii, 312.  
 Schleswig-Holstein, final disposal of, iv, 440; Danish subjects in, viii, 276.  
 Schlettsstadt, cast found at, xix, 19.  
 Schley, W. S., ix, 29.  
 Schleyer, Johann Martin, inventor of Volapük, xii, 794; obit., xiii, 669.  
 Schliemann, Heinrich, explorations of, i, 28; ix, 23; xi, 33; obit., xv, 688.  
 Schloesing, theory of, iii, 83; invention by, vii, 741.  
 Schlözer, Kurd von, obit., xix, 621.  
 Schmerling, A., obit., xviii, 586.  
 Schmid, Theodor, obit., ii, 610.  
 Schmidt, Friedrich, obit., xvi, 685.  
 Schmidt, Gen. von, obit., i, 642.  
 Schmidt, H. I., sketch, xiv, 647.  
 Schmidt, Julian, obit., xi, 725.  
 Schmidt, Prof., discoveries by, ii, 48; vii, 38; obit., ix, 621.  
 Schmidt, W. A., obit., xii, 637.  
 Schmitz, Adolf, obit., xix, 622.  
 Schmitz, Gustavus, obit., ii, 588.  
 Schmitz, I. P., obit., xvii, 603.  
 Schmitz, L., obit., xv, 690.  
 Schmoele, H., invention, x, 616.  
 Schmucker, P. M., sketch, xiii, 651.  
 Schnaebelen, M., xii, 326.  
 Schneider, C. C., bridge, viii, 313.  
 Schnetzler, M., xii, 675.  
 Schnitzler, Dr., discovery by, ii, 330; xi, 312, 369. See Emin Bey.  
 Schoelcher Victor, obit., xviii, 586.  
 Schofield, John, obit., xviii, 568.  
 Schofield, Gen. John M., x, 429; sketch and port., xiii, 737.  
 Schofield, Jacob L., obit., xi, 699.  
 Schöne, investigations by, iii, 90.  
 School for soldiers' orphans, xviii, 610.  
 Schools, national aid to, ix, 222; xi, 263; secular, in Belgium, xi, 84; the Bible in, v, 380; in Kansas, ix, 424. See also Education.  
 School-question, the, xvi, 775; controversy, the, xviii, 673.  
 Schoonmaker, A., obit., xix, 597.  
 Schoonmaker, C. M., obit., xiv, 647.  
 Schrader, Dr., xii, 312, 647.  
 Schreiber, G. F., obit., xvii, 572.  
 Schreiner, Herr, xi, 35.  
 Schröder, H., experiments by, viii, 637; ix, 521.  
 Schröder, Karl, obit., xii, 637.  
 Schulhof, Dr., prize to, iii, 39.  
 Schultz, Jackson S., obit., xvi, 654.  
 Schulz, Albert, obit., xviii, 586.  
 Schulze-Delitzsch, obit., viii, 604.  
 Schumaker, Herr, xii, 25.  
 Schumann, Max, xii, 488.  
 Schunk, Edward, experiments, iv, 135; xii, 112.  
 Schur, W., prize to, viii, 28.  
 Schurz, Carl, sketch, ii, 689.  
 Schütt, O., explorations, iv, 403.  
 Schützenberger, experiments by, viii, 110.  
 Schuyler, E., obit., xv, 665.  
 Schuyler, G. L., obit., xv, 665.  
 Schuyler, Peter, with cut, xi, 10.  
 Schwackhöfer, invention, iii, 545.  
 Schwartz, Herr, xi, 129.  
 Schwarzburg-Sondershausen, Prince sketch, xiv, 670.  
 Schwarzenberg, Cardinal, obit., x, 668, 713.  
 Schwann, Theodor, obit., vii, 647.  
 Schwatka, F., obit., xvii, 572.  
 Schwatka, voyage, v, 298; xi, 380.  
 Schweinfurth, Dr., explorations of, i, 331; ii, 328; iii, 363; v, 235.  
 Schwenkfelders, xvi, 788.  
 Schwerin, Baron von, discovery by, xii, 306.  
 Scialoja, Antonio, obit., ii, 610.  
 Science, Associations for the Advancement of, ix, 44; x, 44; xi, 46; xii, 34; xix, 31. See National Academy.  
 Scindiah Bhajeerut Rao, obit., xi, 726.  
 Sclopis de Salerano, obit., iii, 661.  
 Scofield, Glenni W., obit., xvi, 654.  
 Scopoline, xi, 292.  
 Scoresby, Capt., xi, 565.  
 Scorpion fossil, illustration, ix, 637.  
 Scotland, Church of, xiii, 703; xiv, 718.  
 Scotland Yard, explosion, ix, 377.  
 Scott, Barrett, xx, 521.  
 Scott, Sir George G., obit., iii, 661.  
 Scott, Henry L., obit., xi, 699.  
 Scott, John, sketch, xiv, 647.  
 Scott, J. W., obit., xvii, 573.  
 Scott, James W., obit., xx, 591.  
 Scott, Levi, sketch, vii, 738.  
 Scott, Robert N., obit., xii, 610.  
 Scott, Thomas, murder of, x, 711.  
 Scott, Thomas A., sketch, vi, 806.  
 Scott, Gen. Walter, obit., i, 642.  
 Scott, William L., obit., xvi, 654.  
 Scotti, J., obit., xv, 665.  
 Scott-Moncrief, Col., ix, 286.  
 Seoville, Jonathan, obit., xvi, 654.  
 Seranton, Pa., growth of, xi, 186; water, xix, 779.  
 Scratchley, Maj.-Gen. Sir Peter, x, 59, 60; xii, 647; obit., x, 668.  
 Screw-propeller railway, xi, 742.  
 Scribner, John Blair, obit., iv, 695.  
 Serip, land, xiii, 472.  
 Seroggs, G. A., obit., xii, 611.  
 Serope, George P., obit., i, 642.  
*Scrutin de Liste*, vi, 807; x, 376, 379.  
 Seudder, E. W., obit., xviii, 568.  
 Seudder, H. M., obit., xx, 591.  
 Seudder, J. M., obit., xix, 597.  
 Seudder, S. H., ix, 637.  
 Sculpture, ix, 244; Christian, xiii, 31.  
 Scythian King, tomb of, xiii, 84.  
 Seal fisheries, vii, 7; xii, 284; in British Columbia, xviii, 109; xix, 86.  
 Seal islands, xx, 14.  
 Seal question, the, xvi, 834; discussed in Congress, xx, 194.  
 Sealing bags, xii, 689.  
 Sealing, in Bering Sea, xviii, 683.  
 Sea-Lions, vii, 9.  
 Search light, xx, 696.  
 Searle, observations, viii, 24.  
 Searle, Henry, obit., xvii, 573.  
 Searle, Henry E., sketch, xiv, 670.  
 Searles, Mary F. S., obit., xvi, 654.  
 Sears, Barnas, obit., v, 596.  
 Sears, Edward J., obit., i, 623.  
 Sears, George B., obit., ii, 588.  
 Searing, John A., obit., i, 623.  
 Sea-serpents, xi, 795; illustrations, 796, 797, 798.  
 Seaton, Henry E., obit., xviii, 568.  
 Seattle, xiv, 823.  
 Seawanhaka, loss of the, v, 580.  
 Seawell, W., obit., xiii, 651.  
 Seay, Gov. Thomas, xiii, 8.  
 Seay, William A., sketch, xiii, 652.  
 Sebastin, a new explosive, x, 344.  
 Sebastopol, ix, 761.  
 Sebehr Pasha. See Zebehr Pasha.  
 Secchi, Peter A., obit., iii, 738.  
 Sechele, Chief, x, 88.  
 Second-Advent Christian Association, xiv, 4.  
 Secretion, xiv, 709.  
 Secret Societies, Reformed Church on, v, 652.  
 Secrétan, C., obit., xx, 617.  
 Sedalia, xiv, 158.  
 Sedative, a new, ix, 272.  
 Sedden, James A., obit., v, 596.  
 Seed-cotton, bill on, in Alabama,



- iv, 16; invention for spinning, iv, 638.
- Seebolum, Henry, obit., xx, 617.
- Seegen, experiments by, vi, 750.
- Seeley, Charles A., obit., xvii, 573.
- Seeley, H. M., nominated, xiii, 834.
- Seeley, Sir J. R., obit., xx, 617.
- Seely, Edward H., obit., xix, 598.
- Seelye, J. H., obit., xx, 592.
- Sefton, Marion M., obit., xx, 592.
- Ségalas, Anaïs, obit., xviii, 586.
- Seguin, Edward, obit., v, 596.
- Seiberling, J., obit., i, 623.
- Seid, Mohammed, ix, 712.
- Seigniorage, coining, xix, 223.
- Seismie area, chart, xi, 296.
- Seismographs, xi, 303.
- Seismometers, illustrations, xi, 303.
- Selden, H. R., obit., x, 724.
- Selden, Samuel L., obit., i, 623.
- Self, Edward D., xii, 481.
- Seligman, Jesse, obit. and port., xix, 598.
- Selkirk Mountains, xiv, 358.
- Sell, E., study of Islam by, vi, 444.
- Sella, Quintino, obit., ix, 621.
- Sellar, A. C., obit., xv, 690.
- Sellar, W. Y., obit., xv, 690.
- Sellon, invention, vii, 265.
- Selma, Ala., xvii, 119.
- Selmer, impeachment of, ix, 751.
- Selwyn, George A., obit., iii, 661.
- Semiramis, ix, 599.
- Semmes, Raphael, sketch, ii, 690.
- Senard, M., obit., x, 668.
- Senate, office of President of, i, 133-152; expulsions from, vii, 196; contested election to, in Texas, xii, 758. See Congress.
- Seneca River aqueduct, i, 603.
- Senefru, King, vii, 257.
- Senegal, xii, 305; xv, 335.
- Seney, George I., ix, 329; art collection of, x, 367; xii, 279; obit., xviii, 568.
- Sennaar, insurrection in, viii, 299, 301; massacre at, x, 317.
- Senses, special, ix, 656; x, 690; xiii, 690; xvi, 740; xx, 663.
- Seoul, outbreak in, xiii, 253; west gate of, ill., x, 385.
- Separatists, ix, 69.
- Sepinau, Chief, ix, 115.
- Septuagint manuscript, xvii, 14.
- Serafini, Luigi, obit., xix, 622.
- Serfdom, vi, 473; in Java, vii, 589.
- Sermons, election, vi, 534.
- Sero-Therapy, xix, 712.
- Serpa Pinto, expedition, xv, 266.
- Serrano, Capt., expedition of, x, 400; xii, 315.
- Serrano, Duke, ix, 741; obit., x, 668.
- Serrigny, Denis, obit., i, 642.
- Servia, i, 753, 761, 763, 765; ii, 691, 724; iii, 748; vii, 738; xix, 714; xx, 698; constitutional crisis, xix, 714; map, i, 754; viii, 714; xii, 734; insurrection, viii, 715; articles on, in the Berlin Treaty, iii, 257; differences with Austria, v, 47; project for ehureh union of, v, 347; troubles in, viii, 43; Russian views for, viii, 549; ix, 732; dispute with Bulgaria, 102, 733; ix, 109, 112; war with Bulgaria, x, 727; treaty, xii, 736; changes of ministry, 735; xiii, 738; xiv, 760; xv, 769; xvi, 788; xvii, 694; xviii, 685.
- Servian frontier, the, xiii, 114.
- Sessions, L. B., vi, 648; viii, 577.
- Seti, King, ix, 20.
- Seton, Catharine, obit., xvi, 655.
- Settembrini, L., obit., i, 642.
- Setters, described, ix, 255, 256.
- Settle, Thomas, sketch, xiii, 652.
- Settled Estates Act, x, 457.
- Seubert, K., experiments by, vi, 93; x, 155.
- Seventh-Day Baptist Church, xiii, 741; xiv, 68; xvii, 696.
- Severtzoo, explorations by, iv, 399.
- Sevier, Robert, obit., iv, 695.
- Sevilla, José, bequest of, xii, 663.
- Sewage, influence of, on ground-atmosphere, i, 94; in houses, v, 363; disposal, vii, 741; see Sanitary Science, ix, 716; disposal of sludge, ix, 123; nitrification of, 128; purification of, x, 154.
- Sewall, Harold Marsh, xii, 731.
- Sewall, Henry, ix, 657; experiments by, x, 692.
- Sewall, Mary A., obit., xvii, 573.
- Sewall, S. E., sketch, xiii, 652.
- Seward, A. H., obit., i, 623.
- Seward Monument, i, 716.
- Seward, Sara C., obit., xvi, 655.
- Sewers, ventilation of, iii, 722; ix, 724 *et seq.*; traps, 723; gas, 723, 725.
- Sewing-machines, ii, 497.
- Seyffarth, Gustavus, obit., x, 669.
- Seymour, Edward, obit., ii, 588.
- Seymour, E. W., obit., xvii, 573.
- Seymour, Sir F. B. P., portrait, vii, 245.
- Seymour, Horatio, obit., xi, 798.
- Seymour, Mary F., obit., xviii, 568.
- Seymour, Norman, obit., xvii, 573.
- Seymour, O. S., sketch, vi, 808.
- Seymour, Truman, obit., xvi, 655.
- Seytre, M., invention by, x, 615.
- Seyyid Bargash, x, 795, 796.
- Sforza, Cardinal, obit., ii, 610.
- Shachnovski, Prince, sketch, ii, 692.
- Shafer, Helen A., obit., xix, 598.
- Shaffer, J. M., obit., xvii, 574.
- Shaftesbury, Earl, obit., x, 669.
- Shah of Persia, travels of, i, 660.
- Shah Jehan, ix, 7.
- Shairp, John C., obit., x, 669.
- Shakespeare, E. O., x, 798, 800.
- Shaler, Gen. Alexander, x, 641.
- Shanahan, Jeremiah F., xi, 699.
- Shand, Peter J., obit., xi, 700.
- Shandley, Edward J., obit., i, 623.
- Shanghai Custom-House, iv, 146.
- Shannon, Wilson, obit., ii, 588.
- Shan States, the, xiv, 429.
- Shari River, the, iii, 363.
- Sharkey, observations, viii, 634.
- Sharp, Jacob, trial of, xii, 555; obit., xvii, 574.
- Sharp, Martin, sketch, xiv, 670.
- Sharpe, John, obit., xx, 617.
- Sharpstein, J. R., obit., xvii, 574.
- Sharswood, G., obit., viii, 594.
- Shattuek, G. C., obit., xviii, 568.
- Shaw, Aaron, obit., xii, 611.
- Shaw, B. F., obit., xv, 665.
- Shaw, Henry W., obit., x, 654.
- Shaw, J. B., obit., xv, 665.
- Shaw, Richard, obit., i, 642.
- Shawe, Charles A., obit., i, 643.
- Shea, George, obit., xx, 592.
- Shea, J. D. G., obit., xvii, 574.
- Sheboygan, Wis., xviii, 172.
- Shedd, W. G. T., obit. and port., xix, 598.
- Sheep-husbandry, in Georgia, iv, 427; in Australia, vi, 46.
- Sheldon, George, obit., vi, 688.
- Sheldon, James, obit., xii, 611.
- Sheldon, Smith, obit., ix, 611.
- Shell-Heaps, aboriginal, ix, 14.
- Shelton, John T., obit., i, 624.
- Shelton, William, obit., viii, 594.
- Shenandoah, Pa., xix, 142.
- Shendy, captured by Arabs, ix, 297; by Gordon, 301; bombard-ed, x, 314.
- Shepard, C. A. B., sketch, xiv, 648.
- Shepard, E. F., obit., xviii, 569.
- Shepard, observations, iv, 53.
- Shepard, C. U., obit., xi, 700.
- Shepherd, O. L., obit., xix, 599.
- Shepherd, T. P., obit., ii, 588.
- Shepley, G. F., sketch, iii, 767.
- Shepstone, T., obit., xviii, 586.
- Sherbrooke, Quebec, xii, 130.
- Shere Ali, i, 8; negotiations with Russia, ii, 6, 42; disputed succession, iii, 6; answer of, to the British Government, iii, 437; flight from Cabul, iii, 437; flight of, iv, 7; death, iv, 9; secret correspondence of, captured, vi, 2; ix, 4; x, 2, 12.
- Sheridan, Gen. Philip H., sketch and steel-plate portrait, viii, 715; x, 427, 428, 429; on Indian lands, 763; death of, xiii, 652.
- Sheridan, M. M., sketch, xiii, 652.
- Sherif Pasha, vii, 239.
- Sheriffs, convention of, v, 683.
- Sherman act, the, xviii, 226.
- Sherman, John, sketches, ii, 692; iv, 794; portrait, 794.
- Sherman, S. M. G., obit., iii, 645.
- Sherman, T. W., obit., iv, 695; Mrs. T. W., obit., iv, 695.
- Sherman, Gen. William T., charge against Jefferson Davis, x, 235, 424, 425, 426, 431; sketch and port., xvi, 791.
- Sherman, Tex., xvi, 169.
- Sherwood, J. M., obit., xv, 665.
- Shibergan, district of, x, 4.
- Shields, James, sketch, iv, 796.
- Shields, J., experiments, vii, 660.
- Shiho, engagement near, x, 173.
- Shilder-Shuldner, obit., iii, 661.
- Shillaber, B. P., obit., xv, 665.
- Shilleto, Rev. R., obit., i, 643.
- Shimoneseiki, treaty of, xx, 136.
- Shimosé, experiments by, viii, 111.
- Shinar, King of, xiv, 23.
- Shinwarri rebellion, viii, 1.
- Ship-building, xiii, 510; xvii, 190; in Delaware, xviii, 255.
- Ship canals, xx, 248; Norwegian, xvii, 250.
- Ship channel in Lake St. Peter, xiii, 283.
- Shipka Pass, contest for, ii, 741.
- Shipley, H., x, 401.
- Shipman, G. E., obit., xviii, 569.
- Shipping, acts on, in Great Britain, i, 358; decline of American, ii, 110; iv, 837; v, 125; vi, 786; vii, 520; statistics of American, viii, 150; committees on, vii, 522, 523; bill on, in Congress, viii, 220; fines on, in foreign ports, vi, 777; restrictions in Spanish West Indies, viii, 263; deductions to British, *ibid.*; French bill, vi, 308; American, xvi, 193; on the Great Lakes, xvii, 697.

- Shipping-law Conference, x, 420.  
 Ship railway, xiv, 615.  
 Ship-railway, Tehuantepec. See Tehuantepec.  
 Ships, machinery for lifting, ii, 497; for conveying cars, 498; speed indicator, 499; sounding instrument, 498; steering large, iii, 724; rules for preventing collisions, vi, 778; building, 246; vii, 521; statistics of, in Maine, viii, 510; armored, iii, 591; classes of war, vi, 547; history of "Old Ironsides," vi, 620; the "Grosser Kurfürst," iii, 385; iv, 441; lists, of war, and descriptions of the "Calliope," "Téméraire," "Inflexible," "Lepanto," etc., see Navies of Europe, vii, 568; separable, xv, 282.  
 Shiras, George, obit., xvii, 745.  
 Shirley, Com. Paul, obit., i, 624.  
 Shoa, ii, 3; iv, 2; xi 1; Italian mission to, xiv, 2.  
 Shoemaker, John L., obit., i, 624.  
 Sholes, C. L., obit., xv, 666.  
 Shoring of bridge, ix, 313.  
 Short-hand writing, xii, 670.  
 Shot-guns, xv, 772.  
 Shreveport, xiv, 159.  
 Shufeldt, Com. R. W., x, 265.  
 Shufeldt, M. A., obit., xvii, 574.  
 Shufeldt, R. W., obit. and port., xx, 592.  
 Shugnan, state of, x, 2; taken by Abdurrahman, 4.  
 Shuvaloff, Count, sketch, ii, 692; x, 2; sketch, xiv, 670.  
 Siam, xviii, 687; conflict with France, 687.  
 Siamen, King, ix, 20.  
 Siberia, Northern, difficulties of the new ocean route to, iii, 358; trade in, x, 397; Russians in, 398.  
 Sibi, annexation of, xiii, 7.  
 Sibi-Quetta railroad, the, x, 4, 12.  
 Sibiriakof, Alexander, x, 397.  
 Sibley, Henry H., obit., xvi, 655.  
 Sibley, Hiram, sketch, xiii, 652.  
 Sicilian Disturbances, xviii, 415.  
 Sicilian Vespers, vii, 438.  
 Sickel, H. G., obit., xv, 666.  
 Siekels, John B., obit., i, 624.  
 Sicyon, excavations in, xiii, 26.  
 Sidel-Hadjj-Abd-es-Salaam, obit., xvii, 603.  
 Sidersky, experiments, viii, 113.  
 Sidi Hadji, ix, 339.  
 Sidi Mohammed Ben Ali es-Senoussi, x, 316.  
 Sidi Muley Hassan, obit., iii, 661.  
 Sidmouth, Viscount, x, 60.  
 Sidon, rock-cut tombs of, xii, 24.  
 Siemens, C. W., sketch, viii, 718.  
 Siemens, D., xi, 539.  
 Siemens, Frederick, experiments by, iv, 419; viii, 378.  
 Siemens, Werner, invention, iii, 276; experiments, v, 237; vii, 528.  
 Siemens, W. von, obit., xvii, 603.  
 Siemens, Sir William, inventions by, i, 519; vi, 255, 258, 400; viii, 676; theory of the sun, vii, 32.  
 Sierra Nevada Mountains, ix, 539.  
 Sight and touch, relative accuracy of, vi, 751; experiments on the sight, x, 690, 691.  
 Sight, Buffington's, xiv, 739.  
 Signal Service, Meteorological Division of the United States, with weather-maps and map of coast telegraph, iv, 797; station of Mount Washington, 800; illustrations, 800, 804, 806-810, 813, 815, 816.  
 Signals, sound-, viii, 719.  
 Signol, Emile, obit., xvii, 603.  
 Sigurson, Jon, vi, 212.  
 Sikkim, war in, xiii, 434; xiv, 428; xv, 436.  
 Sila (Corca), x, 263.  
 Silchester, discoveries at, xvi, 15.  
 Silicate tablet, the, xii, 688.  
 Silicon, discoveries, ix, 809.  
 Silk, weighing of, iii, 229; substitute for, 724; commerce in, iv, 173; reduced yield in China, viii, 126; industry in Lyons, ix, 345; in Italy, ix, 415; in Mexico, xi, 555; artistic, ix, 246.  
 Silk-worm gut, xiv, 762.  
 Sill, Edward R., obit., xii, 611.  
 Silliman, Benjamin, invention, i, 522; obit., x, 732; statue, x, 361.  
 Silos, their construction and uses, vi, 808; illustrations, 809, 810.  
 Silva, Francis A., obit., xi, 700.  
 Silver bill, xv, 232.  
 Silver certificates, vi, 779.  
 Silver coinage, Léon Say on, iii, 314; in Germany, iv, 440; as legal currency, ii, 235, 291; iii, 138-164; effects of depreciation, iv, 163, 613; vi, 626; ix, 783; x, 275, 282; Cleveland on, x, 755; the question in India, xi, 437; discussed in U. S. Congress, xx, 191. See Bimetallic Standard.  
 Silver, mining of, xii, 504; in Bolivia, x, 99; xi, 91; in Australia, ix, 59; working of, see Metallurgy.  
 Silver purchase, xviii, 207.  
 Silver, salts of, ii, 91; reduction of, from ore, viii, 521; in lead ores, x, 155; determination of small quantities, ix, 127; xiii, 527; xvi, 509; xvii, 443; xviii, 481; coinage, 590; chloride, 150; xiv, 80, 409, 413, 542; xv, 529; abolishing free, xviii, 401; convention in Arizona, 21; in Col., 178; in Montana, 502; demonstrations in Utah, 748.  
 Sime, James, obit., xx, 617.  
 Simeoni, Giovanni, obit., xvii, 603.  
 Simmons, Edward E., xi, 346.  
 Simon, Jules, resignation of, ii, 307; speech of, 312, 313; v, 282.  
 Simon, Marie, obit., ii, 610.  
 Simon-Carves oven, the, x, 580.  
 Simonides, obit., xv, 690.  
 Simonieh, Count, x, 1.  
 Simons, M. Laird, obit., v, 596.  
 Simons, Thomas Y., obit., iii, 645.  
 Simony, trial for, i, 369-371.  
 Simor, Johann, obit., 16, 685.  
 Simplon tunnel, x, 746.  
 Simpson, E., sketch, xiii, 652.  
 Simpson, J. H., x, 401.  
 Simpson, J. P., obit., xii, 637.  
 Simpson, Matthew, obit., ix, 611.  
 Simpson, Richard, obit., i, 643.  
 Simrock, Karl, sketch, i, 718.  
 Sims, J. Marion, sketch, viii, 718.  
 Simson, Alfred, voyage of, i, 333.  
 Sinde, annexation of, ix, 346; mutinies in, 346.  
 Singer, Otto, obit., xix, 599.  
 Singing-bird, the, x, 613.  
 Singleton, O. R., sketch, xiv, 648.  
 Sinkat, fall of, viii, 302; ix, 293; x, 319.  
 Sinking town, xviii, 177.  
 Siout, tombs at, xiii, 31.  
 Sioux City, xiv, 159.  
 Sioux Falls, S. Dak., xv, 145.  
 Sioux reservation, xiv, 249.  
 Sioux, war with the, i, 43.  
 Sippara, temple, ix, 18, 19; xiii, 33.  
 Siren fog-signal, v, 448; viii, 723.  
 Sir-i-pul, district of, x, 4.  
 Sirius, spectroscopic study of, x, 52; the companion of, ix, 53.  
 Sisal hemp, xiii, 248.  
 Sitka, ill., xx, 13.  
 Sitting Bull, i, 43; obit., xv, 666.  
 Sivotha, Prince, x, 119.  
 Skassi, M., surveys of, xi, 377; xii, 310.  
 Skates, ix, 733.  
 Skene, J. H., researches, vii, 264.  
 Skierniewice, meeting of emperors at, ix, 64, 356, 712.  
 Skin, structure of the, xii, 672; new remedies for diseases of the, viii, 434; ix, 272, 273; x, 298, 300.  
 Skobeleff, M. D., sketches, ii, 693; viii, 742; plan of, x, 7.  
 Skye Crofters, ix, 378.  
 Skye-terrier, the, ix, 261.  
 Slade, Adolphus, obit., ii, 611.  
 Slade, Edward, obit., iii, 645.  
 Sladen, Col., xi, 118.  
 Slag, utilization of, iii, 722.  
 Slater, John F., obit., ix, 612.  
 Slaughter, W. B., obit., iv, 695.  
 Slaughtering by machinery, x, 733; illustration, 735.  
 Slave ports, reconquest, xv, 270.  
 Slavery, in Brazil, i, 77; vii, 70; movement to abolish, viii, 67; emancipation, xi, 97; the Soudan, ii, 269, 270; v, 235; viii, 290, 292; in Cyprus, iii, 402; in Cuba, iii, 774; iv, 822; abolition, viii, 262; in United States, see Exodus, iv, 354; Southern Presbyterian Church on, i, 270; among Turkomans, vi, 733; in Madagascar, vii, 493; form of, in Queensland, viii, 36; virtual, in the South Pacific, x, 62; black laborers released, 62, 63; decree abolishing, in Egypt, ix, 236; xiv, 282. See also Anti-Slavery.  
 Slave-trade, the, field of, ii, 270, 329, 331; inquiry into, ii, 641; efforts of Gen. Gordon to stop, viii, 399.  
 Slavs, the, i, 58-60; ii, 263; v, 47; vii, 47, 53; viii, 46, 48; the south, ix, 537; conflict between, and the Czechs, in Austria, x, 71. See also Pan Slavists.  
 Sleep, drugs for, x, 298, 300, 301.  
 Sleep-drunkenness, ix, 554.  
 Sleeper, John S., obit., iii, 645.  
 Sleeper, S. S., obit., xx, 592.  
 Sliver, W. A., obit., xiii, 653.  
 Slivinitza, battle near, x, 729.  
 Sloane, J. R. W., obit., xi, 700.  
 Slocum, H. W., obit. and port., xix, 599.  
 Sloyd, xix, 700.  
 Small, John, obit., xi, 726.  
 Small, M. P., obit., xvii, 575.  
 Small-pox, Ceeley case, vii, 287; in Canada, x, 706; outbreak of, in Montreal, x, 706; xiii, 317.  
 Smalls, R., pardon of, iv, 820.



- Smallwood, Geo. Wm., port., xx, 461.  
 Smee, Dr. Alfred, obit., ii, 611.  
 Smell, experiments on, viii, 636.  
 Smilie, James, obit., x, 654.  
 Smirke, S., obit., ii, 611.  
 Smith, Albee, invention, vii, 485.  
 Smith, Albert, obit., iii, 645.  
 Smith, Angus, x, 161.  
 Smith, Asa D., sketch, ii, 693.  
 Smith, Ashbel, obit., xi, 701.  
 Smith, Avery, obit., i, 624.  
 Smith, B. B., obit., ix, 612.  
 Smith, C. M., observations by, viii, 525.  
 Smith, Cyrus P., obit., ii, 588.  
 Smith, David M., obit., vi, 688.  
 Smith, Dr., ix, 655.  
 Smith, E. Darwin, obit., viii, 594.  
 Smith, E. Kirby, obit., xviii, 569.  
 Smith, E. F., experiments by, iv, 134; v, 96.  
 Smith, Edward P., obit., i, 624.  
 Smith, E. O. P., obit., xviii, 570.  
 Smith, Erminnie A., ix, 45, 46; x, 45; obit. and portrait, xi, 802.  
 Smith, F. H., obit., xv, 666.  
 Smith, Francis G., obit., iii, 645.  
 Smith, Francis S., obit., xii, 611.  
 Smith, George, sketch, i, 718; re-searches of, vii, 262-264.  
 Smith, George, obit., xx, 618.  
 Smith, Green Clay, sketch, i, 441; obit., xx, 593.  
 Smith, Henry B., sketch, ii, 694.  
 Smith, Henry Clay, obit., xi, 701.  
 Smith, Henry H., obit., xv, 666.  
 Smith, Herbert E., xii, 675.  
 Smith, Hoke, sketch, xviii, 737.  
 Smith, Horace, obit., xviii, 570.  
 Smith, Ida G., obit., vii, 643.  
 Smith, James Y., obit., i, 624.  
 Smith, J. Hyatt, obit., xi, 701.  
 Smith, John A., obit., xvii, 575.  
 Smith, John G., obit., xvi, 655.  
 Smith, Joseph, admiral, obit., ii, 588.  
 Smith, Joseph, seer, port., xviii, 668.  
 Smith, J. Cotton, sketch, vii, 742.  
 Smith, J. Lawrence, discovery by, iii, 87; sketch, viii, 718.  
 Smith, J. P., buoy, v, 452.  
 Smith, Leigh, cruises of, v, 303; vi, 323, 325; vii, 334.  
 Smith, M., obit., xviii, 570.  
 Smith, Nathan R., obit., ii, 588.  
 Smith, Lady P., obit., ii, 611.  
 Smith, Piozzi, theory, ix, 21.  
 Smith, Robert A., obit., ix, 621.  
 Smith, Roswell, obit., xvii, 575.  
 Smith, S. Alden, xii, 17.  
 Smith, Samuel F., obit., xx, 593.  
 Smith, Sebastian B., obit., xx, 593.  
 Smith, Thos. K., obit., xii, 612.  
 Smith, Thos. L., obit., xvi, 655.  
 Smith, Sir W., obit., xviii, 568.  
 Smith, W. F., experiments, x, 158.  
 Smith, William, obit., xii, 612.  
 Smith, W. E., sketch, ii, 770.  
 Smith, William H., obit., xvi, 686.  
 Smith, William Henry, x, 449.  
 Smith, W. N. Howell, sketch, ii, 574; iii, 630; obit., xiv, 648.  
 Smith, W. Robertson, trial of, for heresy, ii, 648; iii, 698; v, 634; vi, 760, 769; obit., xix, 622.  
 Smoke consumer, a, i, 518.  
 Smyth, Douglass, x, 362.  
 Smyth, J. F., insurance superintendent, trial of, iii, 616.  
 Smyth, Sir W. W., obit., xv, 690.  
 Smythies, Bishop, xi, 370; xii, 303.  
 Snakes, venom of, xii, 679.  
 Snead, J. T., obit., vi, 688.  
 Snead, T. L., obit., xv, 667.  
 Sneezewood, x, 135.  
 Snell, Ebenezer L., obit., i, 624.  
 Snell, George, obit., xviii, 570.  
 Snipe, in the United States, x, 390.  
 Sniper, Gustavus, obit., xix, 599.  
 Snohomish, Wash., xvi, 170.  
 Snow, Ambrose, obit., xx, 593.  
 Snow, Freeman, obit., xix, 600.  
 Snow-plows, rotary, xvi, 711.  
 Snow-shoes, xi, 803.  
 Snowden, Maj.-Gen. E. R., port., xx, 507.  
 Snowden, J. R., obit., iii, 645.  
 Sobrero, x, 344.  
 Societies, Mutual Aid, xii, 523; of Jesus, Incorporation, in Quebec, 708; Psychical Research, 509.  
 Socialism, State, of Bismarek, viii, 393; radical land-theories tending to, x, 457; in Austria, xix, 66.  
 Socialism, agrarian, xix, 69.  
 Socialist Congress, xvi, 329.  
 Socialists, in Denmark, ii, 250; increase of, in Germany, 282; measure against, iii, 379-381, 384; x, 417; xi, 389; attempt on the Emperor's life, iii, 381; effect of anti-Socialist bill, 388; in the Reichstag, iv, 440; law against, v, 318; Emperor's rescript, iii, 393; x, 357, 360, 361; trials in Russia, ii, 688; iii, 744; trials in France, vii, 326; schools of, viii, 368; ix, 344; x, 378; riots in Austria, viii, 46; ix, 67; x, 72; in Italy, iii, 458; congress proposed, vi, 829; held at Copenhagen, viii, 276; in the Netherlands, x, 625; xii, 529; disturbance in Amsterdam, xii, 529; agitations in London, xii, 342; convention, xvii, 50, 754.  
 Social statistics of cities, xvi, 843.  
 Society Islands, the new king of, ii, 53; annexation of, v, 40.  
 Socotra, i, 9; British treaty, 718.  
 Soda, manufacture of, viii, 114.  
 Sojourner Truth, obit., viii, 595.  
 Sokolo, town of, vi, 328.  
 Solar apex, position of, xviii, 45.  
 Solar corona, photographed, x, 47.  
 Solar parallax, xii, 40.  
 Solar physics, xiii, 55; system motion in space, xiv, 44.  
 Soldiers and sailors, iv, 770; retired list, x, 252; memorial arch, Hartford, xi, 347; orphans' home, xi, 440.  
 Soldiers' homes, xiii, 558, 586; xiv, 765; xvii, 307.  
 Soldiers' orphans' schools, xiii, 677; xviii, 610.  
 Soleillet, Paul, expeditions of, iii, 364; v, 292; xi, 371.  
 Solids, solubility of, iv, 136.  
 Solly, Edward, obit., xi, 726.  
 Solms, Count, x, 142, 143.  
 Solntseff, F. G., obit., xvii, 603.  
 Solomon, Edward, obit., xx, 618.  
 Solomon, M., obit., xv, 667.  
 Solomon, S. J., xii, 277.  
 Solon, order of, xviii, 609.  
 Solovieff, Alexander, iv, 776, 777.  
 Solymossy, Esther, case, viii, 47.  
 Somali Land, xii, 736; xv, 270, 458.  
 Somerby, G. A., obit., iv, 696.  
 Somerset, Duchess of, obit., ix, 622; Duke of, obit., x, 669.  
 Somerville, xi, 186.  
 Somnolentia, ix, 554.  
 Sons of the American Revolution, xix, 638.  
 Sons of the Revolution, xix, 639.  
 Soopayalat, xi, 114.  
 Sophia, Queen of the Netherlands, obit., ii, 611.  
 Sophocles, E. A., obit., viii, 595.  
 Sopt, the god, x, 36.  
 Sorabjé, experiments, x, 153.  
 Sorby, investigations, vii, 532.  
 Sorby-Brown micro-spectroscope, ix, 217.  
 Sorel, Canada, xiv, 723.  
 Sorghum, xix, 715.  
 Sorghum, experiments, iv, 841; ix, 422.  
 Sorin, Edward, obit., xviii, 570.  
 Sosnovski, expedition, i, 329.  
 Sothern, E. A., sketch, vi, 811.  
 Soto, Marco A., sketch, iii, 424.  
 Soudan, the, xx, 247; Col. Gordon appointed, ii, 269; his intentions regarding slavery, *ibid.*; slave-trade in, v, 235; exploration of, vi, 326; rebellion in, vii, 255; viii, 298, 507; history and productions, 290; commerce, 386; British policy, 301; Gordon's mission, 399; operations in, ix, 283, 285, 288, 293-304, 371; map of Eastern, 287; its history, x, 308; English army disasters in, 313; xi, 310; Cossacks in, 311; fighting in, xii, 244; xiii, 293; xx, 1; events in the, xiv, 585; xv, 279.  
 Soullart, Prof., viii, 28; xii, 95.  
 Soule, Gideon L., obit., iv, 696.  
 Soulié, Eudore, obit., i, 643.  
 Sound, xiv, 692; xvi, 727; xviii, 618; xix, 653; aberration of, viii, 724.  
 Sound-Signals, viii, 719; maps, 721, 727; illustrations, 721, 722, 728, 729, 730.  
 Soust de Borekenfeld, obit., ii, 611.  
 South Africa, British, xx, 112; Portuguese, xx, 115.  
 South Africa, ix, 109, 112, 115; xix, 100; Germany in, 362-365; troubles in, with natives, x, 83-89; xviii, 120. See Cape Colony.  
 South African Republic, xiv, 103; xv, 94; xvii, 74; xviii, 128; xix, 103; xx, 113.  
 South American Commission, x, 772; Congress, xiii, 829.  
 Southard, W. F., experiments by, vi, 751.  
 South Australia, xiv, 55; xv, 48; xvii, 45; xviii, 58; xix, 59; xx, 68.  
 South Bend, Ind., xv, 145.  
 South Carolina, in each volume; view in, i, 723; Hamburg massacre, i, 719, 720; Federal assistance, 720; other disturbances, 720; contested election, 723-727; settlement, ii, 694; robe of the speaker of the House, iii, 767; State-debt, 768, 769; jetties in Charleston harbor, 772; constitutional amendments, 818; ix, 739; miscegenation prohibited, iv, 818; resignation of Governor Simpson, 667, 670; phosphate

- mines, v, 669; vi, 814, 815; question of revising the Constitution, vi, 812; exodus of negroes, 812; election law amended, vii, 748; Hugh S. Thompson made Governor, viii, 739; election cases, 739; Charleston, x, 737; cyclone, x, 738; earthquake, xi, 807; see also Earthquake; J. P. Richardson Governor, 806; forfeited lands, State capitol, State canal, xii, 737; population, xv, 776, and xvi, 797; dispensary law of, xix, 718; constitutional convention, xx, 704.
- South Dakota, xiv, 773; xv, 779; xvi, 799; xvii, 706; xviii, 693; xix, 720; xx, 706; population, xv, 780; prohibition in, 781, and xvi, 801; drought, xv, 782; lands, xvi, 801.
- Southgate, Horatio, obit., xix, 600.
- South Norwalk, Conn., xix, 143.
- South Omaha, Neb., xvi, 170.
- South Orange, N. J., xviii, 169.
- South Pittsburg, xiv, 160.
- South Sea, Germans in, x, 415, 681.
- Southwest Africa, German, xx, 116.
- Souvenir spoons, xvi, 802.
- Sovereigns of Industry, xiii, 242.
- Spafford, M. H. G., vi, 707.
- Spain, in each volume; views, i, 728, 730, 732; ii, 699, 700, 701; Carlist war, capture of Guetara, i, 728; Estella taken and Tolosa entered, 729; flight of Don Carlos and return of the King to Madrid, 729; new constitution adopted, 730; modification of the special privileges of the Basque provinces, 730; return of ex-Queen Isabella, 731; expedition against the Sooloo pirates, 732; controversy relative to the Cuban rebellion, 732; war-loan and shipment of troops to Cuba, 733; extradition treaty and surrender of W. M. Tweed, 733; indemnity to the United States, ii, 701; the royal marriage, iii, 773, 774; iv, 822; marriage bill passed, 773; the Cuban loan, 774; attempt to shoot the King, 774; the Cuban insurrection, 774; the Queen's death, 774; proposed abolition of slavery in the Antilles, iv, 822; attempted regicide, 822; new outbreak in Cuba, 822; the coolie-trade, 823; events in Cuba, v, 672; Carlist movements, 673; free-trade plans, vi, 816; demand for American products, 817, 818; troubles with England, vii, 751; case of Maceo and Rodrigues, 751, 752; socialism, viii, 740; organization of the *Mano negra*, 740; military insurrection, 740; insult to the King in Paris, 741; revolutionary movements, ix, 742, 743; death of the King, x, 738, 739; the Queen regent, 738; dynastic rivalries, 740; failure of the Anglo-Spanish convention, 740; claim to the Caroline Islands, 140, 741; the Sooloo convention, 742; military revolt in Madrid, xi, 808; recognized as a great power, 740; insurrection in, xvi, 805; anarchist disturbances, xvii, 709; xix, 723; possessions in Africa, xvi, 806.
- Sparkman, James D., obit., i, 624.
- Spaulding, Judge A., obit., i, 624.
- Spaventa, Silvio, obit., xviii, 586.
- Spear, Samuel T., obit., xvi, 656.
- Special delivery of letters, xii, 687.
- Special legislation, xiv, 373 *et seq.*
- Special senses, ix, 656; x, 690; xi, 756; xii, 672; xviii, 633.
- Specie Resumption, in Italy, viii, 451; in United States, ii, 237, 290, 663; iii, 164, 175, 325, 801; iv, 28, 367; in Chili, xx, 129. See also Resumption, iv, 763.
- Spectra, of vapors and gases, v, 95; of the planets, xi, 54.
- Spectres of Ben Lomond, xi, 569.
- Spectroscope, new form of, xii, 111.
- Spectroscopic Observations, i, 49.
- Spectroscopy, xiii, 56.
- Spectrum analysis, xii, 412; xvi, 51.
- Spectrum photography, ix, 127.
- Spectrum, the solar, evidence from, iv, 130; stellar changes, x, 53.
- Speed, J., obit. and port., xii, 741.
- Speer, R. M., obit., xv, 667.
- Speir, S. F., obit., xx, 593.
- Spelling Reform, iv, 637; article on, ix, 743; German, 745.
- Spelter, market, ix, 481.
- Spence, J. B., discovery by, v, 93.
- Spence, Thomas A., obit., ii, 589.
- Spencer, G. E., obit., xviii, 570.
- Spender, Mrs. L. (Hendland), obit., xx, 618.
- Spezzia, ordnance experiments at, vii, 578; illustrations, 579, 580.
- Sphinx, the, xii, 18.
- Spicer, Elihu, obit., xviii, 570.
- Spicer, William F., obit., iii, 645.
- Spinal ganglia, xii, 672.
- Spinner, F. E., obit., xv, 667.
- Spinola, Francis B., obit., xvi, 656.
- Sphoza, statue of, v, 555.
- Spirilla, ix, 498.
- Spirit lake, monument at, xx, 368.
- Spitaler, Prof., ix, 52.
- Spleen, the, function of, vi, 751; viii, 635; extirpation, ix, 748.
- Splenectomy, viii, 751.
- Spofford, Henry M., obit., v, 596.
- Spofford, R. S., sketch, xiii, 653.
- Spokane Falls, xiv, 160.
- Spong, Harry, xii, 678.
- Spontaneous generation, ix, 94.
- Spooner, Alden J., obit., vi, 688.
- Spooner, Lysander, obit., xii, 612.
- Spoon-holder, xvi, 708.
- Sporer, Herr, xi, 57.
- Sporting boat, xx, 636.
- Spoth, E. A., obit., xx, 593.
- Spottiswoode, W., obit., viii, 605.
- Spotts, James H., obit., vii, 644.
- Spottsylvania, battle of, xi, 418.
- Sprague, E. C., obit., xx, 593.
- Sprague, John J., obit., iii, 646.
- Sprague, Peleg, sketch, v, 673.
- Sprague, William B., sketch, i, 733.
- Sprague, Wash., xvi, 170.
- Spreckels, Claus, x, 62; xii, 352.
- Sprigg, Gordon, vi, 8, 88.
- Spring, Samuel, obit., ii, 539.
- Spring, W., experiments by, viii, 113; ix, 120; xi, 137.
- Springer, Anton, obit., xvi, 686.
- Springfield, Ill., ii, 383; xvi, 171.
- Springfield, Mass., xv, 146.
- Springfield, Mo., xv, 146.
- Springfield, O., xv, 146.
- Springs, mineral, x, 593 *et seq.*
- Sproat, Morgan L., obit., i, 624.
- Sproull, T., obit., xvii, 575.
- Spurgeon, Charles H., xii, 60; sketch and port., xvii, 711.
- Squier, E. G., sketch, xiii, 663.
- Squirrels, in United States, x, 390.
- Stabrovski, Dr., xii, 678.
- Stackhouse, E. T., obit., xvii, 575.
- Stafford, broken dam in, ii, 227.
- Stahl, on lichens, iii, 476.
- Stahr, A. W. T., sketch, i, 733.
- Stained glass, ix, 242.
- Stambuloff, retirement of, xix, 87; assassination of, xx, 100; obit., xx, 618.
- Stamford, Conn., xvi, 171.
- Stämpfli, J., obit., iv, 701.
- Standeford, E. D., obit., xii, 613.
- Standing Bear, iv, 653.
- Stanford, L., obit., xviii, 571.
- Stanford University, xviii, 697.
- Stang, Fredrik, obit., ix, 622.
- Stanhope, Edward, x, 450.
- Stanley, Arthur P., sketch, vi, 822.
- Stanley, Frederick Arthur, x, 449.
- Stanley, H. M., sketch, ii, 701; explorations of, i, 333; ii, 323, 329; iii, 363; vii, 336; viii, 385; ix, 166, 167; x, 192, 193; xii, 250; 302; in Africa, xiv, 347 *et seq.*, sketch and port., 777.
- Stanley of Preston, sketch, xiii, 275.
- Stannard, George J., obit., xi, 701.
- Stanton, F. P., obit., xix, 600.
- Stanton, Henry B., obit., xii, 618.
- Staples, H. B., obit., xvi, 656.
- Starch, in leaves, ix, 129.
- Starchevich, Dr., ix, 70, 72.
- Starcy, Alfred B., obit., xviii, 571.
- Stark, George, obit., xvii, 575.
- Stark, John, statue of, xv, 599.
- Starkweather, H. H., obit., i, 624.
- Starkweather, J. C., obit., xv, 667.
- Starr, Chandler, obit., i, 624.
- Starr, Samuel H., obit., xvi, 656.
- Starrett, Mrs., iv, 639.
- Star-Routes, vii, 753; viii, 163, 777.
- Stars, spectra of, xx, 59; variable, xx, 58. See Astronomical Progress.
- Star-shower, the Biela, xi, 52.
- State banks in Ill., xviii, 398.
- State flowers, xix, 497, 724.
- Statehouse at Albany, xvii, 507.
- State judges, indictment of, v, 703.
- State Rights, Congress on, i, 166; as to suits against municipalities, iii, 10; conflict between United States and Arkansas courts, 25; alleged Federal interference with, v, 203; decisions on, vi, 477.
- States, claims against, v, 479; New York law on, vi, 516; proposed amendment, vii, 462; obligation of contracts, vii, 648; viii, 493; Board of Claims, 570; new, xiv, 193; xv, 235; xix, 224.
- Statistical Congress, i, 734.
- Statues at Athens, xi, 701; of Liberty, 323, 649; illustration, 650. See Archaeology.
- Stauber, Anton, xii, 316.
- Stauffenberg, Dr. von, xii, 333.
- Stanton, E. I., obit., xiv, 648.
- Stead, Mr., x, 452-453.
- Steam, exhaust, utilization of, iii, 723; pressure, vi, 546.
- Steam-Engine, Balance, iii, 774.
- Steamer lines, new, xiii, 35, 105, 176, 255, 415, 549, 832.
- Steamers, whaleback, xviii, 282.



- Steamships, ironclad, first built, xii, 229; new, xiii, 307; dimensions, 307; speed, xv, 787.
- Steamships, line from Rio Janeiro to New York, iii, 63; to Halifax, v, 16; from Hudson Bay, 218; subsidized, in Germany, ix, 361; in Mexico, 492; privileges of, in Guatemala, xii, 347; mail, to Australia, x, 61; lack of American, x, 40.
- Steam-tugs for canals, vi, 250.
- Stearns, Charles W., obit., xii, 613.
- Stearns, J. F., sketch, xiv, 648.
- Stearns, J. N., obit., xx, 594.
- Stearns, Joseph B., obit., xx, 594.
- Stearns, Marcellus L., i, 295.
- Stearns, O. S., obit., xviii, 571.
- Stearns, Onslow, obit., iii, 646.
- Stearns, Silas, sketch, xiii, 653.
- Stearns, William A., obit., i, 624.
- Stedman, C., obit., xv, 667.
- Steel. See articles on Metallurgy.
- Steel and Iron Industry, xi, 449.
- Steel, Sir John, obit., xvi, 686.
- Steele, Maj., x, 129.
- Steele, J. Dorman, obit., xi, 702.
- Steeple-chasing, xii, 771.
- Steere, Bishop, journey, i, 332.
- Steers, George, x, 788.
- Stefan, Prof., obit., xviii, 586.
- Steifensand, Xavier, obit., i, 643.
- Stein, Dr., experiments, ix, 515.
- Steinberger, A. B., obit., xix, 600.
- Steiniger, L., xi, 375.
- Steinen, Dr. von den, xii, 314.
- Steiner, C. von, ix, 350.
- Steiner, D. W., experiments, x, 692.
- Steiner, L. H., obit., xvii, 575.
- Steinmetz, K. F. von, obit., ii, 611.
- Steinway, Albert, obit., ii, 589.
- Steinway, T., sketch, xiv, 648.
- Steinwehr, Baron, obit., ii, 589.
- Stela of Fassiler, xiii, 33.
- Stellaland, ix, 112; x, 85, 87.
- Stellar parallax, ix, 53.
- Stellmacher, Madame, ix, 754.
- Stenhouse, C. F., observations by, viii, 526.
- Stenograph, the, xv, 816.
- Stephan, Mr., x, 53; xi, 56.
- Stephen, Condie, x, 4.
- Stephen, J. K., obit., xvii, 603.
- Stephen, Sir Alfred, obit., xix, 622.
- Stephen, Sir J. F., obit., xix, 622.
- Stephens, A. H., sketch, ii, 702; viii, 741; address, vii, 346; statue, xviii, 340.
- Stephens, Ann S., obit., xi, 702.
- Stephens, George, ix, 23.
- Stephenson, John, obit., xviii, 571.
- Stephenson, J. W., ix, 507 *et seq.*
- Stepniak, S. M. D., obit., xx, 619.
- Stern, Daniel. See Agout.
- Sternberg, Count, ix, 636.
- Stevens, Aaron F., obit., xii, 613.
- Stevens, Alfred, medal, x, 366.
- Stevens, Ambrose, obit., v, 596.
- Stevens, E. L., obit., xv, 667.
- Stevens, Henry, obit., xi, 702.
- Stevens, J., obit., xvii, 603.
- Stevens, J. L., obit., xx, 594.
- Stevens, L. I., experiments by, viii, 632.
- Stevens, William B., sketch and portrait, vii, 767; ix, 304.
- Stevenson, Adlai E., sketch and port., xvii, 712.
- Stevenson, James, sketch, xiii, 653.
- Stevenson, Jonathan D., obit., xix, 600.
- Stevenson, Joseph, obit., xx, 619.
- Stevenson, Robert Louis, sketch and port., xix, 724.
- Stever, Gustav, obit., ii, 611.
- Stewart, Alexander, obit., i, 643.
- Stewart, A. T., sketch, i, 735.
- Stewart, Balfour, obit., xii, 637.
- Stewart, Sir Donald, v, 5; x, 13.
- Stewart, George W., obit., xvi, 656.
- Stewart, H., in the Soudan, x, 313; obit. and port., ix, 745.
- Stewart, Isaac D., obit., xii, 614.
- Stewart, Julius L., x, 362.
- Stewart, Col. Patrick, x, 4.
- Stewart, W. A., obit., xvii, 575.
- Stigmata, case of, viii, 694.
- Stigmata maidis, ix, 272.
- Stiles, I. N., obit., xx, 594.
- Stiletto, the yacht, x, 193.
- Stille, R. B., obit., iv, 696.
- Stillwater, Minn., xix, 143.
- Stillwell, Silas M., obit., vi, 689.
- Stirling-Maxwell, W., obit., iii, 661.
- Stisted, Sir Henry W., obit., i, 643.
- Stockbridge, Francis B., obit., xix, 601.
- Stockbridge, H., obit., xx, 594.
- Stock Exchange, the London, report on, iv, 176.
- Stockhardt, J. A., obit., xi, 726.
- Stockley, C. C., sketch, vii, 189.
- Stock Market. See Financial Review.
- Stockton, Cal., growth of, xii, 130.
- Stockton, John D., obit., ii, 589.
- Stockton, Richard, obit., i, 624.
- Stockton, T. H., obit., xvii, 575.
- Stokes, J. H., obit., xv, 668.
- Stolbrand, C. J. M., obit., xix, 601.
- Stoletoff, Gen., x, 2.
- Stone, Charles P., obit., xii, 614.
- Stone, D. M., obit., xx, 594.
- Stone, Delia C. H., obit., xii, 615.
- Stone, G. W., obit., xix, 601.
- Stone, J. A. B., sketch, xiii, 654.
- Stone, Lucy, iv, 598; obit., xviii, 572.
- Stone, Ormond, xi, 56.
- Stone, Prof., observations, vi, 39.
- Stoneman, George, vii, 81; obit. and port., xix, 601.
- Stones, Precious, xviii, 638.
- Stoney, G. M., explorations by, viii, 383; xi, 380.
- Storage batteries, ix, 307.
- Storer, David H., obit., xvi, 656.
- Storey, Wilbur F., obit., ix, 612.
- Storm and fire in Iowa, xix, 311.
- Storm apron, xvi, 709.
- Storms, frequency of, x, 582; xi, 543, 562; xii, 491, 492; movements of, 493; xiii, 533; xiv, 546; xv, 505; xvii, 451; in Georgia, xviii, 340; xix, 311; in Louisiana, 464; in Missouri, 499; in Oregon, 598; in South Carolina, 691.
- Storm-signals, cautionary, iv, 806.
- Storm, Theodor, sketch, xiii, 669.
- Storthing House, i, 738.
- Story, Julian, xii, 276.
- Story, W. W., obit. and port., xx, 594.
- Stoughton, E. W., sketch, ii, 703.
- Stoughton, W. L., sketch, xiii, 654.
- Stout, F. A., obit., xvii, 576.
- Stowe, Calvin E., obit., xi, 703.
- Stoyanoff, Z., sketch, xiv, 670.
- Strachan, Capt. J., xi, 381.
- Stradbroke, John E. C. R., obit., xi, 727.
- Strahan, Sir G., ix, 60.
- Strain, Patriek, obit., xviii, 572.
- Straits Settlements, xiv, 399; xv, 404; xvi, 343; xvii, 325.
- Strakosch, Maurice, obit., xii, 638.
- Strakosch, Max, obit., xvii, 576.
- Strandberg, C. W. A., ii, 612.
- Strange, Gen., x, 128, 129.
- Strangford, Emily A., obit., xii, 638.
- Stransky, M., x, 108.
- Strasburg, university at, ix, 359; view of the cathedral of, ii, 351.
- Stratford de Redcliffe, obit., v, 603.
- Strathnairn, Lord, obit., x, 670.
- Stratton, Charles H., viii, 596.
- Stratton, J. L. N., obit., xiv, 648.
- Stratton, J. Willis, obit., i, 624.
- Strauch, Col., x, 191.
- Strawbridge, J. D., obit., xv, 668.
- Street, Alfred B., sketch, vi, 825.
- Street, George E., obit., vi, 696.
- Street-cars, law regarding, iii, 523; modes of traction, ii, 495; iv, 346.
- Streight, A. D., obit., xvii, 576.
- Strelak, the Russian ship, x, 13.
- Stremayr, Dr., sketch, iv, 60.
- Strikes, ix, 344; xi, 277, 358, 453; xii, 742 *et seq.*; xiv, 377, 390; xix, 495; xix, 728; in France, xiii, 349; at Carmaux, xvii, 288; granite workers, xvii, 430; coal, xviii, 328; xix, 372; the Pullman, in Illinois, xix, 363; railroad, xix, 91, 372; miners', in Illinois, xix, 362; and lockouts in New York State, xx, 543; in Massachusetts, xx, 463. See also Labor Strikes.
- Stringham, Silas H., sketch, i, 736.
- Stroecker, Dr., xi, 538.
- Stromeyer, August, obit., xii, 638.
- Strong, James, obit., xix, 601.
- Strong, water-gas process, viii, 375.
- Strong, W. E., obit., xvi, 656.
- Strong, W. L., mayor, port., xix, 536.
- Strong, William, obit. and port., xx, 595.
- Strong's island, x, 138, 141, 143.
- Stronhal, V., experiments, xii, 749.
- Strontium, ix, 477.
- Strophanthin, x, 300.
- Strother, D. H., sketch, xiii, 654.
- Stroussberg, B. H., obit., ix, 622.
- Structure of organisms, xii, 668.
- Struve, Otto, experiments, ix, 47, 53; x, 594; xi, 51.
- Stry, burning of, xi, 73.
- Strychnine, identification, xii, 109.
- Strope, W. G., experiments by, viii, 113.
- Stuart, A. H. H., obit., xvi, 656.
- Stuart, G. H., obit., xv, 668.
- Stuart, Sir John, obit., i, 643.
- Stuart, Mary M., obit., xvi, 657.
- Stuart, Villiers, ix, 279.
- Stubbs, experiments, vi, 280.
- Sturgeon, Daniel, obit., iii, 646.
- Sturgis, S. D., sketch, xiv, 648.
- Sturtevant, B. F., obit., xv, 668.
- Styrone, x, 300.
- Suakin, expedition in, viii, 300; railroad in, ix, 316.
- Submarine borings, xvii, 255.
- Submarine foundations, xviii, 280.
- Submarine gun, xvi, 558.
- Subsidies, Congress on, i, 166.
- Substances, New. See Chemistry.
- Subways for wires, xiii, 311.
- Successions, intervention, vii, 627.
- Succoth, ix, 19; x, 36.
- Sudeikin, Col., murder of, xii, 724.

- Suez Canal, the, effect of, ii, 263; profits of, 270; affected by the Turkish War, 271; cost to Egypt, 271; value to Egypt, vii, 236; enlargement of, viii, 307; progress, ix, 311; x, 308; xi, 311; construction, xii, 240; neutralization, 242; xiii, 289; xiv, 285; xv, 277; xvii, 247; xviii, 277; xix, 254; xx, 245.
- Suffrage, resolutions on interference with the right of, i, 180, 181; Garibaldi on universal, iv, 526; property qualification for, 771; agitation in Belgium for universal, vi, 59; xviii, 76; restrictions upon, xii, 245.
- Sugar, xiii, 500; culture in Minnesota, iii, 568; commerce in, iv, 169; test for, v, 94; culture in Queensland, vii, 44; in Cuba, viii, 264; xii, 216; duty on, viii, 219; tests, etc., viii, 745; law in Belgium, ix, 80; tax in France, 343; crisis in trade, 379; new kind, x, 154; xi, 139; refining of, in Chili, xii, 115; bounties, 345; xiii, 398; convention, xiv, 396; xvii, 124; general article on, xvii, 714; beets, xviii, 597; manufacture, centenary of, xix, 442.
- Sugar and wine exhibition, xiv, 82.
- Suleiman Bey Sami, obit., viii, 605.
- Suleiman Pasha, sketch, ii, 703; obit., viii, 605.
- Sul Hippi, x, 752.
- Sullivan, Alexander M., obit., ix, 622; x, 713.
- Sullivan, A. S., obit., xii, 615.
- Sullivan, Barry, obit., xvi, 686.
- Sullivan, John, monument, xix, 519.
- Sullivan, Sir Edward, obit., x, 670.
- Sulphur, new oxide of, i, 98; as a mordant, 99; new process, vii, 90; test for, viii, 112; from alkali waste, 115; discovery of, xi, 556; xii, 307; process for extracting, ix, 122.
- Sulphur-Alcohol, xii, 678.
- Sulphurets, reducing action, ii, 93.
- Sulphur Springs, x, 598.
- Sultan, plot to dethrone, xii, 773.
- Sulu, cession of, to North Borneo Company, vi, 329; Archipelago, the, xiii, 748.
- Sumatra, revolt in, iii, 597, 598; vii, 590; viii, 557; Government railways in, xvii, 255. See Aceh.
- Summerside, xiv, 161.
- Sun, the. See Astronomical Progress.
- Sunapee Lake, xiv, 590.
- Sunday Laws, iv, 667; Maryland, 591; Texas, 830; Ohio, vi, 699; California, viii, 78.
- Sunday Legislation, xiii, 748.
- Sunday rest, international congress, xviii, 699.
- Sunday-schools, in India, i, 405; Raikes anniversary, v, 674; xviii, 700.
- Sunderland, Thomas, obit., xi, 703.
- Sungari, sources of, xii, 311.
- Sungarians, revolt of, ii, 101.
- Sunn hemp, xiii, 248.
- Sunsets, red, x, 48; xi, 54, 546.
- Sunshine, recording of, x, 583.
- Superior, Wis., xv, 147.
- Suppé, F. von, obit., xx, 619.
- Surand, Gustave, x, 358.
- Surgery, process in, vi, 555; viii, 747; ix, 746; x, 742; xiii, 752; advances in, xviii, 701.
- Surinam, xvi, 564.
- Surveys of public lands, xiii, 467.
- Susiana, excavations in, xi, 26.
- Suspension bridge, Brooklyn, illustration, i, 257.
- Suspensions from office, xi, 238.
- Sutherland, C., obit., xx, 595.
- Sutherland, G. G. L. G., obit., xvii, 603.
- Sutherland, John, obit., xvi, 686.
- Sutherland, Josiah, obit., xii, 615.
- Sutro Tunnel, the, iii, 288.
- Sutter, John A., sketch, v, 674.
- Sutton, G. L., invention, xi, 743.
- Sutton, Henry, invention, vii, 266.
- Sutton's battery, vii, 266.
- Sverdrup, Johan, x, 745; xiii, 757.
- Swain, Gen. D. G., trial, ix, 776.
- Swain, J. B., obit., xx, 595.
- Swamp-Lands, reclamation of, iv, 625; vi, 251; decision, xiii, 499.
- Swan, electric lamp of, vii, 275; ix, 305; illustration, 308.
- Swann, Thomas, obit., viii, 595.
- Swat, the Akhund of, authority of, see Afghanistan, ii, 4, 6; hatred for British influence, 7; iii, 582; obit., 648.
- Swayne, Noah H., obit., ix, 612.
- Swaziland, xii, 93; ix, 107; xviii, 126; xix, 104; xx, 114.
- Sweat-duets, closing, v, 356.
- Sweating-sickness, xiii, 313.
- Sweating system, the, xiii, 391.
- Sweden and Norway, in each volume; Sweden: views in, i, 737, 738; ii, 705; the Council of State made a ministry, 738; metric system, 738; emigration, vii, 769; the constitution of Sweden, viii, 754; liquor laws, xix, 734; Norway: admitted to the monetary union, i, 738; railroad loans, iii, 777; royal vetoes and dead-lock, v, 676; radical party, vi, 827; Republican movement, vii, 771; constitutional monarchies under one king, vii, 767; Norway a republic of peasants, 771; conflicts between the King and Storting, 771; Björnsterne Björnson leader of the peasant party, 772; political crisis, viii, 755; ministers impeached, new ministry, ix, 751, 752; conflict with Sweden, x, 745; xviii, 706; xx, 712; separation, xviii, 745; ministerial crisis, xii, 754.
- Swedenborgians. See New Church.
- Swedes' Church, old, xviii, 257.
- Swedish quarto-millennium, xiii, 506.
- Sweeny, T. W., obit., xvii, 576.
- Sweets, disease from, viii, 289.
- Sweetser, Seth, obit., iii, 646.
- Sweetzer, J. B., obit., xiii, 654.
- Swett, Leonard, obit., xiv, 648.
- Swift, E. D. T., xi, 57; x, 53.
- Swift, John F., obit., xvi, 657.
- Swift, Lewis, discoveries by, ii, 46; iii, 33, 36; iv, 51; v, 35; vi, 38, 39; prizes to, iii, 39; vii, 41; observatory for, v, 36; discoveries, x, 51, 53, 56; xii, 45.
- Swinburn, Ralph, obit., xx, 596.
- Swinburne, John, obit., xiv, 649.
- Swing, David, obit., xix, 601.
- Swinging-ship's berths, xvi, 709.
- Swinhoe, R., obit., ii, 612.
- Swinton, W., obit., xvii, 576.
- Swisshelm, Jane G., obit., ix, 612.
- Swiss lakes, soundings, xii, 313.
- Switzerland, in every volume; views in, i, 739; ii, 705, 706; cantonal constitutions adopted, i, 739; difficulty in Ticino, 739; international postal congress, 740; uniform citizenship law, 740; capital punishment restored, iv, 825; school act, 825; military defenses, v, 676; vii, 775; bill for separation of church and state rejected, v, 676, 677; rectification of Baden boundary, 677; rights of asylum, vi, 829; Socialist congress forbidden, 829; the Savoy question, 829; landslips, 830; Col. Frei, vii, 775; ix, 754; x, 746; religious conflict, viii, 756; Mormon agents, 754; conflict with Ticino, 754; expulsion of Anarchists, 754; x, 746; withdrawal from the Latin Union, ix, 754; international conference, 755; the temperance question, x, 746; the church question in Ticino, 746; copyright conference, x, 746; xi, 810; xii, 755.
- Switzerland settlement, the, xv, 94.
- Swords, Thomas, obit., xi, 703.
- Sybel, H. von, obit., xx, 619.
- Sydney, Australia, exhibition at, ii, 52; iii, 55; v, 40.
- Symonds, J. A., obit., xviii, 587.
- Symonds, Sir T., obit., xix, 622.
- Synge, Col., captivity of, v, 690.
- Syntheses, new, v, 96.
- Syrause, N. Y., xi, 186; water, xix, 779.
- Syr Darya, diversion, viii, 309.
- Syrian inscriptions, xiv, 23.
- Szygium jambolanum, x, 300.
- Szechenyi, Count Stephen, explorations by, v, 289; sketch, 371.
- Taafe, Eduard, sketch, iv, 60; x, 71; obit., xx, 620.
- Tabriz, city gate of, ii, 637.
- Taché, Alexandre A., obit., xix, 622.
- Taché, Archbishop, x, 711.
- Tacitus, quoted, ix, 600.
- Tacoma, Mount, exploration of, xix, 772; xx, 757.
- Tacoma, Wash., xiv, 161.
- Tadjiks, the, x, 8, 8.
- Taft, A., sketch, i, 740; obit., xvi, 657.
- Tage-envelopes, xii, 688.
- Taglioni, ix, 310; obit., ix, 623.
- Talpanhes, ill., xi, 28, 29.
- Tahiti, annexed to France, v, 40.
- Taimyr-Land, iii, 356, 357.
- Taine, H. A., obit., xviii, 587.
- Tainter, experiments, vi, 257, 787.
- Tait, A. C., sketch, vii, 775.
- Tait, L., investigations by, x, 742.
- Takale, ix, 301.
- Talbot, Sir Charles, obit., i, 643.
- Talbot, Joseph, obit., viii, 595.
- Talbot, Thomas, iii, 535.
- Talbot, W. H. F., obit., ii, 612.
- Talcott, Alvan, obit., xvi, 657.
- Talcott, John L., obit., xii, 615.
- Tallahassee, university at, ix, 331.
- Talmage, Goyne, obit., xvi, 657.
- Talmage, J. V. N., obit., xvii, 577.



- Tamanief, battle of, ix, 295.  
 Tanasese, King, obit., xvi, 686.  
 Tanasese, rebellion of, xix, 710.  
 Tamberlik, E., sketch, xiv, 670.  
 Tamerese, xlii, 730.  
 Tampa, Fla., xix, 143.  
 Tamsul, siege of, ix, 143.  
 Tanagra, discoveries at, xiii, 27.  
 Tanis, relics at, ix, 20.  
 Tanganyika, Lake, outlet of, v, 297;  
   antislavery posts at, xviii, 188.  
 Tangyet Woon, xi, 115.  
 Tannate of punicine, x, 300.  
 Tanner, E. A., obit., xvii, 577.  
 Tanno cannabine, ix, 272.  
 Tapestries, ix, 787.  
 Tappan, H. P., obit., vi, 689.  
 Tappan, M. W., obit., xi, 703.  
 Tappeiner, experiments by, x, 694.  
 Tarafat, fight at, x, 565.  
 Tarawera, Mt., eruption of, xi, 66.  
 Tarbox, I. N., sketch, xiii, 654.  
 Tarbox, John K., obit., xli, 615.  
 Target, deflecting, xiv, 812.  
 Tariff, in Argentine Republic, ii,  
   32; Austria, 56, 58; iii, 42; x,  
   70; France and Germany, ii,  
   114; iv, 435; Mexico, iii, 553;  
   Brazil, v, 63; Chili, 97; xiv, 79,  
   136; Canada, v, 213, 219; iv,  
   317; Peru, vi, 735; Spain, vii,  
   752; effect of high, in Germany,  
   viii, 394; Russian, x, 716; extra,  
   in Brazil, xiv, 82; United States,  
   Presidents on, ii, 667; viii, 160;  
   xiii, 190; bill for commission, v,  
   172; vii, 139; Morrison's bill, ix,  
   203; law of 1890, xv, 205; of  
   1894, xix, 170.  
 Tariff Revision, vii, 777; viii, 193;  
   text of act, 194; xi, 252; in Ger-  
   many, x, 416.  
 Tarim River, explored, xii, 310.  
 Tarnoczy, Archbishop, obit., i, 643.  
 Tarpon, the, illustration, xii, 756.  
 Taschereau, Cardinal, xii, 716, 717.  
 Tasmânia, viii, 36; ix, 60; queen  
   and last native of, i, 53; tin-  
   mines in, vi, 44; gold, 47; x,  
   66; xi, 64; xii, 48; xiii, 67; xiv,  
   57; xvi, 64; xvii, 45; xviii, 59;  
   xiii, 60; xx, 69.  
 Tate, Ralph, port., xviii, 39.  
 Tate, R., defalcation, xiii, 462.  
 Tattegrain, Francis, xii, 275.  
 Tauchnitz, C. B., obit., xx, 620.  
 Taunton, recent growth of, xi, 187.  
 Taubert, Wilhelm, obit., xvi, 686.  
 Taulbee, W. P., obit., xv, 668.  
 Taunt, Emory H., obit., xvi, 657.  
 Tavernier, Jules, sketch, xiv, 649.  
 Tawhiao, obit., xix, 622.  
 Tax, direct, refunding of, xiv, 203.  
 Taxes, Muhlenberg, xviii, 425.  
 Tay Bridge, the, x, 328.  
 Taylor, Robert W., obit., iii, 646.  
 Taylor, Alfred, obit., xvi, 658.  
 Taylor, Alva B., sketch, xiv, 649.  
 Taylor, Arthur F., obit., viii, 595.  
 Taylor, Bayard, sketch, iii, 778.  
 Taylor, B. F., obit., xii, 755.  
 Taylor, David, obit., xvi, 658.  
 Taylor, Frederick, sketch, xiv, 670.  
 Taylor, Gen. Sir Henry, i, 643.  
 Taylor, Sir Henry, author, xi, 727.  
 Taylor, Isaac, ix, 23.  
 Taylor, Isaac E., sketch, xiv, 649.  
 Taylor, James W., obit., xviii, 572.  
 Taylor, John O., obit., xv, 668.  
 Taylor, Julius S., obit., xvi, 658.  
 Taylor, L. M., obit., xvii, 577.  
 Taylor, Nelson, obit., xix, 602.  
 Taylor, Richard, sketch, iv, 825.  
 Taylor, S., experiments by, iii, 727.  
 Taylor, Tom, obit., v, 603.  
 Taylor, W. B., theory of, viii, 24.  
 Taylor, William, obit., xi, 704.  
 Taylor, W. M., obit., xx, 596.  
 Taylor, W. R., sketch, xiv, 649.  
 Tcherkaskij, Prince, obit., iii, 662.  
 Tchernajeff, Gen., x, 6.  
 Tchernicheffski, N. G., xiv, 670.  
 Teachers' Association, xiii, 760.  
 Teall, F. A., obit., xix, 602.  
 Tebbutt, J., discovery by, vi, 38.  
 Tecchini, F., observations by, xi,  
   49, 546.  
 Tecchio, Sebastiano, obit., xi, 727.  
 Tees River, breakwater on, iii, 287.  
 Teheran, gate of, ii, 638.  
 Tehuantepec ship railroad, ix, 312;  
   x, 591; xii, 230, 502; xiii, 579.  
 Temenc tribe, the, x, 8.  
 Teisserene de Bort, ii, 320.  
 Tekke Turkomans, the, x, 7.  
 Te Kooti, obit., xviii, 587.  
 Telegraph companies, xi, 636; con-  
   test between, v, 417; suits  
   against, viii, 576; confidential  
   nature of messages, iv, 533; tar-  
   iff adopted, x, 420.  
 Telegraphs, subterranean, ii, 278;  
   iv, 347; v, 252; ocean, iv, 346;  
   v, 242, 251, 252; signal-service,  
   iv, 816.  
 Telegraphs and Telephones, statis-  
   tics of, i, 240; vii, 119, 785.  
 Telegraphy, improvements in, i,  
   515, 520; vi, 255, 256; synchro-  
   nous, ix, 309.  
 Teleki, Count, obit., i, 643.  
 Tel-el-Mashkutah, x, 35.  
 Tel-el-Yehoodieh, xii, 18.  
 Telepathy, xviii, 708.  
 Telephone, the, i, 740; ii, 706;  
   statistics, vii, 785; ix, 307; xi,  
   811; mechanical, xi, 811; litigation,  
   xii, 649.  
 Telescopes, xii, 137; xvi, 55; Lick,  
   x, 54; Yerkes, xviii, 47.  
 Tell Defenneh, xi, 28.  
 Teller, Henry M., portrait, vii, 811.  
 Tellkamp, J. L., sketch, i, 741.  
 Tellurium, new oxide of, viii, 111;  
   in copper, ix, 477.  
 Telphering, viii, 679.  
 Téméraire, illustration, vii, 569.  
 Tempel, discoveries, ii, 46; iv, 51;  
   comet, x, 50; obit., xiv, 671.  
 Temperance. See Prohibition, viii,  
   661, and for conventions and  
   State acts, see articles on the  
   States.  
 Temperance map, xvi, 815.  
 Temperance Society, Church of  
   England, xiii, 14.  
 Temperature, sense of, x, 689; de-  
   termination of rate, xi, 540; con-  
   ditions that affect, xii, 488; ob-  
   servations, in Russia, 488; of  
   the ocean, 489; at Boston, Eng-  
   land, and Mount Washington,  
   489; effect of, on the blood,  
   673; xiii, 531; xiv, 546.  
 Temple, Sir Richard, ix, 46.  
 Temple, W. G., obit. and port.,  
   xix, 602.  
 Temporal Power, the, Spanish  
   Cortes on, ii, 699. See Papacy.  
 Tenants, compensation for im-  
   provements by, viii, 410.  
 Ten Broeck, R., obit., xvii, 577.  
 Tenduf, vi, 327.  
 Tengkoé Arab, v, 555.  
 Tennessee, in each volume; views,  
   i, 744; ii, 711; commission of  
   agriculture, statistics, and mines,  
   i, 741; State debt, i, 742; ii,  
   708, 710; iii, 780; iv, 827; vi,  
   830, 831; viii, 757; bill to abol-  
   ish fees, iv, 826; repudiation of  
   railroad bonds, 827; repeal of the  
   Memphis charter and others, 829;  
   yellow fever, 829; education, pen-  
   al institutions, 681, 682; in-  
   crease of representatives, vi,  
   831; mineral wealth, vii, 789;  
   manufactures, 790; ochre de-  
   posits discovered, ix, 757; tim-  
   ber, 757; peanuts, x, 748; xii,  
   758; population, xv, 795, and  
   xvi, 818; convict mining troubles  
   in, xvi, 821, and xvii, 725; na-  
   tional park, xx, 718; centennial  
   exposition, xx, 715.  
 Tennyson, Alfred, Lord, sketch  
   and port., xvii, 727.  
 Tenney, Sanborn, obit., ii, 589.  
 Tenney, S. M. B., obit., i, 624.  
 Tenney, W. J., sketch, viii, 758.  
 Teuno (Mikado), the, ix, 416.  
 Tenom, rajah of, ix, 558.  
 Tenure-of-Office Act, x, 432.  
 Te Rama Rao, volcano, ix, 275, 276.  
 Tergukassoff, sketch, ii, 712.  
 Terhune, John, obit., xi, 704.  
 Terra-cotta, ix, 246.  
 Terra del Fuego, x, 41; xii, 315;  
   the people, x, 41, 42.  
 Terrapin-Culture, x, 748.  
 Terreros, Gen., x, 142.  
 Terriers, ix, 260, 261.  
 Territories, United States, survey  
   of, i, 333; iii, 336; admission of,  
   ix, 213.  
 Terry, A. H., i, 43; x, 429; obit.,  
   xv, 796.  
 Terry, David S., obit., xiv, 649.  
 Terry, William, obit., xiii, 655.  
 Terziani, Eugenio, obit., xiv, 671.  
 Teschenberg, E., obit., xi, 727.  
 Test-oath, repeal, ix, 208.  
 Tetnuld, Mt., xii, 313.  
 Teuffel, W. G., obit., iii, 662.  
 Teusch, Dr., xi, 382.  
 Tewfik Bey, death of, viii, 302.  
 Tewfik I., x, 305, 307. See Mo-  
   ammed Tewfik.  
 Tewfik, Pasha, port., xvii, 246.  
 Tewfik, Pasha, obit., xvii, 604.  
 Tewksbury almshouse, viii, 517.  
 Te Whiti, vii, 45.  
 Texarkana, xvi, 172.  
 Texas, in every volume; view in,  
   xi, 814; new constitution, i, 745,  
   747; land-office, 747; natural  
   advantages of the State, 714;  
   cotton-crop, cattle-trade, 736;  
   constitutional amendments, iv,  
   829; vi, 836; xii, 760; land-  
   frauds, iv, 831; fugitive crimi-  
   nals, 831, 832; school-lands, v,  
   685; cost of frontier battalion,  
   ix, 834; State capitol burned,  
   837; new capitol, vii, 794; xi,  
   815; the governor's course as to  
   convicts, etc., vii, 795; resources,  
   soil, and climate, 795; drought,  
   xi, 815; Greer county, xii, 760;  
   population, xv, 798; public lands,  
   xv, 800; drouth in, xvii, 739;  
   irrigation, xix, 741; cotton con-  
   vention, xx, 720; mineral re-

- sources, xx, 719; pugilism in, xx, 720.
- Texas Indemnity stock, vii, 399.
- Textile, a new, xii, 140; xiii, 258.
- Textile manufactures, vi, 543.
- Thacher, George H., obit., xii, 616.
- Thackray, G. E., experiments, xi, 534.
- Thalberg, xi, 48.
- Thalline, x, 300.
- Thallophytes, ix, 93.
- Thamnoi, battle at, x, 31.
- Thanksgiving, Japanese, xi, 459.
- Thasos, ruins at, xii, 22.
- Thatcher, J. K., obit., xvi, 658.
- Thatcher, S. O., obit., xx, 596.
- Thatcher, T. A., obit., xi, 704.
- Thaumegas, ruins of, xiv, 28.
- Thaxter, Benjamin, obit., xi, 704.
- Thaxter, Celia, sketch and port., xix, 743.
- Thaxter, Edward R., obit., vi, 689.
- Thayer, Nathaniel, obit., viii, 595.
- Thayer, Thomas B., obit., xi, 704.
- Thebaud, Dr. J. S., obit., i, 625.
- Thebaw, King, iv, 100; attempt to assassinate, v, 69; position of, vii, 416; x, 113, 114, 115; xii, 81.
- Thebes, royal mummies at, vii, 261.
- Thein, detection of, ii, 95.
- Theistic Church, ix, 759.
- Thekut, x, 36.
- Themistocles, wall of, x, 36.
- Theological Schools, viii, 760.
- Theosophy, xviii, 716.
- Theresa, Enpress, obit., xiv, 671.
- Thérèse, Sister, obit., xvi, 687.
- Thermo-Chemistry, iii, 90.
- Thessaly, brigandage in, v, 690.
- Thetis, the, ix, 29 *et seq.*
- Thibaudin, M., viii, 357, 366, 367.
- Thibaut, M., x, 155.
- Thibet, explorations in, i, 329; iii, 359; iv, 399; v, 289; ix, 348; x, 395, 396, 397; xi, 377; cause of difficult access, iv, 400; productions, 400, 401; proposed mission to, xi, 439.
- Thieblin, N. L., sketch, xiii, 655.
- Thierry, Édouard, obit., xix, 623.
- Thiers, L. A., sketch, ii, 715; address of, to electors, 315.
- Thionville, defense of, x, 480.
- Thiophen, ix, 122.
- Thistle, Russian, xix, 555.
- Thollon, observations, viii, 20, 25.
- Tholuck, F. A. G., obit., ii, 612.
- Thomas, A. G., obit., xvii, 604.
- Thomas, B. F., obit., iii, 646.
- Thomas, Elisha S., obit., xi, 596.
- Thomas, Edward, obit., xi, 727.
- Thomas, Gen. George H., x, 428.
- Thomas, Francis, obit., i, 625.
- Thomas, P. F., obit., xv, 668.
- Thomas, Sidney G., invention by, v, 208; obit., x, 670.
- Thomes, W. H., obit., xx, 596.
- Thompson, A. R., obit., xx, 597.
- Thompson, Alfred, obit., xx, 597.
- Thompson, C. G., sketch, xiii, 655.
- Thompson, Charles P., obit., xix, 602.
- Thompson and Houston, invention by, iii, 279; vii, 266.
- Thompson, Elizabeth, ix, 44.
- Thompson, George, obit., iii, 662.
- Thompson, J., obit., xv, 668.
- Thompson, Jacob B., x, 159.
- Thompson, John, obit., xvi, 658.
- Thompson, J. P., obit., iv, 696.
- Thompson, Joseph Peter, obit., xix, 602.
- Thompson, L., discovery, iii, 84.
- Thompson, Launt, x, 362; xii, 280; obit., xix, 603.
- Thompson, Mary H., obit., xx, 597.
- Thompson, Robert L., observations by, xi, 536.
- Thompson, R. W., sketch, ii, 716.
- Thompson, S. P., theory of electricity, vi, 240.
- Thompson, Sir J. S. D., obit., xix, 623.
- Thompson, W. M., obit., xix, 603.
- Thompson, W. T., obit., vii, 348.
- Thoms, William J., obit., x, 670.
- Thomsen, J., experiments, ii, 499.
- Thomson, Sir C. Wyville, expedition of, vii, 321; obit., 647.
- Thomson, Elihu, xii, 486.
- Thomson, Joseph, explorations by, iv, 402; v, 296; viii, 385; ix, 347, 545; x, 393, 395; obit., xx, 620.
- Thomson, J. J., xii, 100.
- Thomson, R. T., xii, 108.
- Thomson, W., obit., xv, 690.
- Thomson, W., inventions, ii, 498; iii, 351; iv, 419; vi, 239, 253, 255; vii, 223, 269; viii, 116; ix, 46.
- Thorington, James, obit., xii, 616.
- Thorium, x, 153.
- Thornburgh, J. M., obit., xv, 668.
- Thorne, Charles R., obit., viii, 596.
- Thorne, C. Robert, obit., xviii, 573.
- Thorne, John S., obit., v, 596.
- Thornton, Sir Edward, x, 4, 11.
- Thornton, H. R., obit., xviii, 573.
- Thornton, John W., obit., iii, 646.
- Thornycroft, Mary, obit., xx, 621.
- Thorold, A. W., obit., xx, 621.
- Thorpe, Prof., xii, 110, 111.
- Thorpe, T. B., sketch, iii, 788.
- Thorwaldsen museum, i, 223.
- Thoulet, M. J., xii, 316.
- Thousand Islands, the, vi, 838.
- Thrasher, John S., obit., iv, 696.
- Thrift Congress, iii, 314.
- Throckmorton, J. W., obit., xix, 603.
- Throop, M. H., obit., xvii, 577.
- Thuen-Quan Fort, besieged, x, 26.
- Thuku-t (Pithom), x, 36.
- Thunderstorms, xiii, 534; xx, 480.
- Thuong, obit., xi, 728.
- Thurman, A. G., obit. and port., xx, 597.
- Thursday Island, fortified, x, 61.
- Thurston, F. T., discoveries, vi, 542; ix, 46, 477, 478, 737.
- Thurston, J. B., x, 420.
- Thury, M., ix, 519.
- Thuyet, x, 30, 31.
- Thwing, Edward Payson, obit., xviii, 573.
- Thymol as an anti-ferment, i, 95.
- Thyroidectomy, ix, 748.
- Thyroid gland, the, x, 695.
- Tiberias, city of, xii, 25.
- Ticino, revolution in, xv, 793; revolt in, xvi, 813.
- Tide-indicator, xviii, 285.
- Tidemand, Adolf, sketch, i, 747.
- Tidy, M., on water analysis, iii, 91.
- Tientsin, treaties of, x, 28, 29.
- Tierra de la Guerra, v, 298.
- Tiff, iv, 639, 640.
- Tiffin, Ohio, xvi, 172.
- Tigre, war in, xviii, 1; Italian advance into, xx, 1.
- Tilbury docks, x, 333.
- Tilden, Moses Y., obit., i, 625.
- Tilden, Prof., his address, xiii, 45.
- Tilden, Samuel J., sketch and portrait, i, 748; his nomination, 785; letters from, iii, 717; v, 697; obit. and portrait, xi, 815.
- Tilden, W. A., xi, 137; xii, 102.
- Tiles, ix, 248.
- Tileston, William M., obit., v, 596.
- Tilghman, R. C., obit., iv, 697.
- Tillamook Light-house, vii, 283; illustration, xix, 635.
- Tilson, Davis, obit., xx, 597.
- Tilton, John R., sketch, xiii, 655.
- Tilton, John Rollin, xi, 347.
- Timbuctoo, vi, 328.
- Time, standard, colored map, viii, 761; signals, ix, 48; universal, 54; reckoning, xi, 59.
- Timlow, G. W., sketch, xiv, 650.
- Timoffski, i, 323.
- Timor Island, revolt in, xii, 684.
- Tin, alloys of, iv, 4; deterioration of, vii, 533; viii, 116; in Dakota, 523; market, ix, 480; xiii, 526; xvi, 510; xviii, 483; discoveries of, xv, 801. See Metallurgy.
- Tindall, Admiral, obit., i, 643.
- Tinedek, xi, 115.
- Tin-plate Industry, xviii, 717.
- Tintinnabulum, xiii, 24.
- Tintometer, xvi, 710.
- Tippoo Tip, x, 795; xii, 251.
- Tirard cabinet, the, xii, 297.
- Tirard ministry, fall of, xiii, 345; xiv, 334.
- Tirard, Pierre E., sketch, iv, 386; viii, 357, 367; obit., xviii, 587.
- Tirhakah, King, ix, 20.
- Tiryns, ix, 23; x, 37; xi, 33.
- Tisdell, N. P., report, x, 192, 193.
- Tisserand, observations, iii, 36.
- Tissot, Charles J., obit., ix, 623.
- Tissues, examining, ix, 124.
- Tisza, Koloman, ix, 70; xii, 51.
- Tithe agitation, xiii, 392; xiv, 391.
- Tithes, in Quebec, viii, 674.
- Titian, sale of a picture by, x, 36.
- Titians, Theresa, obit., ii, 612.
- Toadstools and Mushrooms, xi, 590.
- Tobacco, commerce in, iv, 170; cultivation of seed, v, 197; inspection, vii, 463; monopoly in Germany, 356; injured by manures, x, 274; statistics, xvii, 764.
- Tobias, Laging, x, 625.
- Tobler, Titus, obit., ii, 612.
- Tobogganing, ix, 759.
- Tocqueville, Count de, obit., i, 644.
- Todd, Lemuel, obit., xvi, 658.
- Todleben, E. F. I., sketch, ii, 716; obit. and portrait, ix, 761.
- Toggle-press, illustration, xi, 735.
- Togno negroes, ix, 365.
- Tokar, battle, ix, 292; xvi, 273.
- Tokio, University of, vi, 453.
- Toll, Baron E. von, xii, 316.
- Toledo, Ohio, growth of, xi, 187; water, xix, 779.
- Tollemache, Baron, obit., xv, 691.
- Tolles, ix, 508, 509, 512, 514.
- Toloachi plant, the, viii, 538.
- Tolstoi, Alexis, i, 475.
- Tolstoi, Demetrius, v, 346; xiv, 671.
- Tolstoi, Count Lyof, i, 475; x, 546; xi, 442; vii, 736; ix, 709.
- Tombs, in Spain, xii, 23.
- Tommasi, experiments, iv, 444.
- Tominasi, S., sketch, xiii, 669.
- Tom Thumb, obit., viii, 596.



- Tonic Sol-fa, ix, 545.  
 Tong King Sing, obit., xvii, 604.  
 Tonga Islands, the, ix, 366; church trouble in, x, 588; monument in, xiv, 29.  
 Tongaland, annexation of, xx, 111.  
 Tonite, x, 343.  
 Tonquin, war in, viii, 370; article, map, viii, 763; ix, 137-143, 338, 340; x, 24 *et seq.*; cost of the campaign to France, 27, 28; massacre of Christians in, 31; x, 170 *et seq.*; unpopular, 375; "the sinister man of," 380.  
 Toomath, John, obit., i, 625.  
 Toombs, Robert, obit., x, 749.  
 Tooth, Arthur, case of, ii, 19.  
 Tooting case, the, xiii, 187.  
 Topanovich, Col., x, 729.  
 Topeka, Kansas, growth of, xi, 187; Capitol at, ii, 416.  
 Topnaars, the, x, 138.  
 Torlonia, Alessandro, obit., xi, 728.  
 Tornadoes, prediction of, x, 581.  
 Toronto, Canada, growth of, xii, 130; views in, ii, 255; xii, 131.  
 Torpedo boats, xiii, 798; xvi, 558.  
 Torpedoes, ii, 717; xiii, 796; xiv, 812; xvi, 552; xviii, 720; nets, xvi, 558.  
 Torrens, R., land-transfer, x, 674.  
 Torrens, W. McC., obit., xix, 623.  
 Torsey, H. P., obit., xvii, 577.  
 Tortuga, island of, xii, 357.  
 Total depravity, x, 708.  
 Totten, C. L., invention, ii, 626.  
 Totten, George M., obit., ix, 613.  
 Toulmin, Camilla, obit., xx, 621.  
 Tourgee, Eben, obit., xvi, 658.  
 Tousey, Sinclair, obit., xii, 616.  
 Tower, Minn., xiii, 172.  
 Tower of London, ii, 364; explosion at, ix, 378; x, 454.  
 Towle, George M., obit., xviii, 573.  
 Townsend, Charles, v, 608.  
 Townsend, E. D., obit., xviii, 573.  
 Townshend, R. W., xiv, 650.  
 Tracy, B. F., sketch, xiv, 803.  
 Tracy, John M., obit., xviii, 573.  
 Tracy, Phineas L., obit., i, 625.  
 Trade commission, S. A., x, 165.  
 Trade-dollars, x, 246, 282; redemption of, xii, 201.  
 Trade-marks, decision on, iii, 831; x, 682; laws, xii, 204.  
 Trade Union Congress, xi, 359; xix, 337; of 1895, xx, 339.  
 Trafalgar Square, ii, 361.  
 Tramps, iv, 307, 516, 663, 675, 686, 715, 848; vi, 6.  
 Trans-Caspian lands, xii, 307; railroad, x, 16; xiii, 309; xiv, 5.  
 Transfusion, ix, 748.  
 Transits of planets. See *Astronomical Progress*.  
 Trans-Mississippi Congress, xviii, 748; xix, 495.  
 Transportation, bill for commission, v, 183; on the Mississippi, 483; statistics, xvi, 847; xvii, 768.  
 Transvaal Republic, war in, i, 748; annexation to the British Empire, ii, 7, 721; dissatisfaction in, iv, 128; revolt in, v, 81, 83; independence, vi, 4; outbreak, 86; settlement, 88, 359; troubles in, viii, 92; ix, 115.  
 Trapani, obit., xvii, 604.  
 Trappers, Indian, xviii, 110.  
 Trask, E., obit., xv, 669.  
 Traube, Ludwig, obit., i, 644.  
 Traube, M., theory of, viii, 120; researches by, xii, 108.  
 Traumaticene, ix, 273.  
 Travancore, Rajah of, v, 386.  
 Travers, W. P., obit., xii, 616.  
 Traversi, Dr., travels of, xii, 304.  
 Treadwell, John P., obit., i, 625.  
 Treason-trials at Leipsic, xi, 326.  
 Treasure of Dashur, xix, 21.  
 Treasury surplus, xi, 263.  
 Treat, C. H., nominated, xiii, 264.  
 Treat, Selah B., obit., ii, 589.  
 Treat, Samuel H., obit., xii, 617.  
 Treaties. See *articles on the countries making them*.  
 Treaty, right to make, viii, 396.  
 Trebelli, Zella, obit., xvii, 604.  
 Trebizond, ill., xx, 724.  
 Tree-planting, xii, 765.  
 Tregellas, W. H., obit., xix, 623.  
 Trelawney, E. J., sketch, vi, 838.  
 Tremain, Lyman, obit., iii, 646.  
 Trench, R. C., obit., xi, 820.  
 Trenchard, S. D., obit., viii, 596.  
 Trenholm, George A., obit., i, 625.  
 Trenton, growth of, xii, 132; illustration, ii, 552; monument at, xviii, 516; water, xix, 779.  
 Trépid, observations, vii, 37.  
 Tresca, experiments by, vi, 255.  
 Tresch, J. F. J., obit., xv, 669.  
 Trescott, T. C., xii, 107.  
 Trespass suits, in Illinois, v, 381.  
 Trevelyan, Charles, obit., xi, 728.  
 Trevelyan, C. E., ix, 690; xi, 399.  
 Tréveneuc, H., obit., xviii, 587.  
 Trevisanato, Cardinal, obit., ii, 613.  
 Trichinosis. See *Pork*, viii, 643.  
 Tricoupis, return of, xviii, 369.  
 Tricycles, ix, 85.  
 Tridæma squamosa, the, x, 35.  
 Trieste, five hundredth anniversary of union, with Austria, vii, 54; harbor-works of, viii, 306.  
 Trikoupis, xi, 411.  
 Trimble, Isaac R., sketch, xiii, 655.  
 Trimble, J. McD., obit., xvi, 659.  
 Trinidad, ix, 802; fire in, 802; asphaltum in, 803; xii, 801; xiii, 839; xiv, 403; xvi, 864; xvii, 793; British occupation of, xx, 95, 762.  
 Trinity church, Boston, xviii, 112.  
 Triple Alliance, the, viii, 452; xii, 328, 399; xiii, 69.  
 Tripp, Alonzo, obit., xvi, 659.  
 Tristan d'Acunha, island of, xii, 316.  
 Trn, fighting at, x, 728.  
 Troad, researches in the, ix, 25.  
 Troglodytes, caves of, xiii, 33.  
 Troillet, Marie, obit., xx, 621.  
 Trolle, Henrik Af, obit., xi, 728.  
 Trollope, A., sketch, vii, 798.  
 Trollope, T. A., obit., xvii, 604.  
 Troltsch, A., obit., xv, 691.  
 Tromholt, S., experiments by, viii, 30, 383.  
 Trommel, experiments by, iii, 91.  
 Trotter, T. E., obit., xvii, 578.  
 Trout, new species of, xiv, 792.  
 Troutowsky, C., obit., xviii, 587.  
 Trouvelot, observations by, i, 46; iii, 37; ix, 51.  
 Trow, John F., obit., xi, 704.  
 Trowbridge, W. P., obit. and port., xvii, 578.  
 Troy, site of ancient, ix, 24.  
 Troy, N. Y., xi, 188; water, xix, 779.  
 Troyon, Constant, xi, 346.  
 Trujillo, Gen. Julian, iii, 103.  
 Trumbull, H. C., explorations, ix, 27.  
 Trumbull, John, x, 677.  
 Trumbull, M. M., obit., xix, 603.  
 Trumpeter, the, x, 613.  
 Truss bridge, i, 414.  
 Trust, xiv, 793.  
 Trust companies, x, 293.  
 Truxtun, W. T., obit., xii, 617.  
 Tryon, D. W., xi, 346; xii, 278.  
 Tryon, G. W., sketch, xiii, 655.  
 Trypsin, x, 301.  
 Tsaribrod, fight at, x, 731.  
 Tschabuschnigg, A., obit., ii, 613.  
 Tschaikowsky, P., obit., xviii, 587.  
 Tseng, Marquis, x, 27, 28; obit., xv, 691.  
 Tso-Tsung-t'ang, v, 105; obit., x, 670.  
 Tsuchiakabe, xi, 292.  
 Tubercle bacillus, viii, 770.  
 Tuberculosis, vii, 798; ix, 663; in New York, xx, 542; Koch's remedy for, xv, 802.  
 Tucker, Henry H., sketch, xiv, 650.  
 Tucker, N. B., obit., xv, 669.  
 Tuckerman, Edward, obit., xi, 705.  
 Tuckerman, S. P., obit., xv, 669.  
 Tucson, Arizona, xii, 132.  
 Tu Duc, obit., viii, 605; x, 30, 32.  
 Tufts, Charles, obit., i, 625.  
 Tufts, Gardiner, obit., xvi, 659.  
 Tuigg, John, sketch, xiv, 650.  
 Tuileries and Louvre, ii, 310.  
 Tulane, Paul, obit., xii, 617; his donations, vii, 484.  
 Tulipine, x, 302.  
 Tulloch, John, obit., xi, 705.  
 Tulloch, Principal, quoted, xiii, 7.  
 Tun, Prince, sketch, xiv, 672.  
 Tundra, vii, 333.  
 Tungurahua, eruption of, xi, 306.  
 Tungus, the, vii, 333.  
 Tunis, i, 9; French intervention in, vi, 309, 311, 449, 840; Italian excitement over, vi, 448; vii, 437; treaty, 322; viii, 358; ix, 338, 340; x, 381; xii, 298; xiii, 353; xiv, 343; xvi, 314; xviii, 329.  
 Tunkers, xiii, 77; xiv, 69; xix, 84. See *article Baptists*, in each volume except xv, xvi, xvii.  
 Tunnel drainage, xiv, 558.  
 Tunnels, i, 255; ventilation of, vi, 248; spiral, *ibid.*; restoration of an old Roman, 249; the Hudson River, ii, 278; iii, 291; disaster at, v, 580; vii, 281; Baltimore, ii, 278; cost of Hoosac, vi, 537; Severn, ii, 278; vi, 249; vii, 282; British Channel, iv, 340; vi, 243, 248; panic concerning, vii, 284; viii, 306; Mersey, viii, 31; x, 331; illustrations, xi, 316, 317; in Saxony, ii, 278; St. Gothard, iii, 280; iv, 340; v, 246; vi, 248, 819; vii, 11, 280; Mont Cenis, v, 247; Arlberg, vi, 243, 244, 247; vii, 281; viii, 310; x, 331; proposed Simplon, vii, 11; through the Pyrenees, vi, 243; through Popocatepetl, viii, 537; illustration of the, at Hallett's Point, i, 380; xi, 316; Severn Railway, 317; Big Bend, 318; at Stockholm, illustration, 319; submarine, 319; of Galeria, 752; xviii, 279; the Jeddo, xx, 251.

- Tupman, G. L., observations by, iii, 36; iv, 53.
- Tupper, H. M., obit., xviii, 573.
- Tupper, Martin F., obit., xiv, 672.
- Turco-Greek commission, the, iv, 459.
- Turf, ten years' record, xii, 767.
- Turgenieff, I., sketch, viii, 771.
- Turkey, the, x, 390.
- Turkey, in each volume; maps, i, 750, 755; religions and nationalities of, i, 753; the Andrassy note, 754; relief of Nicsie—victory by Raouf Pasha, 756; Mukhtar Pasha takes command, 756; reforms promised, 756; the Bosnian commission, 756; Herzegovinian insurgents reject the provisions of the Andrassy note, 757; demands of insurgents, 758; military encounters, 758; expedition of Liubibratics, 758; attacks of Mukhtar Pasha, 758, 759; massacre at Salonica, 759, 760; conference at Berlin, 760; dethronement of Abdul-Aziz, 760; Murad V becomes Sultan, 760; death of Abdul, 760, 761; Ristich-Gruitch ministry, 761; declaration of war, 762; Servians storm Bialina, 763; army of the Ibar under Gen. Zach, 764; Montenegrins take Stolatz, 764; Servians beaten at Mramor, 765; Turks take Saitchar, 765; battles of Alexinat and Plana, 765, 766; defeat of Turks, 767; Roumanian demands, 767; the convention of Ghent agreed to, 767, 768; Murad V insane and removed, 768; Abdul Hamid, Sultan, 768; armistice, 769; plot against the Sultan, 770; capture of Alexinat, Russian interference, truce, 771; Midhat Pasha, Vizier, 773; new constitution, 773, 774; the three sultans, 774. For an account of the war with Russia, see the article Turkey in vols. ii and iii. Albanian demands, v, 687; scheme of government for Asia Minor, 689; famines, 689, 690; murders, 690; complication of the Eastern question, vi, 839; Russian interference, vi, 842; Albanian league, 842; financial schemes of the Sultan, vii, 802, 803; Said Pasha's proposed reforms, 803; discontent and sedition, 804; the Armenian question, viii, 773; action in reference to Bulgaria, x, 110; Cretan troubles, 774; x, 752; xii, 773; religious difficulties, ix, 764; disturbances in Albania, x, 752; agreement with England on the Egyptian question, 755; treaty with the United States, xi, 822; the œcumenical patriarchate, xii, 773, 774; famine in Asia Minor, xii, 774; Armenian troubles, xix, 745; Armenian question, xx, 720.
- Turkish bath, ii, 725.
- Turkistan, i, 775; ix, 712; annexed by Russia, x, 2; statistics of, 721; revolution in, xiv, 5.
- Turkomania, x, 4; xii, 308.
- Turkomans, robberies by, i, 7; Persian expedition against, 44; irruption of, 661; war with Russians, iv, 775; successes of, 776; turning of the Attrek, 776; character of, vi, 733; vii, 681; ix, 4; x, 2.
- Turnbull, Robert, sketch, ii, 745.
- Turner, C. Y., prize, x, 361.
- Turner, Col. H. L., port., xx, 517.
- Turner, John, obit., ii, 589.
- Turner, J., observations, xi, 534.
- Turner, J. E., obit., xiv, 650.
- Turner, Joseph M. W., xi, 344; sale of a picture by, x, 366.
- Turner, W. G., statue by, x, 367.
- Turney, Jacob, obit., xvi, 659.
- Turpentine manufacture, iv, 428.
- Turpin, Eugène, x, 153; x, 346.
- Turtle Mountain Indians, xx, 557.
- Tuson, R. V., sketch, xiii, 669.
- Tuthill, Joseph H., obit., ii, 589.
- Tuttle, Herbert, obit., xix, 603.
- Tuttle, J. M., obit., xvii, 579.
- Tuttle's Comet, x, 51.
- Tweed, William M., sketch, iii, 798; his trial, ix, 627.
- Tweedy, John, obit., xvi, 659.
- Twisten, A. D. C., sketch, i, 776.
- Twiggie, James W., obit., iii, 646.
- Twin screw, xiii, 308.
- Twiss, Sir Travers, x, 191.
- Two Harbors, xiii, 173.
- Tycho, in the moon, xi, 586.
- Tycoon, the last, ix, 419.
- Tyers, J. R., invention by, ix, 736.
- Tyler, Dr. John E., obit., iii, 647.
- Tyler, Gen. John S., obit., i, 625.
- Tyler, Josiah, obit., xx, 598.
- Tyler, Julia G., sketch, xiv, 650.
- Tyler, Morris, obit., i, 625.
- Tyler, Samuel, sketch, iii, 799.
- Tyler, Tex., xvi, 173.
- Tyndall, John, on the germ theory, iii, 387; experiments by, vi, 787; ix, 304; sketch, etc., xviii, 727.
- Tyng, Stephen H., obit., x, 654.
- Type-writers, xv, 807.
- Tyre, researches at, ix, 28.
- Tyrol, the, autonomy refused to, ii, 58; first Protestant church in, iv, 67; intolerance in, v, 45.
- Tyrwhitt, R. St. J., obit., xx, 621.
- Tyson, explorations, iii, 353.
- Uchatius, Baron, gun, i, 57; experiments, ii, 500; obit., vi, 696.
- Uffelmann, observations, vi, 749.
- Uffington, pavement, ix, 22.
- Uganda, xvi, 264; xvii, 241; xviii, 271; xx, 239.
- Uhde, Frederick, x, 362; xii, 276.
- Uhlich, Joseph A., obit., xi, 728.
- Uhrich, Jean J. A., obit., xii, 638.
- Uhthoff, experiments, x, 691.
- Ujfalvy, M., researches, ii, 327.
- Ulbach, Louis, sketch, xiv, 672.
- Ule, Otto E. V., sketch, i, 777.
- Ulea Island, x, 139.
- Uled-Bonasog, rebellion of, i, 21.
- Uled-Sidi-Sheik, tribe of, i, 20.
- Ullman, Daniel, obit., xvii, 579.
- Ulrich, Charles F., x, 361; xi, 346.
- Ulrich, Hermann, obit., ix, 623.
- Ulundi, battle of, iv, 126.
- Ulysses, palace of, ix, 23.
- Umbellulic acid, vii, 87.
- Umnyamana, ix, 114, 115.
- Umquikala, Chief, x, 136.
- Uncle Tom, obit., viii, 596.
- Underwood, A. B., obit., xiii, 655.
- Underwood, F. H., obit., xix, 604.
- Underwood, J. R., obit., i, 625.
- Underwood, Judge, x, 431.
- Underwood, J. W. H., obit., xiii, 656.
- Unification of time, xx, 61.
- Union of Churches, in Scotland, xviii, 196.
- Unitarians, statistics, etc., in vols. i, ii, iii, v, vii, ix, xii, xiii, xiv, xvi, xviii, xix, xx; schools and societies, i, 777; national conference, i, 777; iii, 799; v, 691; ix, 765; German Protestant Union, i, 777; Hungarian synod, 778; ix, 765; xii, 775; British Association, ii, 746; bureau of supply, iii, 799; associations, 800; nonsubscribing Presbyterians, 800; benevolent societies, ix, 765; in Great Britain, 765; xii, 775.
- United Brethren Church, statistics, etc., in vols. i, ii, iii, v, vii, x, xi, xix, xx; increase, i, 778; conference, ii, 746; x, 755; missions, iii, 801; convention, 801; collections, v, 691; xi, 822; bishops, v, 691; seminaries, 692; constitutional changes, xi, 823; xviii, 731.
- United Evangelical Church, xix, 748.
- United States, article in every volume; proceedings of Congress under the title Congress in every volume; army operations under the title Army of the United States in first seven volumes; census and map, see below, United States Census; finances, see Finances of the United States, and Financial Review; presidential nominations, see vols. i, v, ix, xiii, xvii; settlement of the election question, i, 793; civil-service reform, ii, 748; silver bill, 750; fishery commission, 752; granger cases, 753; Bread-Winners' League, 751; question of fraud in the election, iii, 802; investigating committee, 802; origin of the present relations with China, iii, 810; the war-levy decided not to hold against the States, iv, 835; Mormon emigration, 837; decline of the carrying trade, 837, 838; comparison of census returns, v, 692; Chinese treaty on immigration, 704; star-route frauds, vi, 848; trials, viii, 777; Sergeant Mason's offense, vi, 848; vii, 806, 807; trial and execution of the assassin of the President, 809; Capt. Howgate's arrest and escape, 810; census, vii, 814-822; Indians captured by Gen. Crook, viii, 777, 778; pensions, 780; the treasury, reduction of taxation, 789; new bureaus and commissions, ix, 766; treaties, 767; the life-saving service, ix, 777; prime meridian conference, 777; Washington monument, 777; the navy, x, 760; trouble with Indians, 764; coast defenses, 764; anti-polygamy act, 764; the fisheries, x, 764; Alaska, x, 765; xi, 826; xii, 779; exhibitions, xi, 346; Mexico and the Cutting case, 825; centennial of the constitution, xii, 780; Indians, xiv, 601,



- and xv, 821; Coast Survey, xvi, 831; reciprocity treaties, 832; seal question, 834; manufactures, xix, 753.
- United States, census of, vii, 815; xv, 821; maps showing distribution of population, vi, 850.
- United States Daughters, xix, 642.
- United States Finances, a separate article in every volume after the seventh.
- United Workmen, xii, 784.
- Universal suffrage in Belgium, xviii, 76.
- Universalists, i, ii, iii, v, vii, viii, ix, x, xi, xii, xiii, xiv, xvi; xix, 759; xx, 786; societies and institutions, i, 793; amendment to the constitution, iii, 813; women's centenary association, iii, 813; viii, 811; ix, 787; x, 771; xi, 832; xii, 786; missions, vii, 822; xii, 786; Winchester profession of faith, vii, 822; historical society viii, 811; ix, 787; x, 771; xii, 786.
- University federation, x, 675.
- University of Copenhagen, iv, 813.
- Unnever, J. G., obit., xviii, 573.
- Unruh, Herr von, obit., xi, 728.
- Upehurch, John J., obit., xii, 618.
- Upham, F. W., obit., xx, 598.
- Upham, James, obit., xviii, 573.
- Upholstery, ix, 787.
- Upjohn, Richard, obit., iii, 647.
- Upingtonia, xi, 134.
- Uppington, Mr., x, 86, 87, 88.
- Upright, Elizabeth, case of, iv, 573.
- Upson, A. J., sketch, xvii, 769.
- Upton, Winslow, xii, 493.
- Uranus, viii, 24; xiv, 46.
- Urdaneta, x, 776.
- Urea, formation of, viii, 637.
- Urethane, x, 301.
- Urgel, Count of, ix, 345.
- Urmston, Capt., killed, xiii, 436.
- Urner, Nathan D., obit., xviii, 573.
- Uruguay, i, 794; vi, 857; troubles in, v, 16; viii, 811; ix, 789; x, 771; xii, 786; xiii, 829; xiv, 815; xv, 841; xvi, 851; xvii, 770; xviii, 743; xix, 759.
- Usher, James M., obit., xvi, 659.
- Usher, J. P., obit., xiv, 651.
- Usibepu, defeat of Cetewayo by, viii, 91; ix, 114, 115; x, 136.
- Uslar, Baron, i, 323.
- Usury, West Virginia, bill, iv, 845; Georgia law, vi, 334; effect of Kiernan law, vii, 117.
- Usutus, the, ix, 114.
- Utah, in every volume except i, iv, v, vii; view in, ii, 756; map of, xx; school-law, ii, 755; polygamy, 755; iii, 813, 814; vi, 859, 860; viii, 812; ix, 791, 792; x, 773; xi, 833; xii, 789; silk-culture, iii, 756; population, vi, 859; missionaries of Mormonism, 859; the hierarchy, the dominant power, 859; reorganized church opposed to polygamy, 860; the Edmunds law, viii, 812; its operation, ix, 791; x, 773; xi, 883; Edmunds-Tucker act, xii, 789; education, x, 773; salt, x, 773; xi, 833; constitutional convention, xii, 788; prosecutions for bigamy, 789; population, xv, 841; classification of population, xvii, 771; mineral products of, 772; Statehood, 773; enabling act, xix, 761; admitted to the Union, xx, 736.
- Utes, attack upon the, xii, 143; the, xiii, 180; xviii, 177; xix, 149, 761.
- Utica, N. Y., growth of, xi, 188.
- Uvura, ix, 347.
- Uzbek, x, 2, 8.
- Uzes, J. M. G., obit., xviii, 588.
- Vaccination with disease, vi, 347.
- Vagrants, sale of, xviii, 499.
- Vail, Aaron S., obit., vi, 689.
- Vail, Thomas H., sketch, xiv, 651.
- Vakkan, province of, x, 2; its sub-mission to Russia, xi, 5.
- Valdau, G., xi, 373.
- Valence, theory of, x, 149.
- Valerii, palace of the, ix, 26.
- Vallejo, M. G., obit., xv, 669.
- Vallès, Jules, obit., x, 670.
- Valoueff, Count, obit., xv, 691.
- Valuation in States, vii, 409.
- Vamberg, Arminius, ii, 5; iii, 3.
- Vanadium compounds, new, x, 154.
- Van Aernam, Henry, obit., xix, 604.
- Van Anden, W., obit., xvii, 579.
- Vanata, Aloysius, obit., i, 625.
- Vanatta, Jacob, obit., iv, 697.
- Van Beneden, P. J., obit., xix, 623.
- Van Bokkelen, Mr., x, 468.
- Van Brunt, Henry, x, 361.
- Van Buren, D. T., obit., xv, 669.
- Van Buren, W. H., obit., viii, 596.
- Van Camelbeke, Bishop, x, 31.
- Vance, Albinus, v, 552.
- Vance, Z. B., obit. and port., xix, 604.
- Van Cleve, H. P., obit., xvi, 659.
- Vancouver, xiii, 174.
- Van Depoele, C. J., xvii, 579.
- Vanderbilt, C., sketch, ii, 756.
- Vanderbilt, John, obit., ii, 589.
- Vanderbilt, William H., obit. x, 774; gift of, to New York city, ix, 595.
- Vanderbilt, Wm. H., the younger, obit., xvii, 580.
- Vanderbilt University, x, 775.
- Van der Heyden, Gen., honors to, vi, 625; ix, 558; x, 625.
- Van der Hoeven, P., x, 625.
- Vanderpool, A. J., obit., xii, 618.
- Vanderpool, James, obit., i, 625.
- Van der Weyde, P. H., obit., xx, 598; invention, ii, 498.
- Van Diebble, C., invention, x, 614.
- Van Dyck, C. van A., obit., xx, 598.
- Van Dyke, Anton, sale of pictures by, x, 360, 366; xii, 277.
- Van Dyke, Henry J., xvi, 659.
- Van Dyke, John, obit., iii, 647.
- Van Fleet, Abraham, obit., xix, 604.
- Van Gèle, explorations, xii, 303.
- Van Heurck, experiments, ix, 515.
- Vanilla, xiii, 548.
- Van Lennep, H. J., xiv, 651.
- Van Malderen, invention, iii, 275.
- Van Marcke, x, 367.
- Van Nest, A. R., obit., xvii, 580.
- Van Niekirk, P. J., ix, 112, 113; x, 86, 87.
- Van Nostrand, D., obit., xi, 705.
- Van Oeckelen, invention, x, 613.
- Van Raust, Lydia, obit., xi, 705.
- Van Rysselberghe, F., xviii, 588.
- Van Swieten, Gen., ix, 557; x, 625.
- Van Vorst, H. C., sketch, xiv, 651.
- Van Wickle, S., sketch, xiii, 656.
- Van Wyck, C. H., obit., xx, 598.
- Van Zandt, Charles C., ii, 675; iii, 728; iv, 770; obit., xix, 605.
- Vaphio, tomb at, xvi, 19.
- Vara, Giovanni B., obit., ix, 623.
- Varick, T. R., obit., xii, 618.
- Varna and Djumpha, viii, 383.
- Varroy, Henri A., sketch, iv, 386.
- Vassali Bey Luigi, obit., xii, 634.
- Vassalot, Count de, x, 135.
- Vassar, John G., sketch, xiii, 656.
- Vatican, the, mission from, to China, x, 170; conspiracy of the, xi, 454; illustration, i, 704; relations of, with governments; conflict with the, in Austria-Hungary, xx, 77. See Papacy.
- Vatican library, viii, 692.
- Vaucanson, invention by, x, 613.
- Vauban, Victor C., xii, 106.
- Vaughn, O. A. J., obit., i, 625.
- Vaux, Calvert, obit., xx, 598.
- Vaux, Richard, obit., xx, 599.
- Vaux, W. S. W., obit., x, 671.
- Veatch, J. C., obit., xx, 599.
- Vedder, A. M., obit., iii, 647.
- Vedder, Elihu, ix, 249.
- Vedder, N., obit., xvii, 580.
- Vierzoo, strike at, xi, 359.
- Vega, Count de la, x, 141.
- Vega, the, voyage of, iv, 411; entrance into Behring Strait, 415; in Yokohama, 416; x, 398.
- Vegetable analysis, vi, 95.
- Vegetable chemistry, vii, 92.
- Vegetable physiology, ix, 660; x, 695; xviii, 635.
- Veintemilla, Gen., made dictator in Ecuador, ii, 260; government of, iv, 328; v, 231; defeat and flight of, vii, 225; viii, 287.
- Veitch, obit., x, 671.
- Vela Vincenzo, obit., xvi, 687.
- Venables, Edmund, obit., xx, 621.
- Venezuela, i, 795; vi, 860; viii, 812; ix, 793; x, 775; xiii, 832; xiv, 818; xv, 843; xvi, 855; xvii, 774; xviii, 748; xx, 740; civil war in, xvii, 777; silk, ix, 794; rebellion, x, 776; xii, 789; xix, 763; tariff changes, 790; national museum, 790; Guiana boundary dispute, xx, 741; map of, xx, 740; resolution of U. S. Congress, xx, 193.
- Venice, aqueduct at, x, 332.
- Venosta, v, 408.
- Ventilation, v, 361.
- Venus, diameter, ii, 43; transit, ibid.; rotation of, xx, 52. See Astronomical Progress.
- Venus, rotation of, xvii, 39.
- Venusti, sale of a, x, 366.
- Vera Cruz, illustration, ii, 514.
- Veraschagin, picture by, x, 712.
- Verbeck, Mr., x, 401.
- Verboeckhoven, E., obit., vi, 697.
- Verdi, ovation to, xii, 522.
- Vereschagin, Basil, xii, 277.
- Verme, Count L. dal, xi, 380.
- Vermilye, T. E., obit., xviii, 573.
- Vermilye, W. R., obit., i, 625.
- Vermont, in each volume; revision of statutes, iii, 817; v, 708, 709; bequests, iii, 818; vii, 827; relative profits of farming in, iv, 840, 841; sorghum sugar, 841; railroad monopolies, 841; a famous law-case, iv, 842; election case, 842; act to equalize taxation, vi, 863; duties of State school superintendent, 864; revenue bill, vii, 823; schools, 826,

- 827; xii, 791; forestry, ix, 796; maple-sugar, x, 777, and xvi, 857; population, xv, 844; immigration, 846; Australian ballot law, xvi, 857, and xvii, 785; temperance, 858; xx, 752; boundary, 753.
- Véron, Eugène, sketch, xiv, 672.
- Véron, Madame, xii, 294.
- Verona, bridge at, x, 330.
- Vessels, iron-turreted, xii, 229.
- Vestal virgins, house of, ix, 26.
- Veterinary table, xvi, 706.
- Vetromille, Eugène, obit., vi, 689.
- Vetulovia, site of, xi, 35.
- Veulliot, Louis, sketch, viii, 815.
- Veyressat, J. J., x, 363.
- Viaduct du Loup, xvii, 249.
- Viardot, Louis, obit., viii, 605.
- Vibbard, Chauncey, obit., xvi, 659.
- Vibert, G. J., xi, 347.
- Vibriones, ix, 498.
- Vickovich, x, 1, 2.
- Vicksburg, Miss., xvii, 120.
- Victor Emanuel II, iii, 819.
- Victoria, Apache chief, v, 27.
- Victoria, city, xiii, 174.
- Victoria, Queen, power of, to cede Indian territory, iii, 438; attempt on the life of, vii, 369; portrait, iii, 819; jubilee, xii, 791.
- Victoria, loss of the, xviii, 359.
- Victoria Nyanza, mission at, iii, 362.
- Victoria, province of, xx, 67. See under Australia.
- Victoria Station, explosion at, ix, 377; x, 454.
- Vieille, x, 151, 154.
- Viel-Castel, M. de, obit., xii, 638.
- Vienna, fire in, iv, 51; views in, opera-house and cathedral, ii, 58, 59; riots in, xiv, 61.
- Vieuxtemps, Henry, obit., vi, 697.
- Vigilant, the, lost whaler, vi, 323.
- Vigono, Col., xiii, 3.
- Vigorite, x, 345.
- Viking ship, the, xviii, 529.
- Vilain, Vicomte, obit., iii, 662.
- Vilas, W. F., sketch, x, 757, 762.
- Villages, ancient, xiv, 25.
- Villers-Stuart, H. W., obit., xx, 621.
- Vincennes, Ind., xvii, 120.
- Vincent, C., discovery by, iv, 75.
- Vincent, Edward, x, 311.
- Vincent, M. A. F., obit., xii, 618.
- Vines, S., experiments by, iv, 36.
- Vinton, E., obit., xv, 669.
- Virchow, Rudolph, theory of, vi, 550; xii, 669.
- Virgin Mary, insult to the, x, 713.
- Virginia, in every volume; constitutional amendments, i, 800; stationing of troops at Petersburg, i, 800, 801; sympathy with South Carolina, 802; gifts to the University, 802; the Moffat register law, ii, 758; the State debt, iii, 820, 821; iv, 842, 843, 844; v, 709; decision under the civil-rights act, iii, 825; the Readjustment party, iv, 843, 844; colored juror question, 845; the Governor's veto of the repudiation bill, v, 709; Riddleberger bill, vii, 828, 829; election riot, viii, 816; acts passed over the veto, ix, 797; bond cases, x, 268; the oyster interest, x, 777; population, xv, 847, and xvi, 859; county debts, xv, 848; debt settlement, xvi, 860; boundary, xvii, 789, and xviii, 711; xx, 753.
- Virginia City, growth of, xii, 133.
- Vischer, F. T., obit., xii, 639.
- Vishnegradsky, I. A., obit., xx, 621.
- Vitale, Count Luigi, obit., i, 644.
- Vital force, doctrine of, ix, 808.
- Viticulture, in United States, vi, 353; viii, 79; Ecuador, 288; Mexico, 537; xiii, 37, 105, 830.
- Vitu, Auguste, obit., xvi, 687.
- Vitu, Sultan of, x, 796.
- Vivarez, Henri, x, 578.
- Vivian, Sir H., obit., xix, 623.
- Vivisection, regulations, i, 360; to prohibit, iv, 457; licenses, 457.
- Vizetelly, H. R., obit., xviii, 588.
- Vizier, the grand, office of, abolished, iv, 833.
- Voconius, Pollio, palace of, ix, 26.
- Vodges, William, obit., xi, 705.
- Voegtlin, W., obit., xvii, 580.
- Vogdes, Israel, sketch, xiv, 651.
- Vogel, H. C., observations by, vii, 37; star catalogue by, viii, 28.
- Vogel, H. M., ix, 122.
- Vogt, Karl, discovery by, vi, 303; obit., xx, 621.
- Voice, physiology of the, viii, 636.
- Voigts-Rhetz, Gen., ii, 613.
- Vokes, Rosina, obit., xix, 623.
- Volapük, xii, 794.
- Volcanic eruptions, of Cotopaxi, ii, 268; ix, 28; in Patagonia, iii, 365; of Etna, iv, 527; in Ecuador, vi, 331; of Krakatoa and others, viii, 526; ix, 53; x, 400; in Hawaiian Islands, ix, 389; atmospheric effects of, viii, 526; of Ometepe, viii, 582; of Momotombo, xi, 66, 653. See Earthquakes, etc., viii, 284.
- Volcanoes, ix, 389, 541; xiv, 559; colored chart, xi, 296; Irazu, x, 398; Jorullo, illustration, ii, 511; Asama-jama, xii, 311; Krakatoa, x, 400; a new, 400; in Alaska, xx, 10.
- Volekmar, Wilhelm, obit., xii, 639.
- Volk, L. W., obit., xx, 599.
- Volkhart, Wilhelm, obit., i, 644.
- Volkman, A. W., obit., ii, 613.
- Vollmer, A. J., obit., i, 644.
- Volta, A., researches, vii, 265.
- Volta, sources of the, xii, 305.
- Von Lenk, x, 343.
- Vories, Henry M., obit., i, 626.
- Vose, Richard, obit., xviii, 574.
- Voting machines, xx, 637.
- Vought, Walter, obit., xviii, 574.
- Voysey, Rev. C., ix, 759.
- Vriendt, Albrecht de, xi, 343.
- Vuillefroy, Félix, x, 363.
- Vulcacius, R., house, ix, 26.
- Vulkovitch murder, the, xvii, 71.
- Vulpian, E. F. A., obit., xii, 639.
- Wabash, improvement, xvii, 354.
- Wachtel, Theodor, obit., xvii, 588.
- Wackernagel, P., obit., ii, 613.
- Waco, Texas, xvi, 173.
- Wadai, vi, 327.
- Waddell, J. N., obit., xx, 599.
- Waddington, Joshua, obit., i, 644.
- Waddington, W. H., sketch, ii, 320; Cabinet, iv, 386; ix, 290.
- Wade, B. F., sketch, iii, 825.
- Wade, Sir T. F., obit., xx, 622.
- Wadhams E. P., obit., xvi, 660.
- Wadleigh, B., obit., xvi, 660.
- Wadleigh, L. F., obit., xiii, 656.
- Wages in Japan, xiii, 453.
- Wagner, A., process for water-examination, vi, 94.
- Wagner, M. F., obit., xii, 639.
- Wagner, Richard, music of, i, 571; sketch and port., viii, 816.
- Wagner, R. J. von, obit., v, 604.
- Wagon-road lands, in Oregon, xviii, 597; in Idaho, 395.
- Wahala, Bishop, obit., ii, 613.
- Wahl, W. H., x, 159.
- Wailles, J. W., xi, 536.
- Wainwright, W. P., obit., xx, 600.
- Waitangi, treaty of, x, 66, 67.
- Waite, M. R., sketch, vii, 831; port., vii, 126; sketch xiii, 836.
- Waitapu Mount, ix, 540.
- Waiz, George, obit., xi, 728.
- Wakeman, A., sketch, xiv, 651.
- Wakkan. See Vakkan.
- Wald Denkai, ii, 2.
- Walcott, Charles F., obit., xii, 619.
- Walcott, C. D., x, 404.
- Wald, Michael, revolt of, i, 4, 5.
- Waldeck-Pyrmont, xviii, 588.
- Waldeck-Rousseau, viii, 357, 367.
- Waldegrave, Countess, iv, 701.
- Waldensians, ii, 762; vi, 771; xviii, 534.
- Waldo, L., observations by, v, 86.
- Waldstein, M., xi, 32.
- Walenn, inventions, ii, 533.
- Wales. See GREAT BRITAIN.
- Wales, Prince, in India, i, 44, 401.
- Walker, A., obit., xviii, 574.
- Walker, C. L., obit., xx, 600.
- Walker, Sir B. W., sketch, i, 802.
- Walker, David S., obit., xvi, 660.
- Walker, George, sketch, xiii, 656.
- Walker, James, sketch, xiv, 651.
- Walker, James P., obit., xv, 669.
- Walker, Jonathan, obit., iii, 647.
- Walker, John G., obit., xviii, 574.
- Walker, J. T., x, 47.
- Wall, a mysterious, xix, 486.
- Wallace, A. R., xii, 670.
- Wallace, G. D., obit., xv, 669.
- Wallace, J., invention by, i, 91.
- Wallace, Mackenzie, ix, 279.
- Wallace, Sir R., obit., xv, 691.
- Wallace, W., inventions by, iii, 272; ix, 306.
- Wallace, Wm. Ross, obit., vi, 689.
- Wallack, J. L., obit., xiii, 656.
- Walla Walla, xiv, 162.
- Wall-decoration, ix, 250.
- Waller, A. D., experiments, xii, 674.
- Waller case, the, xx, 434.
- Waller, Thomas M., vii, 173.
- Walling, G. W., obit., xvi, 660.
- Wallis, Sir Provo, obit., xvi, 604.
- Wallis, Robert, obit., iii, 662.
- Wallner, Franz, obit., i, 644.
- Wallo Galla, ii, 2.
- Walloon Churches, vii, 709.
- Wall-paper, viii, 615; ix, 247.
- Walmsley, W. H., ix, 521.
- Walpole, Frederick, obit., i, 644.
- Walpole, Sir Robert, obit., i, 644.
- Walrand, M., ix, 473.
- Walsh, Archbishop, x, 455.
- Walsh, J. H., sketch, xiii, 669.
- Walsh, R. F., obit., xx, 600.
- Walsh, W. H., obit., xvii, 604.
- Walter, John, obit., xix, 623.
- Walter, M., work of, x, 332.
- Walter, Thomas U., obit., xii, 619.
- Walters, W. T., obit., xix, 605.
- Waltham, Mass., xvi, 173.



- Walther, C. F. W., obit., xii, 619.  
 Walton, E. P., obit., xv, 669.  
 Walworth trial, the, ix, 627.  
 Wanamaker, J., sketch, xiv, 803.  
 War claims in Mississippi, xix, 492.  
 War College, xiv, 814.  
 War, declaration of, in China, xix, 128.  
 War of 1812, General Society of the, xix, 640; Society of the, xix, 643.  
 Ward, Capt., invention, iii, 766.  
 Ward, Durbin, obit., xi, 705.  
 Ward, Edward M., obit., iv, 701.  
 Ward, George Cabot, obit., xii, 619.  
 Ward, John Q. A., x, 361, 367.  
 Ward, L. F., quotation from, vi, 241; x, 404.  
 Ward, W. Hayes, ix, 19; xi, 25.  
 Wardell, Daniel, obit., iii, 647.  
 Ware, Jairus, obit., ii, 590.  
 Ware, J. F. W., obit., vi, 689.  
 Waring, E. J., obit., xvi, 687.  
 Waring, G. E., ix, 723, 724, 728.  
 Warington, experiments, vi, 98.  
 War-levy, on Southern States, iv, 429, 835.  
 Warner, Hiram, obit., vi, 690.  
 Warner, H. H., xi, 54, 57.  
 Warner observatory, v, 36; vii, 41.  
 Warner, Olin L., x, 361; xi, 347.  
 Warner, Susan, obit., x, 654.  
 Warnots, Henry, obit., xviii, 588.  
 War Records, iii, 32.  
 Warren, Sir Charles, ix, 114; x, 86 *et seq.*; resigns, xiii, 391.  
 Warren, Edward J., obit., i, 626.  
 Warren, Fitz-Henry, obit., iii, 647.  
 Warren, Lieut. G. R., x, 401.  
 Warren, H., xii, 483.  
 Warren, Henry J., obit., i, 626.  
 Warren, J. B. L., obit., xx, 622.  
 Warren, John C., ix, 641.  
 Warren, J. W., xii, 672.  
 Warren, Joseph, sketch, i, 802.  
 Warren, O. G., obit., xvii, 580.  
 Warren, Samuel, obit., ii, 613.  
 Warren, Susanna, obit., xi, 706.  
 Warren, William, sketch, xiii, 657.  
 Warrington, experiments, x, 157.  
 Wars. See the articles on the various countries.  
 War-vessels, new British, x, 444.  
 Warsberg, A., sketch, xiv, 672.  
 Washburn, C. A., obit., xiv, 651.  
 Washburn, Emory, sketch, ii, 762.  
 Washburn, L., the elder, i, 626.  
 Washburn, L., the younger, obit., viii, 597.  
 Washburn Observatory, vii, 41.  
 Washburn, W. B., obit., xii, 619.  
 Washburne, Elihu B., sketch and portrait, xii, 798.  
 Washington centennial, xiv, 604.  
 Washington, city of, its recent growth, xii, 133; views in, i, 786; ii, 751, 753; water, xix, 780.  
 Washington aqueduct, ix, 316.  
 Washington and Lee University, bill to aid, xx, 197.  
 Washington (State), xiv, 821; xv, 850; xvi, 861; xvii, 790; xviii, 752; xix, 769; harbor improvements, 770; exploration of Mt. Tacoma, 772; xx, 756; new capitol, 757.  
 Washington (Territory, afterward State), in every volume except iii-vii; wealth and population, ii, 763; x, 779; tide-lands, ii, 763; fisheries, 763; coal and lumber, ii, 763; ix, 800; x, 780; xi, 837; Indians, viii, 819; ix, 801; x, 780; xii, 800; statehood, viii, 819; Northern Pacific Railroad, 819; Chinese in, x, 780; coal, 780; anti-Chinese disturbances, xi, 836; resources and development, 837; iron in, 837; hop-culture, 837; xii, 800; census, xii, 799; mining and lumber industries, 800; exports, 800; xiii, 837; population, xv, 850; tide lands, xvi, 862; State lands, xvii, 790.  
 Washington, treaty of, xii, 282.  
 Wasserfuhr, invention, x, 345.  
 Wasson, David A., obit., xii, 620.  
 Wassum, observations, xi, 534.  
 Watch-springs, xii, 480.  
 Water, analysis of, iii, 91; iv, 136, 628; vii, 9; viii, 111, 118; loss of oxygen in electrolysis of, iii, 93; purification of, v, 94, 367; chemical analysis insufficient, iv, 135; purity of, ix, 125; composition of ocean, 126; to heat rapidly, xi, 742; synthesis of, xiii, 145.  
 Waterbury, Conn., xvi, 174.  
 Waterbury, N. J., obit., xix, 605.  
 Water-gas processes, viii, 373.  
 Water-gate and dam, xiv, 463.  
 Waterhouse, J. W., pictures by, x, 365; xi, 345; xii, 276.  
 Waterman, R. W., obit., xvi, 660.  
 Water-motor, the, vi, 871; xi, 742; illustration, 742.  
 Water-pipes, flexible, xvii, 255.  
 Waters, Horace, obit., xviii, 574.  
 Water-shed of South Africa, iv, 405.  
 Water-spaniel, the Irish, ix, 257.  
 Waterston, R. C., obit., xviii, 574.  
 Water supply, xix, 772.  
 Watertown, Dak., xiv, 162.  
 Watertown, N. Y., recent growth of, xi, 188; xv, 149.  
 Watertown, Wis., xix, 144.  
 Waterways, in Delaware, xviii, 255; convention, xix, 443.  
 Waterworks, xiv, 290.  
 Watkins, A. B., obit., xvii, 580.  
 Watkins, Alice, obit., xii, 620.  
 Watkins, Gen. N. W., obit., i, 626.  
 Watkins, Henry, obit., xix, 605.  
 Watkins, W. B., obit., xv, 617.  
 Watrin, murder of, xi, 359.  
 Watson, J. C., discoveries by, i, 46; ii, 44; iii, 33; v, 34; obit., v, 597; prize to, ix, 55.  
 Watson, Jean L., obit., x, 671.  
 Watson, L. F., obit., xv, 670.  
 Watson, S., obit., xvii, 580.  
 Watson, S. W., obit., xv, 670.  
 Watterson, H. M., obit., xvi, 660.  
 Watts, George Frederick, pictures by, x, 361, 365; xi, 345; xii, 277.  
 Watts, Frederick, sketch, xiv, 652.  
 Watts, Henry, obit., ix, 623.  
 Watts, Sir James, obit., iii, 662.  
 Watts, James W., obit., xx, 600.  
 Watts, T. H., obit., xvii, 581.  
 Watts, W. L., explorations in Iceland, ii, 324.  
 Waud, Alfred R., obit., xvi, 661.  
 Waugh, William B., obit., ii, 590.  
 Wautauga tree, xx, 715.  
 Wauters, A. J., x, 393.  
 Wave motors, xiv, 296.  
 Wave-power, xi, 743.  
 Waycross war, xix, 312.  
 Wayman, A. W., obit., xx, 600.  
 Waziristan, xx, 8.  
 Weather Bureau. See Signal Service, iv, 797.  
 Weather indicator, iv, 804.  
 Weather, the instrument for forecasting, iv, 808; affected by forecasts, viii, 350; moon influence, xii, 487; popular signs of, 487.  
 Weaver, A. J., obit., xii, 620.  
 Weaver, Gen. J. B., v, 699.  
 Webb, Eckford, obit., xviii, 575.  
 Webb, F. I. C., obit., xx, 600.  
 Webb, George J., obit., xii, 620.  
 Webb, James W., obit., ix, 613.  
 Webb, Matthew, obit., viii, 606.  
 Webb, Thomas W., obit., x, 671.  
 Weber, George, sketch, xiii, 669.  
 Weber, Karl P. von, obit., vi, 697.  
 Weber, Wilhelm E., obit., xvi, 687.  
 Webster, A., obit., xv, 670.  
 Webster, Albert F., obit., ii, 590.  
 Webster, Augusta D., obit., xix, 624.  
 Webster, C. L. R., obit., vii, 644.  
 Webster, Daniel, centennial of, vii, 520; statue of, xi, 347, 619.  
 Webster, E. D., obit., xviii, 574.  
 Webster, experiments by, viii, 524.  
 Webster, J., invention by, vii, 531.  
 Webster, John A., obit., ii, 590.  
 Webster, Joseph D., obit., i, 626.  
 Webster, Thomas, obit., xi, 729.  
 Wedenskii, experiments by, x, 690.  
 Weed, Ella, obit., xix, 605.  
 Weed, Harriet A., obit., xviii, 574.  
 Weed, Thurlow, sketch, vii, 833.  
 Weeds, germination of, ix, 129.  
 Weekes, Henry, obit., ii, 613.  
 Wehl, F., obit., xv, 692.  
 Wehrenpfennig, E., experiments by, x, 575.  
 Weidenheim, Baron Korb, iv, 60.  
 Wei-Hai-Wei, siege of, xx, 133.  
 Weilenmann, invention, iii, 545.  
 Weiler, Lazare, xi, 538.  
 Weimer, Dr., v, 665.  
 Weinstein, observations, xi, 545.  
 Weir, John F., x, 361.  
 Weir, R. W., obit., xiv, 652.  
 Weir, Col. Thomas B., obit., i, 626.  
 Weiske, Julius, obit., ii, 613.  
 Weiss, Jean J., obit., xvi, 687.  
 Weiss, John A., sketch, xiii, 657.  
 Welch, A. S., obit., xiv, 652.  
 Welch, Philip H., obit., xiv, 652.  
 Welch, R. B., obit., xv, 670.  
 Weld, Mason C., obit., xii, 620.  
 Weld, T. D., obit., xx, 600.  
 Weldon, Walter, obit., x, 671.  
 Welle River, conjectures, iii, 363; exploration, v, 292; viii, 386.  
 Welles, E. R., sketch, xiii, 658.  
 Welles, Gideon, sketch, iii, 825.  
 Welling, J. C., obit., xix, 605.  
 Wellington, A. M., obit., xx, 600.  
 Wellington, Duke of, obit., ix, 624.  
 Wells balance, the, iii, 775.  
 Wells, C. H., obit., xiii, 657.  
 Wells, C. S., discovery by, vii, 36.  
 Wells, Elijah, obit., ii, 590.  
 Wells, Henry, obit., iii, 647.  
 Wells, J. R., invention by, iii, 774.  
 Wells, Mary, obit., iii, 647.  
 Wells, W., obit., xvii, 581.  
 Wellstood, J. G., obit., xviii, 574.  
 Welsbach, Auer von, xii, 101, 652.  
 Welsh Methodist Church, xv, 748.  
 Welsh, John, sketch, iii, 826; obit., xi, 706.  
 Welte, M., invention by, x, 612.  
 Wenham, Mr., ix, 508, 509, 510, 512.

- Wennecke, xi, 50.  
 Wentworth, J., obit., xiii, 658.  
 Werden, Reed, obit., xi, 706.  
 Werder, A. C. L., obit., xii, 640.  
 Werdermann, invention, iii, 272.  
 Werner, Gustav, obit., xii, 640.  
 Werthheimer, J. R., obit., xii, 640.  
 Wesleyans. See Methodists.  
 Wessells, H. W., obit., xiv, 652.  
 West, Absalom M., obit., xix, 603.  
 West Africa, French, xvii, 291.  
 West Africa, xviii, 329; xx, 757.  
 West, Stephen W., obit., i, 626.  
 Westbrook, B. T., obit., xx, 601.  
 Westbrook, T. R., vii, 602.  
 Westcott, T., obit., xiii, 658.  
 Western Australia, xiv, 56; xv, 48; xvii, 46; xviii, 58; xix, 60; xx, 69; gold mining in, xx, 69.  
 Western, Lucille, obit., ii, 590.  
 West Indies, the, in vols. viii, ix, x, and xii; xiii, 839; xiv, 824; xvi, 863; xvii, 792; xviii, 755; xix, 780.  
 Westminster Abbey, ii, 363.  
 Westminster Hall, explosion at, x, 454.  
 Westmoreland, inscription, ix, 22.  
 West, Mary A., obit., xvii, 581.  
 Weston, E., invention by, viii, 303; ix, 305; x, 159.  
 Weston, J. A., obit., xx, 601.  
 West Orange, N. J., xviii, 168.  
 West Point hazing case, v, 30.  
 West, T. S., sketch, xiv, 682.  
 West Virginia, in every volume; impeachment of public officers, i, 802; disagreement with Virginia as to the debt prior to 1861, iii, 827; improvement in the Kanawha, 827; opposition to normal schools, iv, 845, 846; vi, 872, 873; proposed constitutional amendments, iv, 846; v, 714; disorders in Wetzel County, 846, 847; estates of married women, 847; ferry privileges at Harper's Ferry, 847; ease of Strander, 847; University, vi, 873; land-titles, vii, 835; the land league, 835; election irregularities, ix, 806; the capitol building, 806; settlement of boundary, xi, 839; population, xv, 853; museum, xix, 782; oil, 782; timber, 783; xx, 762.  
 Westwood, J. O., obit., xviii, 588.  
 Wetherspoon, W. W., xiii, 659.  
 Wetmore, Prosper M., obit., i, 626.  
 Weyher, C. L., telephone, iii, 588.  
 Weyprecht, K., plan for polar stations, vi, 325; vii, 335; viii, 382.  
 Whaleback steamers, xviii, 282.  
 Whaling in Alaska, xx, 14.  
 Whalley, George H., obit., iii, 602.  
 Whalley, William H., obit., i, 626.  
 Wharton, Francis, sketch, xiv, 653.  
 Wharton, Joseph, experiments by, vii, 532; viii, 522; x, 159.  
 Wheat-growers' Convention, xiv, 567.  
 Wheatleigh, Charles, obit., xx, 601.  
 Wheatley, William, obit., i, 626.  
 Wheaton, on international law, vii, 620.  
 Wheat-tax, in France, ix, 243.  
 Wheeler, Amos D., obit., i, 627.  
 Wheeler, Dora, ix, 247, 248.  
 Wheeler, George M., x, 402, 403.  
 Wheeler, N. W., sketch, xiv, 653.  
 Wheeler, Mrs. T. M., ix, 247, 248.  
 Wheeler, William A., sketch, i, 805; sketch and portrait, xii, 804.  
 Wheeling, W. Va., xvi, 175.  
 Wheildon, W. W., obit., xvii, 581.  
 Whetham, J. W. B., ix, 539.  
 Whichcote, George, obit., xvi, 688.  
 Whigs, policy of the, x, 433.  
 Whipping-post, bill to introduce, into Missouri, iv, 639.  
 Whipple, George, obit., i, 627.  
 Whipple, G. M., obit., xviii, 588.  
 Whisky, in Kentucky, xviii, 424.  
 Whisky-tax in England, x, 447.  
 Whittall, Henry, obit., xii, 620.  
 White Caps, xiii, 441, 670.  
 White, C. A., obit., xvii, 581.  
 White, Dr. C. A., x, 404.  
 White, Edwin, obit., ii, 590.  
 White, Mrs. E. G., ii, 4; iv, 5.  
 White, G., observations, viii, 526.  
 White, G. B., obit., xv, 670.  
 White, Hale W., xii, 671.  
 White, J., obit., xv, 670.  
 White, Jos., invention, xii, 94.  
 White, R. G., obit., x, 785.  
 White, Sir W. A., obit., xvi, 688.  
 White, Sir William, x, 752, 753.  
 White, W. T., obit., xviii, 575.  
 White Cross Society, the, xii, 805.  
 White Book, the, ix, 361.  
 White Mountains, ix, 538.  
 Whitefield, E., obit., xvii, 582.  
 Whitehead, W., obit., xviii, 575.  
 Whiteley, James, ix, 539, 540.  
 Whiteley, R. H., obit., xv, 670.  
 Whiteman, Margaret, obit., xix, 606.  
 Whites, a supposed tribe of, in Africa, iv, 406.  
 Whiteway, Sir William, x, 629.  
 Whiting, Daniel P., obit., xvii, 582.  
 Whiting, W. D., obit., xix, 606.  
 Whitley, Harry G., x, 392.  
 Whitman, Sarah H., obit., iii, 648.  
 Whitman, Walt, obit., xvii, 795.  
 Whitney, J. D., x, 402, 407; xi, 545.  
 Whitney, Miss, xi, 377.  
 Whitney, Mt., ix, 539.  
 Whitney, William C., sketch, x, 757; portrait, 760.  
 Whitney, W. D., obit. and port., xix, 606.  
 Whittaker, Cadet, case of, v, 30.  
 Whitthorne, W. C., obit., xvi, 661.  
 Whittier, John G., sketch, xvii, 800.  
 Whittingham, W. R., sketch, iv, 847.  
 Whittlesey, Charles, obit., xi, 706.  
 Whitworth, Joseph, obit., xii, 640.  
 Wholmuth, voyage of, viii, 383.  
 Whymper, Edward, explorations by, vi, 330; viii, 528; ix, 540.  
 Wickersham, J. P., obit., xvi, 661.  
 Wichita, growth of, xi, 189.  
 Wickes, Stephen, sketch, xiv, 653.  
 Wickham, J. D., obit., xvi, 661.  
 Wickliffe, R. C., obit., xx, 601.  
 Widdin, siege of, x, 728.  
 Widor, M., xii, 520.  
 Wieniawski, Henry, obit., v, 604.  
 Wiestling, G. B., obit., xvi, 661.  
 Wiggin, Heury, ix, 478.  
 Wigginton, P. D., obit., xv, 671.  
 Wight, O. W., sketch, xiii, 658.  
 Wilber, David, obit., xv, 671.  
 Wilcox, C. M., obit., xv, 671.  
 Wilcox, J. M., obit., xx, 601.  
 Wild, Augustus, obit., xvi, 661.  
 Wilde, invention by, iii, 276.  
 Wilde, Sir Alfred T., obit., iii, 662.  
 Wilde, Sir W. R. W., obit., i, 644.  
 Wilder, J. A. V., obit., xvii, 605.  
 Wilder, Marshall P., obit., xi, 707.  
 Wilder, Royal G., obit., xii, 621.  
 Wildermuth, Ottilie, obit., ii, 613.  
 Wildrich, A. C., obit., xix, 607.  
 Wiles, Irving R., xi, 346.  
 Wiley, Charles, obit., iii, 648.  
 Wiley, H. W., experiments by, vi, 351.  
 Wiley, John, obit., xvi, 661.  
 Wilhelm of Brunswick, ix, 624.  
 Wilhelm I, Emperor of Germany, sketch, xiii, 842.  
 Wilhelm II, Emperor of Germany, sketch and port., xiii, 845; xvi, 328.  
 Wilhelmshöhe, illustration, iii, 383.  
 Wilkes, Charles, sketch, ii, 766; expedition, x, 401.  
 Wilkes, John, expulsion of, from House of Commons, vii, 202.  
 Wilkesbarre, Pa., xi, 189.  
 Wilkeson, Samuel, sketch, xiv, 653.  
 Wilkie, F. B., obit., xvii, 582.  
 Wilkinson, M. S., obit., xix, 607.  
 Wille, Capt., explorations iii, 353.  
 Willem III, King, obit., xv, 692.  
 Willett, James M., obit., ii, 590.  
 Willett, W. M., obit., xx, 601.  
 William Barent, voyage, x, 398.  
 Williams, A., obit., i, 627.  
 Williams, Albert, x, 404.  
 Williams, A. S., obit., iii, 648.  
 Williams, A. S., observations by, viii, 21.  
 Williams, Barney, sketch, i, 805.  
 Williams, C. F., obit., xx, 602.  
 Williams, Geo. H., obit., xix, 607.  
 Williams, Henry S., x, 45.  
 Williams, Henry W., obit., xx, 602.  
 Williams, James D., sketches, i, 411; v, 715.  
 Williams, John S., obit., i, 627.  
 Williams, Montagu, obit., xvii, 605.  
 Williams, S. Wells, obit., ix, 613.  
 Williams, William, railroad director, obit., i, 627.  
 Williams, William, English bishop, obit., iii, 662.  
 Williams, W. M., theory, vi, 100; observations, viii, 526.  
 Williams, William R., obit., x, 654.  
 Williamson, A. W., address, vi, 91.  
 Williamson, B., obit., xvii, 582.  
 Williamson, W. C., obit., xx, 622.  
 Williamson, I. V., sketch, xiv, 653.  
 Williamsport, Pa., xv, 149.  
 Willis, Benjamin A., obit., xi, 707.  
 Willis, Gen., in Egypt, vii, 253.  
 Willkomm, E. A., obit., xi, 729.  
 Wills, act on, in Michigan, viii, 539.  
 Wills, T., experiments by, iv, 135.  
 Wills, William G., obit., xvi, 688.  
 Willson, D., nominated, xiii, 569.  
 Wilmarth, Seth, obit., xi, 707.  
 Wilmer, J. B. P., obit., iii, 648.  
 Wilmington, Del., recent growth of, xi, 189; Swedish church at, ii, 247; water, xix, 780.  
 Wilmington, N. C., recent growth of, xii, 135; in the war, x, 429.  
 Willoughby, Gen., xi, 518.  
 Wilson, A. B., obit., xiii, 658.  
 Wilson, Andrew, obit., ii, 590.  
 Wilson, Col., his address, xiii, 46.  
 Wilson, Sir Charles, ix, 304; x, 314, 315; xi, 27.  
 Wilson, Sir D., obit., xvii, 605.



- Wilson, Daniel, case of, xiii, 350.  
 Wilson, E. M., obit., xv, 671.  
 Wilson, Ephraim K., obit., xvi, 661.  
 Wilson, H. D., surveys, ii, 337.  
 Wilson, H. M., new process, ii, 50.  
 Wilson, Sir J. E., obit., ix, 625.  
 Wilson, J. F., obit., xx, 602.  
 Wilson, Gen. J. H., raid of, x, 431.  
 Wilson, John, obit., i, 627.  
 Wilson, M., obit., xvii, 582.  
 Wilson, observations by, vi, 39.  
 Wilson, Rivers, appointed Minister of Finance in Egypt, iii, 266; iv, 328; assailed, 329; recalled, 332.  
 Wilson scandal, the, xii, 294.  
 Wilson, T., bequests of, vii, 510.  
 Wilson, Thomas P., obit., ii, 590.  
 Wilson tariff bill, xix, 170.  
 Wilson, W. W., sketch and port., xx, 728.  
 Wiltse, Gilbert C., obit., xviii, 575.  
 Wiltz, L. A., death of, vi, 514.  
 Winans, Edwin, B., obit., xix, 608.  
 Winans, Ross, obit., ii, 590.  
 Winants, G. E., obit., xv, 671.  
 Winch, rope-maker's, xiii, 249.  
 Winchell, A., ix, 44; xvi, 662.  
 Winchester, battle of, x, 428.  
 Winchester, O. F., obit., v, 597.  
 Wind bracing, xx, 253.  
 Windlasses, ships', xvi, 712.  
 Windom, William, sketch, xiv, 802; obit., xvi, 662.  
 Window screens, xx, 637.  
 Winds, xiii, 493; xx, 478; in mountain regions, 494; xiii, 537; xiv, 549; xv, 537; xvii, 452.  
 Windthorst, Herr, ix, 356, 357, 361; x, 120, 415; xi, 388; obit., xvi, 688.  
 Windward Islands, the, xii, 802; xiv, 403; xvi, 863; xvii, 793; xx, 762.  
 Windward, the yacht, x, 192.  
 Wines, commerce in, iv, 169; sulphates in, vii, 90; in California, xix, 90; xx, 104.  
 Wines, Rev. E. C., xii, 702, 704.  
 Wing, C. P., sketch, xiv, 653.  
 Wingfield, Lewis, obit., xvi, 689.  
 Winkler, experiments by, ii, 500.  
 Winnecke, Dr., discovery, ii, 46; observations, vi, 39.  
 Winnipeg, xiii, 174; city hall at, xvi, 479.  
 Winona, view in, ii, 524; xv, 149.  
 Winslow, E. D., case of, i, 232.  
 Winslow, F., observations of, vi, 713, 714.  
 Winslow, Henry C., obit., i, 627.  
 Winslow, J. F., obit., xvii, 582.  
 Winsor, H. D., ix, 273.  
 Winter, Herman, obit., xx, 602.  
 Winter palace, the, illustration, i, 712; explosion in, v, 662.  
 Winther, Christian, obit., i, 644.  
 Winthrop, R. C., obit., xix, 608.  
 Winton, Sir F. de, x, 192.  
 Wire, new galvanizing process for, x, 579; machine for painting, xi, 743.  
 Wire-fences, xi, 743; illustration, 743; patent declared invalid, xii, 650.  
 Wisconsin, in every volume; repeal of railroad legislation act, i, 806; State railroad commissioner, 896; refusal to admit a woman to the bar, 809; geological survey, ii, 768; local indebtedness, iii, 828; railroad commissioner's report, 829; reduction of tariff-rates, 829; unconstitutionality of the law to protect trademarks, 831; tramp-law, iv, 848; viii, 822; Indians, vi, 875; constitutional amendment, vi, 876; immigration, vii, 838, 839; money appropriated for Gettysburg monuments, xii, 806; animal mounds in, xi, 23; act to prevent killing of birds for millinery, xii, 806; population, xv, 855; suits against ex-treasurers, xvi, 868; labor statistics, xvii, 808; fish, xix, 784; tax reduction, 783; xx, 763; State census, 764.  
 Wise, Henry A., sketch, i, 809.  
 Wissmann expedition, the, xiv, 830.  
 Wissmann, Lieut., explorations of, viii, 385; x, 392; xii, 303.  
 Wister, Casper, sketch, xiii, 658.  
 Withers, D. D., obit., xvii, 582.  
 Witherspoon, A. J., xvi, 662.  
 Wittich, Ludwig, obit., xii, 641.  
 Witu, xv, 270.  
 Woburn, Mass., growth of, xii, 135.  
 Woehler, Frederick, obit., ix, 808.  
 Woelkoff, Dr., observations by, xi, 541, 544; xii, 489.  
 Woermanns, the, ix, 364, 365.  
 Wolf, discovery by, ix, 52.  
 Wolf, Gerson, obit., xvii, 605.  
 Wolfe expedition to Babylonia, the, ix, 19, 52; xi, 25.  
 Wolfe, Catherine L., sketch and port., xii, 807; bequest, xii, 279.  
 Wolfe, Joel, obit., v, 597.  
 Wolfe monument, ii, 259.  
 Wolff, Albert, obit., xvi, 689.  
 Wolff, Sir Henry Drummond, in Egypt, x, 310, 448, 755; xi, 313; xii, 241; xiii, 679.  
 Wolff, experiments by, vi, 753; xii, 675.  
 Wolle, Francis, obit., xviii, 575.  
 Wolofski, L. F. M., ix, 358; sketch, i, 810.  
 Wolsley, Sir Garnet, sketch, vii, 839; portrait, vii, 232; in South Africa, iv, 125; in Egypt, ix, 203; x, 314, 711.  
 Wolter, Charlotte, ix, 465.  
 Wolverton, George, obit., xii, 641.  
 Woman suffrage, xiii, 520, 838; xix, 784; xx, 65; in Colorado, xviii, 179; in Idaho, 396; limited in Iowa, xix, 379; xx, 623.  
 Woman's Christian Temperance Union, xv, 857.  
 Women, in India, ii, 389; x, 496; xii, 382; order conferred only on, iii, 406; instruction at Harvard for, iv, 602; admitted to the bar in Maryland, ii, 481; in California, iii, 71; not in Massachusetts, vi, 539; deaconesses, v, 638; Presbyterian Church on preaching by, iii, 693; v, 630; in office in Massachusetts, viii, 519; in Belgium, in public service, vii, 67; property rights of married, ii, 223, 340; iii, 676; iv, 107, 299, 847; v, 610; vi, 365; of widows, v, 610; vi, 575; contracts by married, in Indiana, vi, 426; suffrage question, ii, 108; iii, 525, 808; iv, 454, 598, 639; v, 344, 611; vi, 622; vii, 47, 134, 516; viii, 411, 444; ix, 374; x, 725; in England, iv, 454; in the Isle of Man, v, 344. For conventions, see under titles of States.  
 Wood, B. R., sketch, xiv, 653.  
 Wood, Daniel P., obit., xvi, 662.  
 Wood, Sir Evelyn, vii, 87; x, 306.  
 Wood, H. C., experiments by, vii, 690.  
 Wood, Mrs. Henry, obit., xii, 641.  
 Wood, Horace G., obit., xviii, 575.  
 Wood, James, obit., xvii, 582.  
 Wood, J. F., sketch, viii, 823.  
 Wood, J. G., sketch, xiv, 672.  
 Wood, John, obit., v, 597.  
 Wood, W. A., obit., xvii, 583.  
 Wood, William, obit., ii, 590.  
 Wood, William, obit., xix, 608.  
 Woodbridge, J. E., obit., ii, 591.  
 Woodbridge, Mary A., obit., xix, 608.  
 Wood-carving, ix, 246.  
 Woodcock, x, 390.  
 Woodford, James R., obit., x, 671.  
 Wood-gas, viii, 376.  
 Woodlark Islands, x, 681.  
 Wood pulp, xvii, 810.  
 Woodruff defalcation, xvi, 32; xviii, 24; xix, 30.  
 Woodruff, Israel C., obit., iii, 648.  
 Woods, G. L., obit., xv, 671.  
 Woods, Oregon pine, vi, 222; in Brazil, viii, 72; cedar, 141; pine, in Honduras, 431; cabinet, in Japan, viii, 456; of Madagascar, viii, 505.  
 Woods, Leonard, obit., iii, 648.  
 Woods, Jacob A., obit., iv, 697.  
 Woods, W. B., obit., xii, 621.  
 Woodson, E. C., obit., iii, 648.  
 Woodthorpe, Col., x, 397.  
 Woodward, C. M., experiments by, vi, 753.  
 Woodward, Dr. H., ix, 636.  
 Woodward, W. J., obit., iv, 697.  
 Wood-wool, ix, 747.  
 Woodworth, J. M., obit., iv, 697.  
 Wool, commerce in, iv, 172; in Oregon, xviii, 597.  
 Wool-growers' convention, xi, 194.  
 Wool, mineral, xvi, 528.  
 Woolner, Thomas, obit., xvii, 605.  
 Woolridge, L. C., experiments by, viii, 633.  
 Woolsey, A. II., obit., xviii, 575.  
 Woolsey, T. D., sketch, xiv, 653.  
 Woolson, Constance F., sketch, xix, 788.  
 Woolworth, S. B., obit., v, 597.  
 Woonsocket, R. I., xii, 135.  
 Wooten, Edward, obit., xii, 621.  
 Worcester, Mass., growth of, xii, 136; soldiers' monument at, iii, 526; water, xix, 780.  
 Worcester, Thomas, obit., iii, 648.  
 Wordsworth, Charles, xvii, 605.  
 Wordsworth, Christopher, x, 671.  
 Work, Henry C., obit., ix, 613.  
 Working-people, accidents and sickness, insurance for, in Germany, viii, 394; xii, 328; new English law on housing of, x, 453. See also Labor.  
 World's Columbian Exposition, xvi, 836; xvii, 812; xviii, 760; fine arts at, 312; libraries at, 431. See also the articles on the several States.  
 World's Convention, xviii, 700.  
 World's Congress Auxiliary, xviii, 768.

- World's Fair Convention, in Alabama, xvi, 7; in Arkansas, xvi, 32; in Florida, xvi, 303; in Kansas, xvi, 403.
- World's Fairs, viii, 824.
- Worsaac, J. J. A., obit., x, 672.
- Worth, Charles, obit., xx, 622.
- Wörthen, A. H., sketch, xiii, 658.
- Wortley, S., observations by, viii, 528.
- Wrangel, Count von, obit., ii, 613.
- Wrangel Land, v, 301; an island, vi, 323, 324.
- Wray, Mary R., obit., xvii, 583.
- Wright, A. W., invention, ii, 498.
- Wright, Edward, obit., xx, 602.
- Wright, Elizur, obit., x, 654.
- Wright, H. G., xiii, 11.
- Wright, Henry, obit., xx, 602.
- Wright, Horatio G., v, 29.
- Wright, James, obit., xviii, 575.
- Wright, John G., obit., xv, 671.
- Wright, R. S., x, 420.
- Wrinkler, Clemens, xi, 140, 145.
- Wroblewski, Mr., experiments by, ix, 122, 434; xi, 138.
- Wroblewsky, S., sketch, xiii, 669.
- Wunderlich, K. A., obit., ii, 614.
- Wurtz, C. A., experiments by, vi, 96; obit., ix, 625.
- Wuttke, Heinrich, obit., i, 644.
- Wyant, A. H., obit., xvii, 583.
- Wyatt, Sir M. D., obit., ii, 614.
- Wyckoff, W. C., sketch, xiii, 659.
- Wyckoff, Dr. W. H., obit., ii, 591.
- Wylie, Robert, obit., ii, 591.
- Wyllie, T. A., obit., xx, 602.
- Wyllis, Sir William, obit., xvi, 689.
- Wyman, Luther B., obit., iv, 697.
- Wyoming (Territory, afterward State), in every volume except iii-vii; xiii, xiv, xviii; with map, xv, 860; geysers, ii, 770, 771; state of affairs, ii, 770; sheep and cattle exported, 770; viii, 826; ix, 810; winter grazing and wheat raising, ii, 770; Indians, ii, 770; viii, 826; books on, ii, 771; penitentiary commissioners, ix, 810; x, 787; the Chinese, x, 787; irrigation, xi, 840; public buildings, xi, 840; oil, xii, 808; railroads, charities 808; population and map, xv, 860; admission act, 862; fish, xix, 792; xx, 764.
- Xingu River, exploration, x, 104.
- Xylophone, xvi, 870.
- Yachts, trials of steam, vi, 546; illustrated article on, x, 788; xvii, 828; xviii, 774; xx, 766.
- Yadrinseff, Nicolai, obit., xix, 624.
- Yahya Khan, x, 14.
- Yaki Deshik, cave, x, 38.
- Yakoob Beg, i, 776; ii, 41, 418; iii, 96; burning of the body of, iv, 145; children of, *ibid.*
- Yakoob Khan, iii, 487; iv, 7, 9, 13, 491. See *Afghan War*, v, 4.
- Yale College, xi, 840; buildings of, ii, 222, 224, 225, 226.
- Yamada, Count A., obit., xvii, 606.
- Yamdok Cho, Lake, x, 395.
- Yangtse, navigation of, xvii, 155; xv, 115.
- Yang-Woo, destruction of the, ix, 141, 142.
- Yap Islands, x, 139.
- Yaqui Indians, x, 590.
- Yard, Edward M., sketch, xiv, 654.
- Yarmouth, xiv, 163.
- Yate, Capt., x, 8, 9; 10, 12.
- Yates, Edmund H., obit., xix, 624.
- Yeames, William F., x, 364.
- Yeast-cake, xvi, 707.
- Yellow Fever, ii, 298; iii, 12; xiii, 9, 314, 340, 563. See *Fever*, *Yellow*.
- Yellow Flags, viii, 767.
- Yellow River, v, 289.
- Yelverton, Sir H. R., obit., iii, 663.
- Yemen, rebellion in, ix, 764.
- Yeo, G. F., experiments by, vi, 748; ix, 658, 661; x, 695.
- Yeoman and small holdings act, x, 524.
- Yerkes telescope, the, xviii, 47.
- Yonkers, xiv, 162.
- York, England, relics at, ix, 22.
- York, Pa., growth of, xii, 136.
- Yorktown, centenary of, and monument, vi, 869; illustration, vi, 870; x, 381; siege of, x, 558.
- Yosemite Valley, map, iii, 70; views in, iii, 71, 73.
- Yoshida Kyonari, obit., xvi, 689.
- Yost, G. W. N., obit., xx, 602.
- Youmans, E. L., xii, 808.
- Young, Alexander, obit., xvi, 662.
- Young, A. H., obit., xv, 671.
- Young, Brigham, sketch, ii, 771.
- Young, Charles A., observations by, iii, 34; viii, 21, 24, 26.
- Young, Daniel P., obit., iii, 648.
- Young, Dominic, obit., iii, 648.
- Young, E., explorations of, i, 331.
- Young, J. W., xii, 111.
- Young, T. L., sketch, xiii, 659.
- Young, V. B., obit., xvii, 583.
- Young, William C., obit., xviii, 575.
- Younghusband, Mr., xii, 310.
- Young-Man-Afraid-of-His-Horses, obit., xviii, 575.
- Young Men's Christian Association, ii, 773; xiii, 849; xvi, 870.
- Youngstown, Ohio, xv, 150.
- Yruga, Carlos de, Spanish minister recalled, xiii, 269.
- Yules, David Levy, obit., xi, 707.
- Yunker, explorations, viii, 386.
- Yunnanites, iv, 146.
- Yussuf Pasha, viii, 290; defeat of, 300.
- Yvon, Adolphe, obit., xviii, 588.
- Zabriskie, F. N., obit., xvi, 662.
- Zabriskie, J. L., xii, 672.
- Zakzaga, battle of, i, 5.
- Zakrejewsky, Col., x, 9.
- Zaldivar, R., President of Salvador, iii, 747; his relations with Barrios, x, 465, 466.
- Zaldua, F., President of Colombia, his death, vii, 104.
- Zaleski, Bodhan, obit., xi, 729.
- Zalewski, Lieut., obit., xvi, 690; his expedition, 267.
- Zambesia, British, xiv, 104; xvii, 76.
- Zanesville, Ohio, xv, 150.
- Zankoff party, the, in Bulgaria, ix, 102; x, 730-732.
- Zante, Earthquakes in, xviii, 370.
- Zanzibar, seizure of ports of, i, 246; article on, x, 794; xiii, 850; xiv, 830; xvi, 264; xvii, 244; xviii, 271; xix, 246; xx, 239; contest with Germany, x, 795, 796; Anglo-German treaty concerning, xii, 810.
- Zapote-wood, ix, 493.
- Zavala, Joaquin, vi, 661.
- Zebehr Pasha (or Sebehr), iv, 2; viii, 290, 296, 301, 302; ix, 299-301; x, 310, 313, 315, 316; xii, 244.
- Zeiss, Mr., ix, 509 *et seq.*
- Zelenoy, Gen., x, 5, 6, 16.
- Zenger, theory of, viii, 25.
- Zentmayer, J., ix, 501-505, 517.
- Zerega, Augusta, sketch, xiii, 659.
- Zeuner, K., obit., xv, 692.
- Zhob Valley, ix, 7; x, 395.
- Zibepu. See *Usibepu*.
- Ziegler, Franz, obit., i, 644.
- Zillox, J., obit., xv, 672.
- Ziemalkowski, Dr., iv, 60.
- Zigliara, T., obit., xviii, 589.
- Zil-es-Sultan, x, 14, 686.
- Zimbabwe, ruins at, xvi, 23; xvii, 15.
- Zimmermann, Apallon E., sketch, ii, 773.
- Zimmermann, C., experiments by, viii, 117.
- Zimmermann, Karl, obit., ii, 614.
- Zimmermann, W., obit., iii, 663.
- Zine, reduction of ores, vii, 531; purification of, x, 154; mining, xii, 485; process of extracting from blende, 485; xiv, 541. See also under *Metallurgy*.
- Zireon, ix, 304.
- Zireonia, xii, 109.
- Zither, xiv, 833.
- Zoan (Sân), ix, 19, 600.
- Zodiacal light, xv, 40.
- Zöller, Hugo, x, 122, 393.
- Zoölogy, work in, x, 304.
- Zopfl, Heinrich M., obit., ii, 614.
- Zorbas, battle at, vii, 371.
- Zorilla, José, obit., xviii, 589.
- Zorilla, Manuel R., obit., xx, 622.
- Zorillists, the, ix, 742.
- Zorka, Princeess, viii, 549.
- Zsedenyi, Eduard, obit., iv, 702.
- Zuccalmaglio, Vincenz von, obit., i, 644.
- Zuckertort, J. H., sketch, xiii, 669.
- Zulfikar, Pass of, x, 17, 18.
- Zulla, protectorate, xiii, 5, 452.
- Zulus, the, history of, iv, 852; war with, iii, 82; iv, 121; discussed in Parliament, v, 330; Cetewayo reinstated, viii, 91; effects of, *ibid.*; dancing, ii, 86.
- Zululand, xiii, 125; xiv, 105; xv, 95; map of, iv, 122; division of, ix, 114; x, 136; xi, 135; annexation of, xii, 92. See also *Zulus and Cape Colony*.
- Zunz, Leopold, obit., xi, 729.
- Zuyder Zee, proposed reclamation of, vii, 280.
- Zwiefel, explorations by, v, 290; xii, 676.
- Zwysen, J., bishop, obit., ii, 614.
- Zymotic diseases, x, 796. See also *Germ Theory of Disease*.









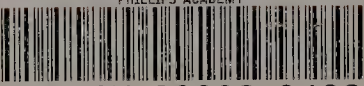








PHILLIPS ACADEMY



3 1867 00098 9462





